

Energising Development

Multi-annual indicative Programming 2023-2025



Partnership between

The German Federal Ministry for Economic Cooperation and Development

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Content

EnDev at a glance	5
1. Executive Summary	6
2. Portfolio development	10
2.1 Dashboard.....	10
2.2 Energising Lives: Social Development.....	12
2.3 Energising Opportunities: Economic Development.....	20
2.4 Energising Climate: Combating climate change	22
3. Partnerships	23
4. Reports and accounts.....	28
4.1 Planned budget allocation	28
4.2 Planned activities	31
Abbreviations	35
Annex A	39
Annex B	447

List of tables

Table 2-1 Indicative countries and technologies from 2023 to 2025.....	11
Table 4-1 Programming budget until 12/2024 in million EUR.....	29
Table 4-2 Indicative overall budget until 12/2025 in million EUR.....	30
Table 4-3 Ongoing country and regional projects	32
Table 4-4 Management and thematic activities.....	35

List of figures

Figure 2-1 Projected number of People, SIs and MSMEs reached (2005-2025).....	10
Figure 2-2 Indicative funding by region (2009-2024).....	10
Figure 2-3 Results and projected number of people reached incl. associated projects	12
Figure 2-4 Projected distribution of household access by region (2005-2025)	13
Figure 2-5 EnDev's portfolio with regard to HTC and LNOB interventions	14
Figure 2-6 Number of additional people reached by implementation focus.....	14
Figure 2-7 Number of expected LNOB results by type of vulnerable group	15
Figure 2-8 Results and projected number of social institutions (2005-2025).....	19
Figure 2-9 Results and projected number of social institutions by region and technology.....	19
Figure 2-10 Results and projected number of micro, small and medium-sized enterprises....	20
Figure 2-11 Projected results for MSMEs: geographic and technological distribution	20
Figure 2-12 Projected additional MSMEs to be reached by technology	21
Figure 2-13 Projected CO ₂ e annual and total CO ₂ e savings by 2025	22

EnDev at a glance

733 million people worldwide live without electricity and about 2.4 billion people lack access to clean cooking solutions. This has a dramatic impact on quality of life, environment, health, education and income opportunities. EnDev's involvement focuses on providing access to modern, renewable energy. This is a pivotal factor in strengthening socio-economic development and combating climate change.

EnDev's drive is to improve the lives of the most vulnerable people, ensuring no one is left behind. Economic opportunities and green jobs are created by building markets for modern, renewable energy. EnDev contributes to reducing greenhouse gas emissions to protect our planet's climate. Its approach is to empower structural, self-sustaining change; kickstarting market and sector development that evolves further without support by EnDev.

EnDev's work is about people. Results are monitored and reported rigorously. EnDev's achievements on helping people, schools, health centres, and companies gain access to electricity or transitional and clean cooking technologies can be found in this report. This report also presents EnDev's impacts on gender, job creation, and reduced carbon emissions.

EnDev is a strategic partnership. Dedicated donors, partners and individuals work together to support social development and economic growth by providing access to modern, renewable energy in more than 20 countries around the globe. The driving force behind EnDev is the partnership of Germany, the Netherlands, Norway, and Switzerland; donors who are committed to accelerating energy access and socio-economic development.



1. Executive Summary

In Q4 2022 and Q1 2023, EnDev country projects were requested to initiate the (re-) programming for their new indicative activities until the end of 2025. In the process, particular emphasis was placed on interventions targeting leave-no-one-behind (LNOB) end-users and the transition to higher-tier cooking (HTC) solutions. The (re-)programming results in the projection until 2025 of an impressive 36.1 million people reached and a strong growth in social institutions and productive use applications. LNOB end-users are expected to account for a quarter of people reached and almost 10 percent of total results will involve access to higher-tier cooking solutions.

These results are substantiating the strategic priorities as provided by the Consultative Group in 2022. After a thorough review process which involved feedback from an Independent Technical Advisory Committee (ITAC) and strategic partners, a comprehensive package of activities was produced in the form of project proposals including Theories of Change for all the EnDev country projects. Detailed EnDev country proposals are compiled in Annex A. Annex B presents the feedback from EnDev's strategic partners as part of the independent assessment of the programming.



Key trends

Indicative planning anticipates that by 2025 EnDev will have facilitated sustainable access to modern energy services and technologies for about 36.1 million people. Including the results of EnDev's associated projects, 51.3 million people are anticipated to be reached by end of 2025.

By 2025, 78% of EnDev's target achievement on household level comes from access to thermal energy (incl. higher-tier cooking), while households with access to electrical energy contribute 22% to the overall target achievement. Putting particular emphasis on interventions targeting leave-no-one-behind (LNOB) end-users and the transition to higher-tier cooking (HTC) solutions, country projects were asked to allocate a combined budget share of 20-30% towards interventions in these two focus areas.

A positive programmatic trend is also foreseen with regard to energy access for social institutions (SI). It is anticipated that an additional of 6,680 SIs (+17%) will be reached until the end of 2025. Particular emphasis is continued on productive use of energy. Thus, a significant positive trend is anticipated regarding energy access for micro, small and medium-sized enterprises (MSMEs) with a planned additional result of 23,429 MSMEs (+20%), reached until 2025. GHG emissions reductions are expected to show a continued growth so that in 2025 EnDev will contribute to annually save 3.39 million tonnes of CO₂ emissions.

Financial situation

With this programming, EnDev proposes to allocate a total of EUR 544.918 million for continued global management as well as operations in 21 countries until December 2024. This requires additional funds of EUR 26.503 million on top of currently

secured available funds of EUR 518.415 million. Advanced negotiations with one donor suggest that EnDev will be able to secure the additionally needed funds shortly. EnDev's total indicative budget until 2025 sums up to EUR 580.412 million. Further additional funds in the amount of EUR 19.597 million will be required to continue implementation until December 2025.

Portfolio development

EnDev continues to broadly deliver on SDG 7 and raise its commitment by particularly targeting leave-no-one-behind and the transition to higher-tier clean cooking. Based on the recently streamlined monitoring system, EnDev has made projections for the results of the upcoming period per market segment. From 6.0 million people that are expected to be reached additionally until 2025, 27% will be people belonging to LNOB target groups. People gaining access to higher-tier cooking solutions will make 8% of the additional results. It is expected that 0.8% of EnDev results will belong to both LNOB target groups and with access to higher-tier cooking solutions. Interventions have been carefully designed to match the specific country context of implementation. Refugee-hosting countries for instance had a strong programmatic focus to incorporate respective activities in their portfolios while others focus on providing energy access to internally displaced people or apply approaches to reach the poorest of the poor. In line with EnDev's gender strategy, various country projects are supporting female-led or female-owned businesses.

With regard to cooking, programmatic trends show a continued support to companies producing and distributing biomass-based transitional cooking solutions. At the same time, through the strategic steering towards higher-tier cooking segments, more and more countries are exploring the potential of electric cooking and taking successful pilot activities to scale.

With regard to electrical energy, EnDev continues to support increasingly higher tier access, following a consumer-centric approach in line with the needs of the beneficiaries. Trends being observed in the area of rural electrification include energy access and digitalisation, as well as the interconnectivity of different technologies as part of the programming. For productive use of energy, EnDev will continue to work on priority aspects such as strengthening local businesses, creating markets for technologies, increasing the scope of productive use of energy, while also supporting micro, small and medium-sized enterprises in accessing finance.

Partnerships and innovations

EnDev will continue the collaboration with important key players in the energy access sector at micro, meso and macro level. As the 2030 target to achieve universal energy access draws closer and the urgency of governmental and donor-supported programmes to deliver results increases, the need for constant coordination among development partners has never been higher. In support of this, EnDev continues to actively participate in various networks and working groups such as the Clean Cooking & Climate Consortium (4C) or the End-User Subsidy Lab (EUSL) and will intensify cooperation with key conveners across the energy access sector, including Sustainable Energy for All (SEforALL) and the Global Energy Alliance for People and Planet (GEAPP). Acknowledging that EnDev's direct impacts are limited by the certain implementation periods and finite resources available, the programme depends on other institutional partners to ultimately scale-up proven approaches. In the next phase, closer cooperation with development finance institutions will be explored. In particular, EnDev maintains a special relationship with the World Bank and its Energy Sector Management Assistance Program, which serves as a key strategic pillar for the design of interventions.

Over the course of the programming period, EnDev will continue its work along the thematic tracks of the EnDev Learning and Innovation Agenda (ELIA) and will build upon its successful Innovation Fund activities of the past to encourage new approaches, test their viability on the market and ultimately bring them to scale.

Proposed changes

In this *Multi-annual indicative programming 2023-2025*, proposed changes are as follows:

- For all EnDev country projects, a (re-) programming is proposed to further align with EnDev's strategy while especially targeting LNOB and the transition to higher-tier cooking;
- For Bolivia and Guinea, phase-out is proposed until June 2024 and December 2023, respectively;
- For all other EnDev country projects, project durations are proposed to be extended until December 2024 and budgets to be adjusted accordingly.

Entertainment on your doorstep

Simon Otieno is the first to admit that there is not much to do in his village, perched on rocky Mageta Island in Lake Victoria, Kenya. Like most islanders, Simon used to make a living catching fish. But, as he explains: “Fishing is seasonal. Sometimes they are there, and sometimes they are not.” For many years, Simon and his family lived in a room behind one of the island’s shops, unable to afford a place of their own. Until recently, no one here owned a television.

In 2018, Simon had an idea that would change things for his community to this day: he decided to buy a solar home system and open a video hall. Since then, dozens of villagers crowd into the modest room to watch the news, movies and football games. During big football tournaments, up to 100 people squeeze in, cheering on their favourite teams. He also runs a small barber shop where he uses a solar-powered razor to cut men’s hair, all lit by the solar bulbs included in his solar home system package. The solar appliances that Simon bought have been recognised by the Global LEAP Award, an international competition that selects the world’s best off-grid appliances.

Connecting the Global LEAP Awards with a results-based financing mechanism, companies that sold these products in Bangladesh, Kenya, Rwanda, Uganda and Tanzania were provided incentives after pre-agreed results had been achieved and independently verified, such as the sale of the solar products. In 2019 and 2020, the incentives were extended to solar water pumps, off-grid refrigerators, and electric pressure cookers.

Simon’s business earns him a stable income and has brought entertainment to Mageta Island. “It’s great for the islanders”, says Simon. “Sometimes they wake me up to go and open the hall for them.”

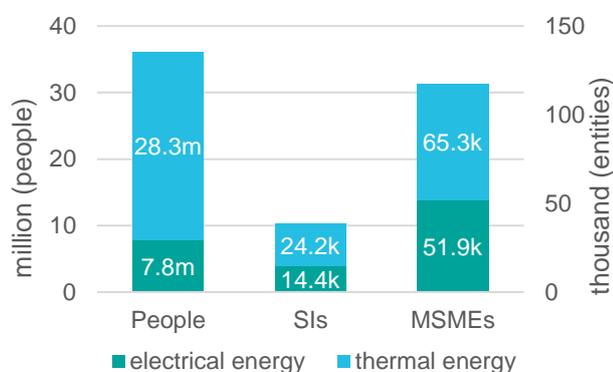
2. Portfolio development

By 2025, EnDev is expected to have facilitated sustainable access to modern energy services and technologies for about 36.1 million people, 38,520 social institutions (SI), and 117,300 micro, small and medium-sized enterprises (MSMEs). The programming anticipates that in the upcoming two and a half years (2023-2025) about 6.0 million people, 6,680 SI and 23,429 MSMEs will be reached additionally. EnDev interventions would save 3.39 million tonnes of CO₂ emissions in 2025.

2.1 Dashboard

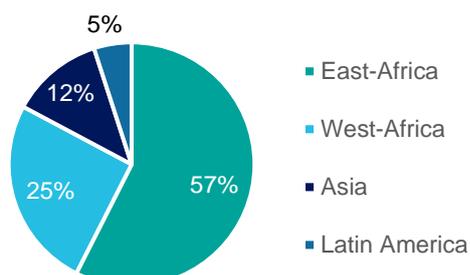
By 2025 EnDev is expected to have facilitated sustainable access to modern energy services and technologies for about 36.1 million people, including a total of 7.8 million people (22%) with access to electricity and 28.3 million people (78%) with access to transitional and clean cooking solutions (Figure 2-1). Beyond that, EnDev will facilitate access to energy to 38,520 SIs of which 37% electrification and 63% access to thermal energy. Of the 117,290 MSMEs 44% will gain access to electrical energy and 56% access to thermal energy.

Figure 2-1
Projected number of People, SIs and MSMEs reached (2005-2025)



Regionally, the focus of EnDev will remain in sub-Saharan Africa with 82% of committed funds (Figure 2-2).

Figure 2-2
Indicative funding by region (2009-2024)



The projection anticipates a shift in shares towards thermal energy compared to 2021, especially at the household level. Putting particular emphasis on interventions targeting leave-no-one-behind (LNOB) end-users and the transition to higher-tier cooking (HTC) solutions, country projects were asked to allocate a combined budget share of 20-30% to interventions in these two focus areas.

EnDev's increased ambition level on HTC and LNOB during this programming cycle contributes to this trend and a higher share of thermal energy. On the one hand expected results of HTC are fully included in thermal energy/cooking energy results focusing on the energy needs being addressed. This does include a shift towards electric cooking, a nexus between cooking and electric energy. On the other hand, interventions targeting LNOB end-user groups prioritise e.g. transitional (lower-tier) cooking solutions, with the potential to reach large unserved parts of the population.

With this combined ambition, EnDev contributes to overcome one of the major global challenges in reaching SDG7. Data show that progress on access to clean cooking lags far behind the progress made on electrification in a vast majority of developing countries and especially in EnDev's partner countries. According to the International Energy Agency, progress in the electricity space is globally outpacing that of cooking (IEA et al. 2021, World Energy Outlook 2021), which increases the importance of programs like EnDev which address all energy needs of the target groups and combine efforts promoting access to clean and transitional cooking with increasing access to electricity.

During the past years, EnDev has been reviewing its monitoring approach with a view towards a strengthened accounting of the people reached sustainably through its interventions

with transitional and clean cooking solutions and electrical energy access. In the course of last year (see also Annex C in the EnDev Progress Report 2022), with support from external expertise, this monitoring system has been adjusted and streamlined towards three factors:

Attribution, Additionality and Sustainability. The new monitoring adjustment factors have been used to calculate the projections in this document and will be verified in the course of implementation.

Table 2-1
Indicative countries¹ and technologies from 2023 to 2025

	Transitional cooking	Biogas	Higher-tier cooking	Solar PV stand alone systems	Mini-Nano Grids	Grid
Bangladesh	●		● AP	●		
Benin	●		●	●	●	
Burkina Faso		AP				
Burundi	●		●			
Cambodia	●		● AP			
Democratic Republic of the Congo (DRC)	●		●	●	●	
Ethiopia	●		● AP	●	●	
Kenya	● AP	AP	●	●	●	
Laos	●		●			
Liberia	●		●	●		
Madagascar	●		●			
Malawi	●		●	●		
Mali	●		●	●	●	
Mozambique	●		●	●	●	
Nepal	●		●		●	●
Niger	●	AP		●		
Rwanda	●		●	●	●	
Senegal	● AP		●	●	●	●
Sierra Leone	●		●	●	●	
Tanzania	●		●	●		
Uganda	●	AP	● AP	●		

¹ Components that phased out or will phase out in 2023 are shown in lighter colour. Components that are being implemented as part of an Associated Project to EnDev are designated by the abbreviation “AP”

2.2 Energising Lives: Social Development

Projections for energy access for households



The (re-) programming shows a solid growth regarding access to energy for households with a planned additional result of 6.0 million people reached by the end of 2025.

The expected average growth until 2025 for the EnDev core programme will be about 2.4 million people per year, which is higher than the average during the last four years of 1.8 million people per year. Against the background of the strategic realignment, this projection is remarkable. On the one hand, country projects are stepping up their activities in the area of higher-tier clean cooking, which from experience requires more resources than transitional cooking solutions. At the same time, country projects are also moving into more strategic and impactful but also more cost-intensive intervention areas such as a stronger push for the productive use of energy or sector development.

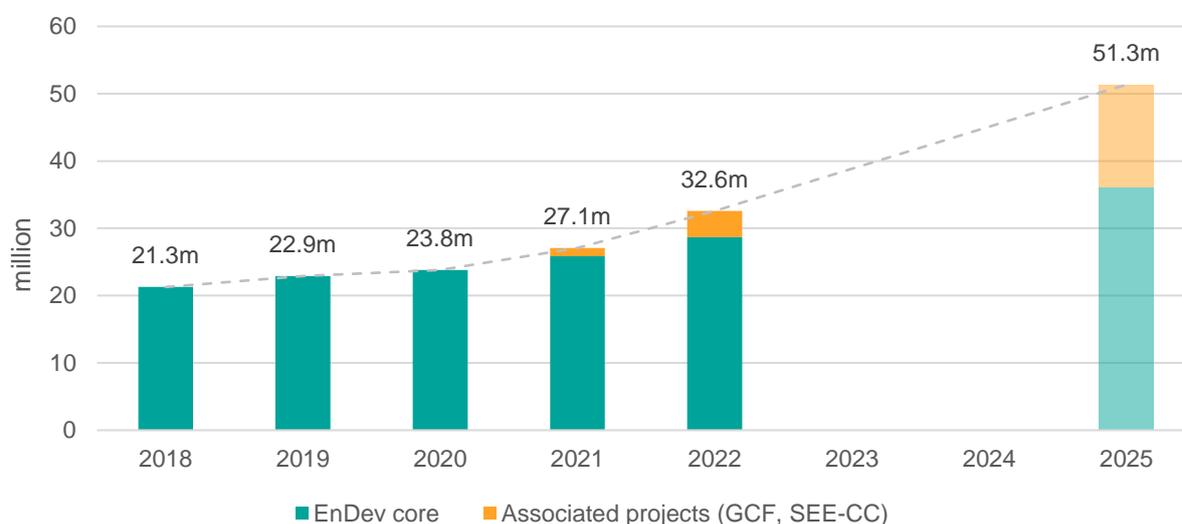
The associated project *Promotion of climate-friendly Cooking: Kenya and Senegal*

is expected to contribute an additional result of 14.4 million people until the end of 2025 to the EnDev partnership. In addition, the second associated project *Strengthening the Entrepreneurial Ecosystem for Clean Cooking (SEE-CC)* with its *African Biogas Component* and the *Higher-Tier Cooking Component* is expected to contribute an additional result of 850,000 people to the EnDev partnership.

Including these results, the overall achievement of the EnDev Partnership is planned to reach 51.3 million people by end of 2025.

It needs to be noted that such mid-term projections which span a duration of two and a half years from the date of submission of this report need to be handled cautiously and that market dynamics as well as changing implementation conditions might have massive (negative) influence on results achievement. The unprecedented implications of the past COVID-19 pandemic or the global impact of the Russian invasion into the Ukraine demonstrate a drastic example of such potential negative dynamics.

Figure 2-3
Results and projected number of people reached incl. associated projects (2005-2025)

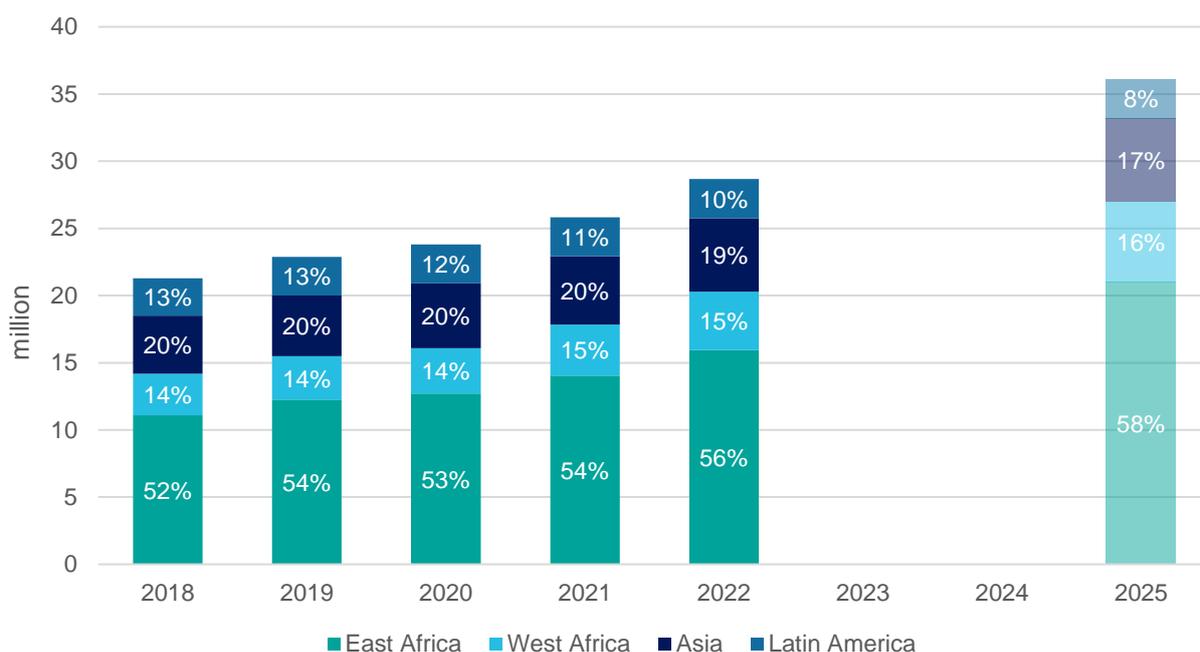


After winding down activities in Latin America in the course of 2024, EnDev will continue with a portfolio across two continents (Africa and Asia). Most of the results will be realised in sub-Saharan Africa (58% in East Africa, 16% in West Africa), while the

contribution in Asia will be slightly higher than in Latin America.

Figure 2-4 provides a detailed overview about the projected distribution of results by region.

Figure 2-4
Projected distribution of household access by region (2005-2025)

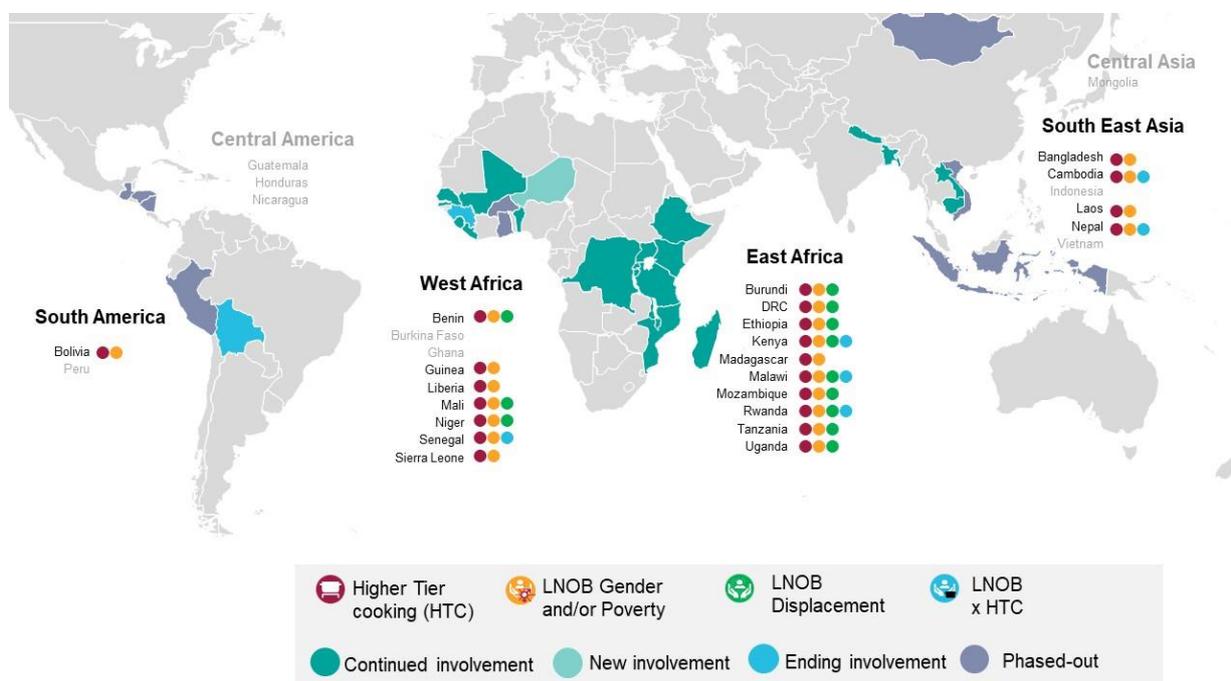


Strategic Portfolio Steering

Putting particular emphasis on interventions targeting leave-no-one-behind (LNOB) and the transition to higher-tier cooking (HTC), country projects were asked to allocate a combined budget share of 20-30% to interventions in these areas, thereby increasing the commitment in the programming period 2023-2025. This raised ambition is also reflected in the portfolio, and all country projects have developed targeted activities for LNOB target

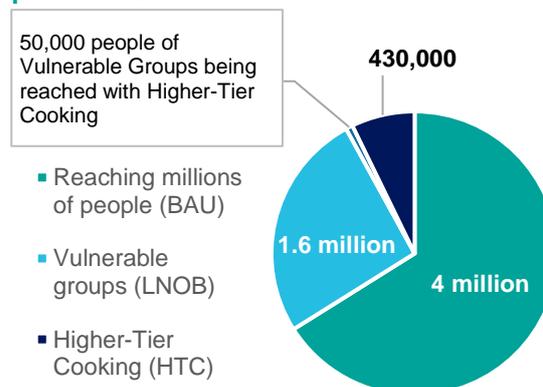
groups and higher-tier cooking (Figure 2-5) as part of their proposals. Aligned with EnDev’s strategy, interventions have been carefully selected depending on the specific country context of implementation. Refugee-hosting countries for instance had a strong programmatic focus to incorporate respective activities in their portfolios while others mainly focused on targeting the poorest of the poor.

Figure 2-5
EnDev’s portfolio with regard to HTC and LNOB interventions



From 6.0 million people that are expected to be reached in the upcoming two and a half years, 27% will be people belonging to poor and vulnerable population groups (incl. refugees), with a specific focus on women. People gaining access to higher-tier cooking will make 8% of the additional results, while 0.8% are people of vulnerable groups with access to higher-tier cooking (Figure 2-6).

Figure 2-6
Number of additional people reached by implementation focus



With 5.5 million people, 90% of the additional results will be reached by thermal energy. This shift is the result of the aggregated efforts by the country projects in trying to strike a balance between reaching more vulnerable groups, developing the market segment for higher-tier cooking solutions while maintaining overall significant quantity results in pursuing SDG 7. Additionally, interventions targeting LNOB prioritise solutions with the potential to reach large unserved parts of the population, e.g. transitional cooking solutions. The decision to phase out interventions in Bolivia in 2024, also removes a strong contributor to target achievement in the field of electric energy.

Programmatic trends in LNOB

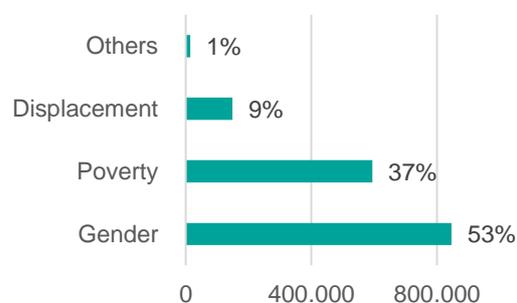
EnDev defines LNOB as the programme’s commitment to address discrimination, exclusion and inequalities of certain vulnerable groups through targeted LNOB-sensitive approaches and measurable results.

This commitment is also reflected in EnDev’s strategy of 2019-2025 by emphasising that “*EnDev grows and strengthens markets for modern energy services and products at scale, in particular for the poor, ensuring no one is left behind*” as well as EnDev’s new Gender Strategy which also places a strong focus on inclusion.

This increased ambition is also reflected in the programming proposals, as all countries across the portfolio have developed targeted activities for LNOB target groups, namely refugees, internally displaced people (IDPs), host communities, poorest of the poor, socio-economically disadvantaged women and others. Of the total results of 1.6 million people that will be reached under LNOB trajectories, 53% will be women and 37% the poorest of the poor. In addition, 9% of the outcomes will be attributable to interventions targeting the

refugee and displacement contexts (Figure 2-7).

Figure 2-7
Number of expected LNOB results by type of vulnerable group



Refugee-hosting countries had a strong programmatic focus to incorporate activities in their portfolios that ensure the energy needs of refugees and host communities are not overlooked. EnDev teams in Ethiopia, Kenya, Mozambique, Rwanda and Tanzania are bridging the energy access gaps and supporting market development through tools like Result based Financing (RBFs) as well as strengthening MSMEs through Business Development Services (BDS) or creating new income channels like briquetting technologies in these mostly underserved markets. Such de-risking mechanisms enable companies to enter these nascent markets – characterised by increased barriers. These barriers include high start-up costs, uncertainty with regard to the market (movement of people), regulatory obstacles for the private sector players to operate in the camps and higher risks due to the partly limited access to resources.

To tackle the limited resources barrier, a demand side subsidy (DSS) approach is planned by EnDev in Liberia, Malawi, Niger and Uganda as part of the DSS Component and supported by EnDev core resources to enable these groups to access technologies like off-grid solar or transitional cooking solutions. Further, in

countries like Benin and Malawi, which are witnessing an increase in internal displacement due to climatic hazards like floods, EnDev continues to support internally displaced people (IDPs) in protracted situations through market-based approaches.

In line with EnDev's gender goal *to support the self-empowerment of women and gender equality*, female-led or female-owned businesses will be supported in various country projects such as Bangladesh, Cambodia, Kenya, Liberia, and Mali by providing them with energy access e.g. through RBFs and business development services (BDS). Through these activities, EnDev is affirming that specific BDS such as mentorship, and/or including empowerment training modules for female businesses is crucial in addressing the gender gap. Furthermore, EnDev activities in Tanzania, Uganda, Burundi and DRC are also promoting female employment across the cooking sector to enable women to move up the value chain and increase their income.

EnDev's country projects have developed approaches to reach the poorest of the poor, ranging from a geographic targeting of the most remote rural areas in Nepal, Mozambique, Uganda and Tanzania, as well as using official data provided by ministries like in Malawi to target people living below the poverty line. By either supporting market actors via RBFs or using DSS EnDev is also reaching the most vulnerable groups considering their limited financial resources.

Furthermore, country projects like Bangladesh, Nepal, Uganda and Sierra Leone are also targeting other vulnerable groups within their country context, such as ethnic minorities, labour migrants, youth, and

people with disabilities, to ensure that no one is left behind.

Programmatic trends in thermal energy access

With the aim of accelerating the transition to higher-tier access levels, EnDev is increasing its ambition and taking successful pilot activities from previous programming periods to the next level. Building on these experiences, the whole EnDev portfolio will now explore potentials and initiate activities for market development. The objective is to contribute to a wider sector transition geared towards higher-tier access in the cooking sector, acknowledging that these activities come with higher costs and depend on respective country contexts and market stages.

HTC is operationalised to include cooking solutions at Tier 3 and above², in particular stove types powered by electricity or by clean fuels such as biogas, ethanol and advanced biomass stoves (e.g. fueled by pellets or briquettes).

Taking e-cooking as an example which will be responsible for 69% of the results targets in the higher-tier trajectory, countries with a relatively low market potential for higher tier cooking (HTC) like Burundi, DRC and Mali, are characterized by the absence of products and private sector players, as well as low purchasing power and electrification rates. The starting point here is a thorough market assessment and feasibility studies combined with piloting activities.

Countries with a good or even very good market potential will integrate the new ambition directly into their market development activities, addressing the trifold set of barriers to supply, demand and enabling environment. Despite these preconditions,

² As per the <https://mtfenergyaccess.esmap.org/>

it is important to note that the market for eCooking appliances is in a nascent stage in most countries. EnDev will support the private sector to increase supply in urban and peri-urban areas and incentivise companies to reach out into new areas and customer segments by offering e.g. results-based financing.

In order to accelerate the uptake of eCooking appliances on the demand side, EnDev will continue to engage in awareness raising and behavior change campaigns and will explore different financing mechanisms for customers. For grid-connected eCooking, particular emphasis lies on the enabling environment and working closely with national and local energy authorities to ensure that grid capacity and reliability matches the needs of electric appliances.

EnDev's multi-annual indicative programming strikes the balance between leaving no one behind and fostering a wider sector transition towards higher-tier cooking. Therefore, certain transitional cooking solutions, with the potential to reach large unserved parts of the population remain important as a bridging solution until HTC technologies have penetrated these last-mile markets successfully. This is reflected in the latest EnDev programming, with support to companies producing and distributing transitional cooking solutions, continued efforts to raise awareness about quality-certified products and behavioral change campaigns like those found in Burundi and DRC.

To support the enabling environment and stimulate growth for all cooking solutions, the sector needs coordination and knowledge exchange among key stakeholders. To this end, support to national clean cooking alliances continues e.g. in Bangladesh, Ethiopia, Kenya and Uganda.

One additional key aspect is the establishment of quality standards and related policies for enforcement of the same to shift markets to higher quality products and stimulate innovation. Some country projects, such as Bangladesh, Kenya and Malawi, specifically target vulnerable groups such as refugees and host communities, encouraging companies to expand their businesses to not only provide access to cooking technologies, but also to create employment opportunities.

Programmatic trends in electricity access

EnDev will continue to build, strengthen, and support markets for decentralised renewable electrification in off-grid rural and peri-urban settings, as well as in vulnerable and underserved communities, to achieve social and economic development via both lower- and higher-tier energy access. On-grid densification/extension has been and will be supported in certain contexts. The programming reveals that EnDev's increased focus on electric stoves, as part of higher-tier clean cooking, will place increased importance on higher-tier electrification (tiers 3-5³) through nano-, mini- and on-grid solutions to match the increasing energy demand for eCooking. At the same time, many EnDev countries still have extremely low electrification rates in rural areas. In 15 out of 21 EnDev countries, the rural electrification rate is less than 50%; in 10 countries, it is less than 20%. LNOB target groups in particular are in constant need for solar products that enable to access the lower electrification tiers 1 and 2 as a first steps towards using a modern form of energy.

EnDev continues to support the development of product quality and innovation for electrification technologies, namely pico-PV, solar home systems (SHS), standalone

³ As per the [Multi-Tier Framework for Energy Access](#)

PV systems and nano-/mini-grids. EnDev puts a special focus on sustainability in solar products' life cycle as part of an integrated approach. In countries like Benin, Ethiopia and Kenya, EnDev supports activities and policies to improve the end-of life treatment and handling of solar components, such as lead-acid batteries. To inform these activities and orient the programming, EnDev recently co-edited an *End-of-Life Management Measures Catalogue* for solar energy access projects. Solar cooling, as one of the promising new technologies is being tested and implemented in several EnDev countries, for example walk-in solar cooling containers in rural agricultural markets in Rwanda, resulting from a successful innovation trajectory. Some of these cooling technologies do not even require battery storage, thus mitigating further e-waste concerns.

An increasing importance of digitalisation can be observed across the portfolio due to the further development of technologies and the increasing interconnectivity of systems. While digitalisation in pico-PV, SHS and standalone PV technologies was initially developed out of the necessity to track and monitor the technical and financial performance of distributed assets (e.g. via PAYGO), other system technologies are now following suit. In Ethiopia, EnDev provides support to government agencies through the digitalisation of the off-grid sector as a hub for better identification of, and decisions about integrated electrification planning. In Mali, EnDev supports companies to deploy integrated solutions to cover the entire energy demand of rural communities, ranging from commercial customers and main productive uses to social institutions and nearby households.

Projections for energy access for social institutions



The programming shows a positive trend regarding access to energy for social institutions (SI) with a planned additional result of 6,680 SI reached until the end of 2025. The overall achievement is planned to reach 38,520 SI.

Until 2025 additional 2,760 SIs will get access to electricity, while 3.920 SI will get access to thermal energy.

To that end, the distribution between electrical and thermal energy has not changed noticeably compared to 2021, settling at around 41% SIs with access to electricity and 59% of SIs with access to thermal energy.

Figure 2-8
Results and projected number of social institutions (2005-2025)

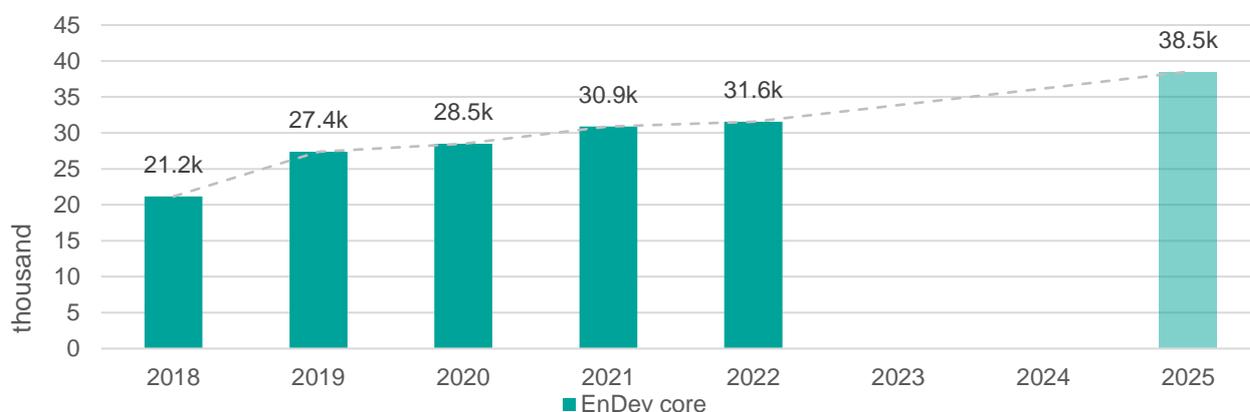
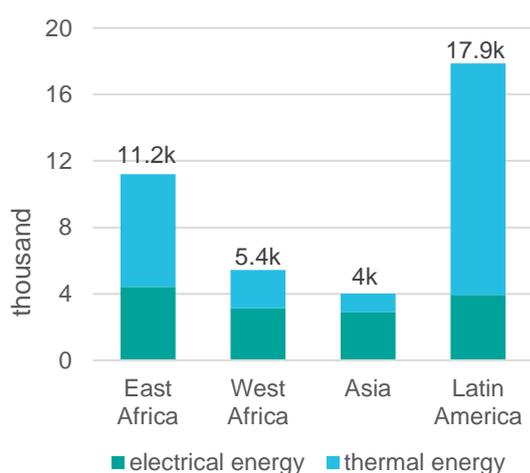


Figure 2-9
Results and projected number of social institutions by region and technology (2005-2025)



Regionally, the largest contribution to SI target achievement until 2025 will still be in Latin America with 46% (in total 17,873 SI) (Figure 2-9). East Africa is expected to contribute 29% (in total 11,200 SI), while the share of SI in West Africa is 14% (in total 5,550 SI). Asia will contribute 10% (in total 4,000 SI).

It is expected that especially the number of health centres reached in Africa will increase further due to EnDev's special focus on *Energising Health*, which is aiming at providing access to energy and cooling capacities to more than 800 health facilities. Since mid-2022, Energising Health is implemented in Ethiopia, Liberia, Malawi, Mali and Senegal as a part of the German Last Mile Initiative.

2.3 Energising Opportunities: Economic Development

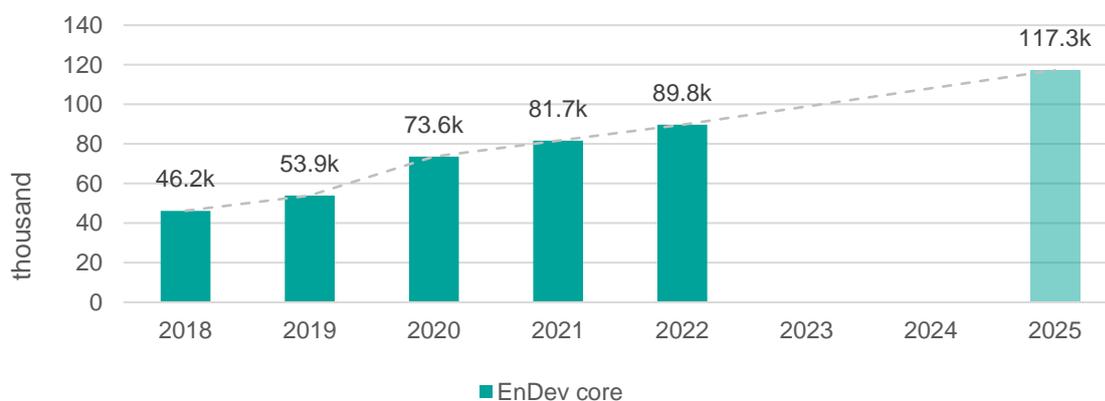


Projections for energy access for micro, small and medium-sized enterprises

A continuous positive trend is anticipated regarding energy access for micro, small and medium-sized enterprises (MSMEs) with a planned additional result of 23,429

MSMEs reached until the end of 2025. Countries planning to deliver the highest additional results are Ethiopia, Kenya, Benin, Laos and Nepal. The overall achievement of EnDev is expected to reach 117,300 MSMEs by the end of 2025 (Figure 2-10).

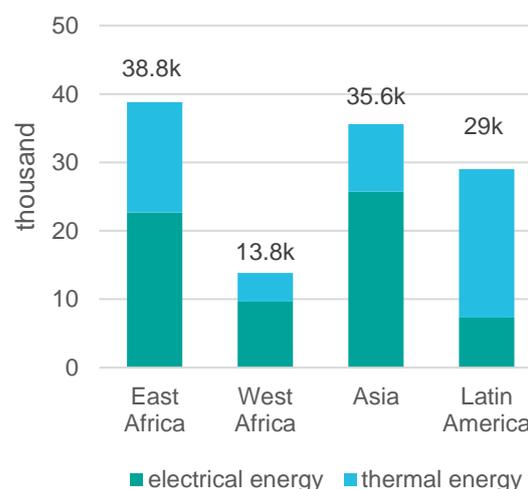
Figure 2-10
Results and projected number of micro, small and medium-sized enterprises



Similar to 2022, where the split between electrical energy and thermal energy was 45% and 55% respectively for MSMEs, projections show that electrical and thermal energy services, with 44% and 56%, are again nearly equally distributed by 2025.

Also, there is a strong increase in terms of share of overall MSMEs to be reached in sub-Saharan Africa, predominantly East Africa. Whereas the distribution of MSMEs reached in 2022 across East Africa, West Africa, Asia and Latin America was at 19%, 13%, 37% and 31% respectively, by the end of 2025 the shares are expected to be 33%, 12%, 30% and 25% (Figure 2-11).

Figure 2-11
Projected results for MSMEs: geographic and technological distribution



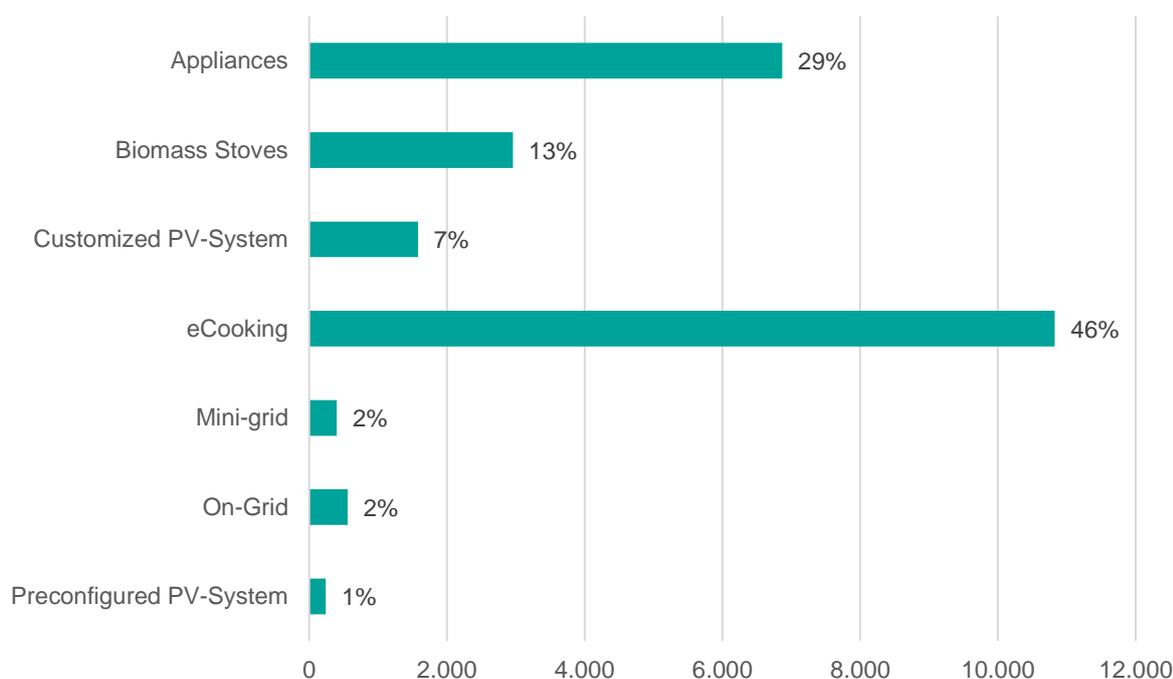
In terms of promoted technologies, eCooking (i.e. pressure cookers, rice-cookers, etc.) will be the most significant single technology to achieve additional results until 2025 with a significant share of 46% of additional MSMEs reached. This trend is a clear result of the thematic emphasis put on higher-tier cooking. Together with the additional expected 13% of MSMEs reached with biomass stoves, the food and beverage sector (e.g. restaurants, bakeries, breweries, etc.) as well as the hospitality sector (e.g. hotels) are again the most important economic sectors in EnDev's productive use of energy (PUE) portfolio.

Accounting for 29% of additional MSMEs to be reached, other Appliances, (excluding eCooking devices) now make up the second-most important technology in terms of PUE promotion until 2025. Solar water pumps for irrigation are by far the most dominant appliances in this category, though it also includes other agricultural appliances like coolers, dryers, and milling

machines, and other miscellaneous appliances for small businesses. The agricultural machines and cooling devices (also refrigerators and freezers) will be used to increase harvests as well as to reduce food losses and in the process increase profitability.

Complementary to these sectors, a typically diverse portfolio of MSMEs will be reached with access to electrical energy coming from customized PV-Systems (7%), On-Grid (2%), Mini-Grid (2%) and preconfigured PV-systems (1%). As in recent years, those MSMEs are predominantly located within the manufacturing- (e.g. furniture, clothing, metals) or service-sector (e.g. haircutting). The businesses will use electrical appliances for efficiency and productivity gains, to illuminate their workspaces, or to offer services such as phone charging, information, cooling and freezing (Figure 2-12).

Figure 2-12
Projected additional MSMEs to be reached by technology



Programmatic trends in productive use of energy

By 2025, productive use support at EnDev will be widely mainstreamed – integrated into nearly all energy access components, including those for more remote and disadvantaged populations. Also, experiences from the last cycle with innovative approaches are being expanded, e.g., PUE support in refugee areas, targeted value chain support, RBFs with flanking technical assistance (TA) for agricultural equipment and access to finance instruments.

The vast majority of countries is planning to integrate PUE into their energy access activities in 2023-2025 and most countries integrate PUE into several components. Many planned PUE interventions also have a strong gender and/or LNOB focus, with targeted support for beneficiaries like women-led processing groups or refugees and host communities. Supporting economic activities is seen as a key to making outreach to LNOB populations sustainable, even more so than for other solar off-grid markets. Also notable is an increased focus on the potential economic and health impact of clean cooking solutions for restaurants, food vendors and bakeries, which

goes along with the strong emphasis on eCooking for productive use.

Technically, the focus on the agricultural and food sector is increasing, as well as the use of RBF instruments (particularly for more market-ready appliances like solar water pumps) that are flanked by TA, BDS and awareness raising. Support for more PAYGO options is also on the rise, mirroring market developments. Piloting of more nascent technologies and business models (cooling and drying e.g.) is also continuing and e-transportation is being explored in two countries.

In 2023, some country projects expect to inherit and continue PUE activities from the regional BMZ “Green Peoples’ Energy” Programme which will boost the EnDev core PUE Portfolio. Integration of lessons learned from the IKEA Foundation-funded Sustainable Energy for Smallholder Farmers (SEFFA) Project is also anticipated to further branch into the agricultural sector. In 2022, EnDev also launched a new agricultural PUE project with the GEAPP project in Malawi, which will bring in new approaches and learning opportunities.

2.4 Energising Climate: Combating climate change

CO₂e emission savings projection

-CO₂ Annual savings of CO₂e emissions are expected to show a continued growth. In 2025, up to 3.39 million tonnes of CO₂e (per year) will potentially be saved that can be attributed to EnDev's activities. The overall CO₂e savings of EnDev would accordingly accumulate to 31.8 million tonnes by the end of 2025 (Figure 2-13).

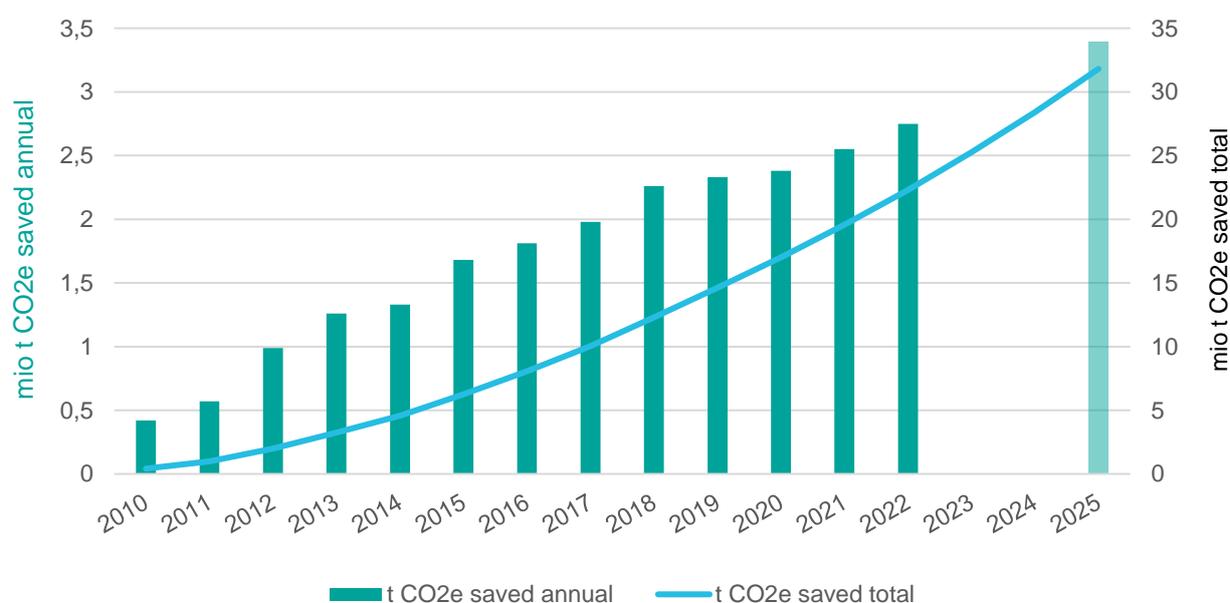
It is expected that, increasingly, EnDev's activities will have a link to the carbon market, where a certain share of results achieved will generate carbon credits on the voluntary markets or as part of NDCs wider sustainable market development. To avoid double counting of results, carbon credits generated will be excluded from the EnDev reporting. Therefore, the actual amount of CO₂e savings by 2025 might be lower than indicated in the graph. Actual

developments with regard to the (voluntary) carbon markets, NDCs and regulation at national level will (partly) determine the actual outcome.

About 97% of the projected additional CO₂e emission savings (07/2023-12/2025) will be achieved in the cooking sector. The remaining 3% will be achieved through photovoltaic systems, ranging from larger sized mini-grids to smaller-sized preconfigured PV-systems.

Regionally, the focus is on sub-Saharan Africa with a total of 93% of the additional CO₂e emission savings until 2025 (52% in East Africa and 41% in West Africa). The remaining 7% will be achieved in Asian countries.

Figure 2-13
Projected CO₂e annual and total CO₂e savings by 2025



3. Partnerships

EnDev delivers sustainable energy access through strategic partnerships, tailored interventions and innovative financing. Joining forces with governments, private sector actors and development partners, EnDev is steadfastly committed to achieving macro-, meso- and micro-level impacts which benefit those most in need. As the SDG 7 clock towards 2030 ticks down, scalable solutions, implemented in tandem with like-minded partners, is more important now than ever before.



The power of partnerships

Over the past 18 years, EnDev has learned that embedding interventions within robust partnerships is key to achieving our goals. As such, EnDev actively cultivates partnerships with diverse stakeholders at both the global and country level – including governments, private sector actors, civil society groups, and other development partners – which allow for the pooling of resources, a stronger network of knowledge, sharing of risks and coordination of efforts towards common objectives. For the new programming cycle 2023-2025, this approach enables EnDev to continue to design needs-based interventions that are relevant, sustainable and additional in concert with partners.

Tailored interventions serving local needs

The needs of local communities and governments are at the core of EnDev's work. The programming proposals in Annex A have been developed in close coordination with partner ministries (where applicable) and other local stakeholders (where appropriate), who will continue to play an active role in the inception, implementation and evaluation of country-specific activities in order to foster a sense of ownership and participation. Long-standing and successful partnerships with the likes of the Alternative Energy Promotion Centre (AEPC) in Nepal, the *Fundação para o*

Desenvolvimento da Comunidade (FDC) in Mozambique, the Development Bank of Ethiopia (EDB), the *Centre d'Études et de Recherches sur les Énergies Renouvelables* (CERER) in Senegal and many others across the portfolio will continue into the next phase, alongside several new and emerging partnerships still in development.

EnDev also views its partnerships with local communities as a critical component of its work in achieving scalable impacts in the field of energy access. Grassroots partnerships with e.g. Village Savings and Loan Associations (VSLAs) in Burundi, DRC, Kenya and Uganda are a testament to this approach. By collaborating with local stakeholders, EnDev is creating a network of committed partners who share a common vision for achieving sustainable results.

Accessing innovative technologies and financing mechanisms

Close collaboration with the private sector enables EnDev to access innovative technologies, business models and financing mechanisms that can accelerate the scale-up of clean energy solutions. In support of this, EnDev will continue to coordinate its work closely with flagship industry groups at the macro-level such as the Clean Cooking Alliance (CCA) and the Global Off-Grid Lighting Association (GOGLA), as well as local private sector associations at the

meso-level such as the *Association Inter-professionnelle des Spécialistes des Énergies Renouvelables* (AISER) in Benin, the Liberian Energy Access Practitioners (LEAP) group, the Ethiopian Clean Cooking Alliance (ECCA), the Clean Cooking Alliance of Kenya (CCAK), the Renewable Energy Industry Association of Malawi (REIAMA) and many others over the next phase. These partnerships help EnDev make the most of the expertise, resources, and networks of stakeholders involved, leading to more significant impacts and have been instrumental in developing innovative results-based financing models that facilitate more significant investment in clean energy solutions. These results are further solidified via close linkages to other private sector-facing programmes such as GET.invest, with whom joint activities are under development in Malawi, Mozambique and Uganda.

On the micro-level of individual companies, EnDev will build upon its successful Innovation Fund activities of the past to encourage new approaches and business models, test their viability on the market and ultimately bring them to scale. Lessons from these and other innovations are disseminated through regular meetings of practitioners' groups under the EnDev Learning and Innovation Agenda (ELIA). The first cycle of ELIA – covering productive use, clean cooking and behavioural change, rural electrification and humanitarian energy – was launched in 2020 and continues regular meetings; the second cycle is planned for 2023 onwards on the topics of digitalisation for scale and innovative finance.

Partnerships for additionality and scale

As the 2030 target to achieve universal energy access draws closer and the urgency of governmental and donor-supported programmes increases, the need for constant coordination among development partners has never been higher. In support of this,

EnDev continues to actively participate in various networks and working groups at both global and country levels. In the next phase, EnDev will continue to serve as a member of the Clean Cooking & Climate Consortium (4C), the Household Solar Funders Group (HSFG), the Minigrad Funders Group (MFG), the Efficiency for Access Coalition, the Global Platform for Action (GPA), the End-User Subsidy Lab (EUSL) and more, complemented by other local working groups, generally chaired by partner governments.

In the next phase, EnDev will intensify cooperation with key conveners across the energy access sector, including SEforALL, the Global Energy Alliance for People and Planet (GEAPP), the International Renewable Energy Agency (IRENA), the Modern Energy Cooking Services (MECS) Programme, Team Europe initiatives (such as the Africa-EU Green Energy Initiative) and, especially for humanitarian settings, the World Food Programme (WFP) and the United Nations High Commissioner for Refugees (UNHCR).

Acknowledging that EnDev's direct impacts are limited by the finite implementation periods and resources available, the programme depends on other institutional partners to ultimately scale-up proven approaches. Under the next programming cycle, closer cooperation with development finance institutions will be explored. In particular, EnDev intends to continue to expand its special relationship with the World Bank and its Energy Sector Management Assistance Program, which serves as a key strategic pillar for the design of interventions. Following the first successful scale-up of an EnDev pilot activity – the ProPoor RBF in Rwanda – by the World Bank and the Government of Rwanda, new and exciting cooperation opportunities have emerged across the portfolio. With the launch of the DGIS-funded Demand-

Side Subsidy (DSS) Component in 2022, four new country pilots are currently under implementation in Liberia, Malawi, Niger and Uganda. Shortly thereafter, a new type of cooperation was launched with the World Bank in Tanzania, with EnDev playing the role of a technical support unit to the Government of Tanzania's Rural Electrification Expansion Program (TREEP) in the design of new RBF modalities. With new cooperation discussions still emerging in Burundi, Uganda and elsewhere, it is expected that the unique complementary partnership between EnDev and the World Bank will continue to strengthen in the coming years.

Fostering long-term commitment

EnDev recognises the power of partnerships and views them as a crucial component of its work in achieving scalable impacts in the field of energy access. By collaborating with various stakeholders, EnDev is creating a network of committed partners who share a common vision for a sustainable future. The EnDev programme will continue to foster these partnerships, recognising that sustainable energy access requires a collective effort that spans different sectors, disciplines, and regions.



Transitional cooking: Creating opportunities on Idjwi island

The landscape around the village of Kashara in the Eastern part of the Democratic Republic of the Congo (DRC) is mountainous, the roads are rough and muddy. Kashara is located on Idjwi, an island two hours by boat from the provincial capital of Goma. It is a low-income area, heavily affected by the various prolonged crises.

The 4000 inhabitants of Kashara live in houses made out of tinsplate and bricks. As common cooking fuels are charcoal and firewood, the area is harmed by deforestation and pollution. In this context, EnDev (implemented by AVSI) aims at increasing the availability and accessibility of transitional cooking solutions on the whole island, including the village of Kashara. In Kashara lives Kimpaye, a 29-year-old mother of seven children who used to struggle to meet all the needs of her family.

Kimpaye says: “Before the intervention we used to consume a bag of charcoal each month. Now, thanks to the ICS, we use the same amount in three months”. This way, she is able to save 20 US dollars each month. Further, Kimpaye found a job as a ceramist in the Tuungane workshop, an ICS producer supported by EnDev.

Thanks to the money earned through the ICS production, and the money saved from fuel purchase for her own consumption, Kimpaye and her family could afford a big change: the renovation of the family’s home.

Lastly, due to the savings, Kimpaye will be able to put something aside every month to realize one of her dreams: to start a business of basket weaving.

4. Reports and accounts

With this programming, EnDev proposes to allocate a total of EUR 544.918 million for continued global management as well as operations in 21 countries until December 2024. This requires additional funds of EUR 26.503 million on top of currently secured available funds of EUR 518.415 million. Advanced negotiations with one donor suggest that EnDev will be able to secure the additionally needed funds shortly.

4.1 Planned budget allocation

Administratively, EnDev is governed by a commissioned programme phase of BMZ to GIZ, which is currently designed to end in December 2025. EnDev's total indicative budget until 2025 sums up to EUR 580.412 million of which EUR 526.524 million have been secured and commissioned by BMZ. As the commission value for the FCDO (RBF) contribution has to be reduced by EUR 8.161 million due to unused funds and minor currency gains amounting to EUR 0.052 million are taken into consideration, EUR 518.415 million are currently available for allocation. Therefore, the indicative budget until 2025 has currently a funding gap of EUR 61.997 million. However, EnDev aims to secure expected additional non-earmarked funds of EUR 62.000 million in the near future, of which only EUR 42.400 million are foreseen for the

period until December 2025 and therefore indicated in this budget allocation. Once these funds are secured, EnDev's total available funds will amount to EUR 560.815 million. Additional EUR 19.597 million will then still be required to continue implementation at global and country level as indicatively planned and in order to ensure a smooth implementation and full target achievement as projected.

Of EnDev's total indicative budget until 2025 of EUR 580.412 million, global level budget allocation sums up to EUR 58.897 million and country level budget allocation amounts to EUR 521.515 million. It should be noted that global level budget allocation also includes globally managed country activities as they are not formally part of the respective EnDev country projects.

Table 4-1
Programming budget until 12/2024 in million EUR

	Total
Global level budget	
Management, monitoring, backstopping, learning, etc.	38.179
Globally managed country activities (SCCIF, SIINC, SEFFA, DSS management at HQ level, etc.)	13.118
Globally managed extra activities (refugees, RBF preps, etc.)	4.000
Country level budget	
Implementation in medium-/long-term countries	359.118
Country-level managed extra activities (FCDO, EU, USAID, DSS etc.)	130.503
Total allocated budget	544.918

Table 4-2

Indicative overall budget until 12/2025 in million EUR⁴

	12/2022	2023	2024	2025	Total
Global level budget					
Management, monitoring, backstopping, learning, etc.	31.079	3.500	3.600	3.600	41.779
Globally managed country activities (SCCIF, SIINC, SEFFA, DSS management at HQ level, etc.)	6.470	4.337	1.906	0.405	13.118
Globally managed extra activities (refugees, RBF preps, etc.)	3.927	73			4.000
Country level budget					
Implementation in medium-/long-term countries	307.276	26.571	25.272	21.895	381.013
Country-level managed extra activities (FCDO, EU, USAID, etc.)	73.960	24.157	18.864	13.522	130.503
Performance-based top-ups (DGIS)			4.000	6.000	10.000
Planned expenditures					
Global and country level	422.711	58.637	53.642	45.422	580.412
Funding					
Secured available funds (as of 03/2023) ⁵	422.711	58.637	23.140	13.927	518.415
Expected additional funds (to be secured short-term) ⁶					42.400
Funding gap					
Required funds (as of 04/2023)					61.997
Required funds (if expected funds are secured)					19.597

⁴ Minor rounding differences might be possible that result in neglectable inconsistencies in cross sums.

⁵ Due to exchange rate fluctuations of contributions in foreign currencies (CHF, USD), EUR 0.052 million are reserved for exchange rate fluctuations. Furthermore, the commission value for the FCDO (RBF) contribution must be reduced by EUR 8.161 million (unused funds) resulting in available funds of EUR 518.415 million instead of the commissioned funds of EUR 526.524 million.

⁶ DGIS is expected to provide funds of EUR 62 million. Since part of these funds are reserved for the year 2026 (EUR 7.6 million for core-funding and EUR 12.0 million for performance-based top-ups), only the share until 12/2025 (EUR 42.4 million) is shown here.

4.2 Planned activities

This chapter provides information on current country projects, durations, and budgets. Administratively, EnDev is governed by a commissioned programme phase of BMZ to GIZ. This phase is currently designed to end in December 2025. With this report, the project period for all country projects except for Bolivia and Guinea is suggested to be extended until 12/2024. Bolivia and Guinea are phase-out countries which come to an end by 06/2024 (Bolivia) and by 12/2023 (Guinea).

Formerly, Cambodia and Laos were part of a multi-country approach with Cambodia as the regional hub. Now, each country is presented separately with a separate budget and individual indicative targets.

Also, Sierra Leone, Liberia and Guinea were part of a multi-country approach with Sierra Leone as the regional hub. Now,

Sierra Leone is presented separately with a separate budget and individual indicative targets. Liberia including Guinea are presented accordingly.

With this interim project duration, the current funding situation of the programme is taken into account. Project durations will be extended, and budget allocations increased respectively once additional funding has been secured.

Ongoing country projects are shown in Table 4-3, and the proposed changes for individual country projects are listed in the column labelled "new".

Management and thematic activities are presented in Table 4-4.

Table 4-3

Ongoing country and regional projects

Country	Lead political partner	Project duration			Funding (in EUR 1,000)		Planned outcomes on HH level (in 1,000 persons) ⁷	
		start	end old	end new	old	new	old	new
Bangladesh	 Bangladesh Ministry of Power, Energy and Mineral Resources	06/09	12/23	12/24	27,953	28,989	3,967	4,234
Benin	 Ministry of Energy, Water and Mines	10/09	12/23	12/24	22,150	28,924	673	1,565
Bolivia	 Vice-Ministry of Electricity and Alternative Energy (VMEEA) of the Ministry of Energy	10/09	12/23	06/24	20,192	20,192	787	787
Burundi	 Focus on local private sector	01/21	12/23	12/24	0,666	1,015	79	258
Cambodia ⁸	 Ministry of Mines and Energy (MME)	03/15	12/23	12/24	4,936	5,532	176	57
DRC	 Ministère des Affaires Etrangères	12/19	12/23	12/24	1,681	2,161	99	150
Ethiopia	 Ministry of Water and Energy (MoWE)	01/10	12/23	12/24	48,130	52,111	2,765	2,978
Kenya	 Ministry of Energy	04/09	12/23	12/24	35,150	36,389	6,218	7,395
Laos ⁹	 Ministry of Science and Technology (MoST)	03/15	12/23	12/24	2,290	2,885	176	241
Liberia (with Guinea until 12/2023) ¹⁰	 Liberia: Ministry of Mines and Energy	05/12	12/23	12/24	15,572	16,052	150	34

⁷ Indicative target forecasts are not adjusted to the extended project duration. Indicative targets span a time horizon until the end of 2025 and are not broken down to mid-term (12/2024) targets.

⁸ Formerly, Cambodia, Laos and Vietnam were part of a multi-country approach with Cambodia as the regional hub. Now (as of 07/23), each country is presented separately with a separate budget and individual indicative targets.

⁹ Formerly, Cambodia, Laos and Vietnam were part of a multi-country approach with Cambodia as the regional hub. Now (as of 07/23), each country is presented separately with a separate budget and individual indicative targets.

¹⁰ Formerly, Sierra Leone, Liberia and Guinea were part of a multi-country approach with Sierra Leone as the regional hub. Now (as of 07/23), Sierra Leone and Liberia are presented separately with a separate budget and individual indicative targets, whereas Guinea will be ending in 12/2023.

Country	Lead political partner	Project duration			Funding (in EUR 1,000)		Planned outcomes on HH level (in 1,000 persons) ⁷	
		start	end old	end new	old	new	old	new

Country	Lead political partner	Project duration			Funding (in EUR 1,000)		Planned outcomes on HH level (in 1,000 persons)	
		start	end old	end new	old	new	old	new
Madagascar	 Ministère de l'Energie et des Hydrocarbures	12/12	12/23	12/24	1,968	2,278	174	922
Malawi	 Ministry of Energy	12/12	12/23	12/24	16,356	26,386	1,764	2,178
Mali	 Direction Nationale de l'Energie/Ministère des Mines, de l'Energie et de l'Eau du Mali	04/09	12/23	12/24	16,394	18,507	315	204
Mozambique	 Ministry of Mineral Resources and Energy	10/09	12/23	12/24	38,400	39,819	530	1,119
Nepal	 Ministry of Energy, Water Resources and Irrigation	05/09	12/23	12/24	11,299	12,417	533	673
Niger	 Ministère du Plan	07/22	12/23	12/24	4,582	5,057	-	4
Rwanda	 Ministry of Infrastructure (MININFRA)	10/09	12/23	12/24	31,076	32,468	460	342
Senegal	 Ministry of Petroleum and Energy	04/09	12/23	12/24	30,171	31,371	1,453	3,000
Sierra Leone ¹¹	 Ministry of Energy	07/17	12/23	12/24	2,830	3,719	150	35
Tanzania	 Ministry of Energy	12/12	12/23	12/24	13,381	14,337	1,471	2,389

¹¹ Formerly, Sierra Leone, Liberia and Guinea were part of a multi-country approach with Sierra Leone as the regional hub. Now (as of 07/23), Sierra Leone and Liberia are presented separately with a separate budget and individual indicative targets, whereas Guinea will be ending in 12/2023.

Uganda



Ministry of Energy and Mineral Development (MEMD)

04/09

12/23

12/24

23,789

27,255

2,865

2,333

Table 4-4

Management and thematic activities

Topic and/or country		Duration			Funding (in EUR 1,000)	
		start	end old	end new	old	new
Global level	Management, monitoring, backstopping, learning, etc.	01/09	12/23	12/24	35,044	38,179
Global level	Globally managed country activities (SCCIF, SIINC, IKEA ¹² , DSS management at HQ level, etc.)	08/18	12/23	12/24	13,045	13,118

¹² Lead political partners for IKEA-funded activities at country are: Ethiopia: Ministry of Water and Energy (MoWE); Kenya: Ministry of Energy; Uganda: Ministry of Energy and Mineral Development (MEMD). The lead political partners for SCCIF and SIINC in Kenya and Uganda are the same ministries as listed for IKEA-Foundation in Kenya and Uganda.

Abbreviations

4C	Clean Cooking & Climate Consortium
ADES	Association pour le Développement de l'Energie Solaire, Switzerland
AEPC	Alternative Energy Promotion Center
AISER	Association Interprofessionnelle des Spécialistes des Energies Renouvelables
AP	Associated project to EnDev
AVSI	Association of Volunteers in International Services
BDS	Business development services
BMZ	German Federal Ministry of Economic Cooperation and Development
CCA	Clean Cooking Alliance
CCAK	Clean Cooking Alliance of Kenya
CERER	Centre d'Études et de Recherches sur les Énergies Renouvelables
CLASP	Collaborative Labelling and Appliance Standard Program
DFAT / AusAID	Australian Department of Foreign Affairs and Trade
DGIS	Directorate-General for International Cooperation at the Ministry of Foreign Affairs of the Netherlands
DRC	Democratic Republic of the Congo
DSS	Demand-side subsidy
ECCA	Ethiopian Clean Cooking Alliance
EDB	Ethiopian Development Bank
ELIA	EnDev's Learning and Innovation Agenda
EnDev	Energising Development programme
ESMAP	Energy Sector Management Assistance Program
EUSL	End-user subsidy lab
FCDO	UK Foreign, Commonwealth & Development Office
FDC	Fundação para o Desenvolvimento da Co-munidade
GAP	Gender Action Plan
GCF	Green Climate Fund
GEAPP	Global Energy Alliance for People and Planet
GIGA	German Institute of Global and Area Studies
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

GOGLA	Global Off-Grid Lighting Association
HEPA	Health and Energy Platform of Action
HH	households
HSFG	Household Solar Funders Group
HTC	higher-tier cooking
ICS	Improved Cookstoves
IDP	Internally displaced people
IRENA	International Renewable Energy Agency
KOFIH	Korea Foundation for International Healthcare
LDC	least developed countries
LEAP	Liberian Energy Access Practitioners
LNOB	Leave-no-one-behind
MECS	Modern Energy Cooking Services Programme
MFG	Minigrid Funders Group
MSME	small and medium enterprise
NGO	Non-governmental organisation
NIS	Nordic International Support Foundation
PAYGO	Pay-As-You-Go
Pico-PV	pico photo voltaic
PUE	productive use of energy
RBF	results-based financing
REIAMA	Renewable Energy Industry Association of Malawi
RVO	Rijksdienst voor Ondernemend Nederland
SCCIF	Smart Communities Coalition Innovation Fund
SDC / DEZA	Swiss Agency for Development and Cooperation
SDG	sustainable development goals
SE4All	Sustainable Energy for All
SEE-CC	Strengthening the Entrepreneurial Ecosystem for Clean Cooking
SEFFA	Sustainable Energy for Smallholder Farmers

SHS	solar home systems
SI	social institutions
SIINC	Social Impact Incentive
SNV	Stichting Nederlandse Vrijwilligers / Netherlands Development Organisation
TA	Technical assistance
TREEP	Tanzania's Rural Electrification Expansion Program
UNHCR	United Nations High Commissioner for Ref-ugees
USAID	United States Agency for International Development
VSLA	Village Savings and Loan Associations
WFP	World Food Programme

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Annex A



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Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Association pour le Développement de l'Energie Solaire Suisse (ADES)

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Collaborative Labeling and Appliance Standard Program (CLASP)

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Practical Action

Netherlands Development Organisation (SNV)

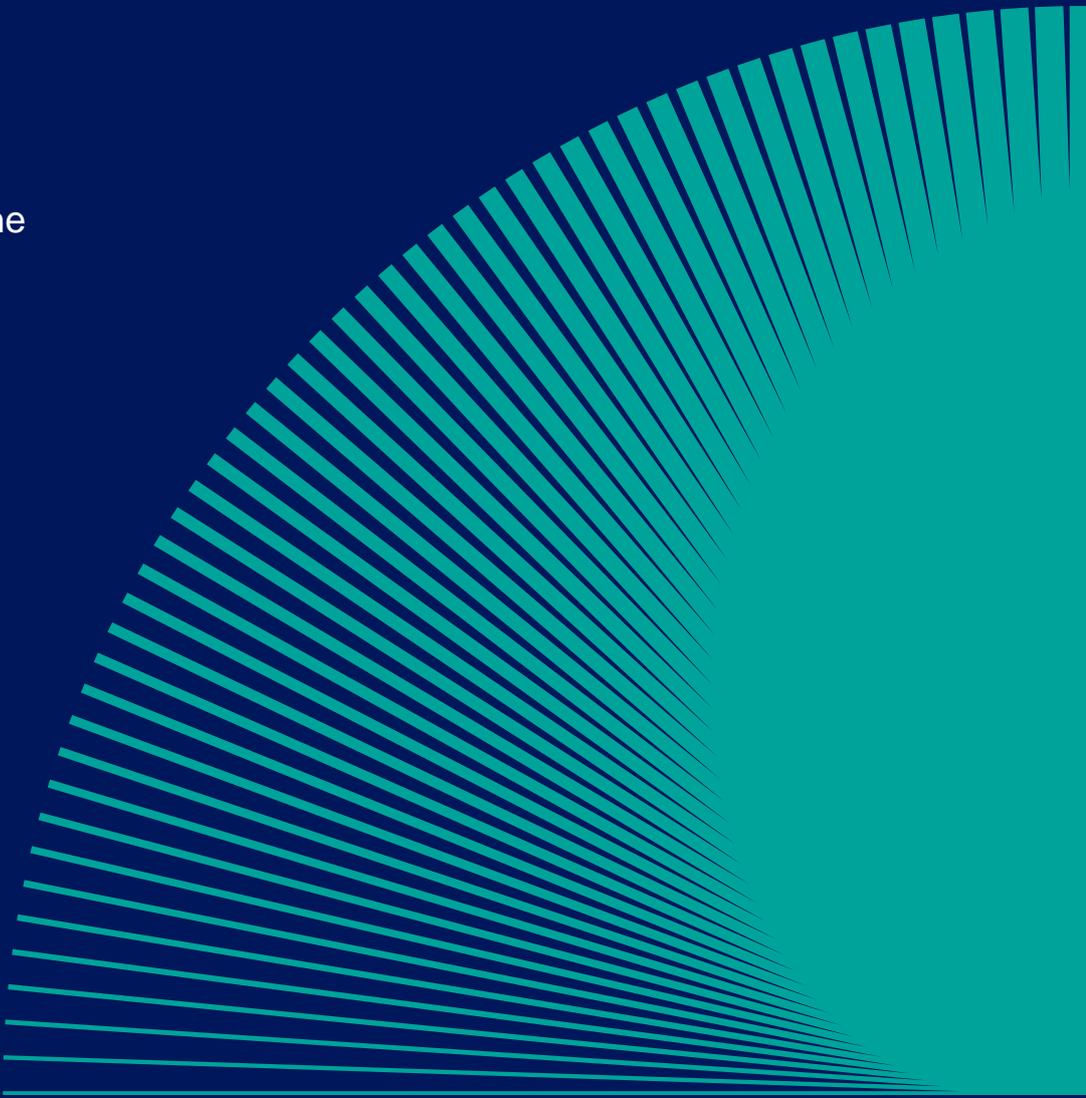
Contents

EnDev country project proposals	44
1. Bangladesh.....	45
Summary and key data.....	46
Country context	47
Cooking sector	48
Electricity sector	57
Safeguards and risks.....	61
Budget.....	62
2. Benin	63
Summary and key data.....	64
Country context	65
Cooking sector	66
Electricity sector	72
Safeguards and risks.....	77
Budget.....	78
3. Bolivia.....	79
Summary and key data.....	80
Country context	81
Electricity sector	81
Safeguards and risks.....	92
Budget.....	93
4. Burundi.....	94
Summary and key data.....	95
Country context	96
Cooking sector	97
Safeguards and risks.....	108
Budget.....	108
5. Cambodia	109
Summary and key data.....	110
Country context	111
Cooking sector	112
Safeguards and risks.....	119
Budget.....	119
6. Democratic Republic of the Congo	120
Summary and key data.....	121
Country context	122
Cooking sector	124
Electricity sector	135
Safeguards and risks.....	140
Budget.....	141
7. Ethiopia.....	142
Summary and key data.....	144
Country context	145
Cooking sector	146
Electricity sector	158
Safeguards and risks.....	172
Budget.....	173
8. Kenya.....	174
Summary and key data.....	175
Country context	176
Cooking sector	177
Electricity sector	190

	Safeguards and risks	199
	Budget.....	200
9. Laos PDR.....		201
	Summary and key data.....	202
	Country context	203
	Cooking sector	204
	Safeguards and risks.....	211
	Budget.....	212
10. Liberia		213
	Summary and key data.....	214
	Country context	215
	Cooking sector	216
	Electricity sector	220
	Safeguards and risks.....	225
	Budget.....	225
11. Madagascar		226
	Summary and key data.....	227
	Country context	228
	Cooking sector	229
	Safeguards and risks.....	238
	Budget.....	239
12. Malawi.....		240
	Summary and key data.....	242
	Country context	242
	Cooking sector	243
	Electricity sector	249
	Safeguards and risks.....	254
	Budget.....	255
13. Mali		256
	Summary and key data.....	257
	Country context	258
	Cooking sector	259
	Electricity sector	265
	Safeguards and risks.....	278
	Budget.....	279
14. Mozambique.....		280
	Summary and key data.....	282
	Country context	283
	Cooking sector	284
	Electricity sector	289
	Safeguards and risks.....	293
	Budget.....	293
15. Nepal.....		295
	Summary and key data.....	296
	Country context	297
	Cooking sector	298
	Electricity sector	304
	Safeguards and risks.....	314
	Budget.....	315
16. Niger		316
	Summary and key data.....	317
	Country context	318
	Cooking Sector.....	319
	Electricity sector	323
	Safeguards and risks.....	333

Budget.....	334
17. Rwanda.....	335
Summary and key data.....	337
Country context	338
Cooking sector	339
Electricity sector	346
Safeguards and risks.....	360
Budget.....	361
18. Senegal.....	362
Summary and key data.....	364
Country context	365
Cooking sector	367
Electricity sector	378
Safeguards and risks.....	392
Budget.....	393
19. Sierra Leone.....	394
Summary and key data.....	395
Country context	396
Cooking sector	397
Electricity sector	402
Safeguards and risks.....	407
Budget.....	409
20. Tanzania	410
Summary and key data.....	411
Country context	412
Cooking sector	413
Safeguards and risks.....	419
Budget.....	419
21. Uganda	420
Summary and key data.....	422
Country context	423
Cooking sector	425
Electricity sector	435
Safeguards and risks.....	443
Budget.....	445

EnDev country project proposals

- Bangladesh
 - Benin
 - Bolivia
 - Burundi
 - Cambodia
 - Democratic Republic of the Congo (DRC)
 - Ethiopia
 - Kenya
 - Laos PDR
 - Liberia
 - Madagascar
 - Malawi
 - Mali
 - Mozambique
 - Nepal
 - Niger
 - Rwanda
 - Senegal
 - Sierra Leone
 - Tanzania
 - Uganda
- 

1. Bangladesh

Acronyms

BAU	Business-as-usual
BBF	Bangladesh Bondhu Foundation
BD	Bangladesh
BDS	Business development service
BMZ	Federal Ministry for Economic Cooperation and Development
BSTI	Bangladesh Standards and Testing Institution
CCA	Clean Cooking Alliance
CLASP	Collaborative Labelling and Appliance Standards Program
DKTI	German Climate Technology Initiative
EAMD	Energy access market development
EEGIRE	Energy Efficiency and Grid-integration of Renewable Energy
EV	Electronic vehicle
FI	Financial institution
GHG	Greenhouse gas
GIZ	German Agency for International Cooperation GmbH
GoB	Government of Bangladesh
HTC	Higher Tier Cooking
HTCC	Higher Tier Cooking Component
HQ	Headquarter
ICS	Improved Cookstoves
IDCOL	Infrastructure Development Company Limited
IVAs	Independent verification agents
LPG	Liquefied Petroleum Gas
MECS	Modern Energy Cooking System
MEPS	Minimum energy performance standards
NDC	National Determined Contributions
PA	Practical Action
RBF	Results-based financing
RE	Renewable energy
RVO	Rijksdienst voor Ondernemend Nederland
SME	Small- and mediums-sized enterprise
SNV	Netherlands Development Organisation
SREDA	Sustainable and Renewable Energy Development Authority
LNOB+	Leave no one behind
S&L scheme	Standard & Labelling scheme

Summary and key data

Promoted technologies		Improved cookstoves (ICS), eCooking and solar charging stations for e-rickshaws	
Type of Energy		Solar, biomass	
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>ECooking component Market transformation for energy efficient eCooking appliances With the objective to turn the emerging eCooking market into a more sustainable one, EnDev is</p> <ul style="list-style-type: none"> • supporting the Bangladesh Standards and Testing Institution (BSTI) and the Sustainable and Renewable Energy Development Authority (SREDA) in finalising its standards and labelling scheme; • continuation of the RBF scheme to further strengthen the rural and peri urban markets for high-quality, energy efficient on-grid eCooking appliances; and • implementing an awareness and consumer education campaign about eCooking in a focus region. <p>ICS component Addressing tribal communities as a new customer group + creating jobs for economically disadvantaged women With the objective of including LNOB+ groups in the ICS market, EnDev is</p> <ul style="list-style-type: none"> • assisting tribal communities (LNOB+) in getting access to biomass-based ICS • supporting female experts for ICS maintenance with a focus on economically disadvantaged women. <p>Battery charging component Analysis and potential replication of a rural solar charging business case With the objective of advancing the emerging market for e-rickshaws towards more sustainable charging practices, EnDev is</p> <ul style="list-style-type: none"> • analysing the competitive advantages of stand-alone and grid connected (net metering) solar battery charging; • implementing 2 additional demonstration projects; • providing business development service (BDS) to entrepreneurs who invest into solar battery charging stations; • assisting e-rickshaw drivers (30 % LNOB+) to increase incomes and reduce drudgery; and • developing a transparent investment process for solar battery charging stations as blueprint for a wider scale-up 		
Programming period	01.07.2023 – 31.12.2025	Indicative core Budget	EUR 2,000,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	65 %	21 %	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	104,000 people	90,000 people	14,000 people	<ul style="list-style-type: none"> Improved framework conditions: Draft energy efficiency standards for eCooking appliances introduced (Output indicator 3.1); 100 jobs created for women in ICS supply chain
Electricity for productive use / income generation	1 SME (charging station operators) 40 Microenterprises (rickshaw driver)			<ul style="list-style-type: none"> Another 2 SME have developed and implemented business plans for solar battery charging (output indicator 2.2) Another 40 jobs created (rickshaw drivers) 1 investment process for solar battery charging stations has been developed with key stakeholders (output indicator 3.1).

Country context

- Please briefly outline
- the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
 - EnDev's overarching objectives in the markets being supported
 - EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

Bangladesh has seen robust economic growth (6.9 % in 2021) and aspires to become a middle-income country by 2031. Bangladesh officially reached 100 % electricity access by March 2022. Access to clean cooking has improved, reaching 57 % in urban, but only 8 % in rural areas (2019). This translates into 30 million households still cooking with traditional stoves. The Government of Bangladesh (GoB) has set itself ambitious targets for clean cooking in its draft **National Action Plan for Clean Cooking**: 45 % of households cooking are to use biomass ICS, 60 % LPG, and 8 % electrical cooking until 2030¹. The latter would comprise roughly 3.5 million households.

The commitment of the GoB to eCooking poses a window of opportunity for EnDev: The GoB is planning a standard and labelling (S&L) scheme which also covers eCooking appliances. **EnDev can contribute to making this new market more sustainable by an eCooking market transformation package** composed of policy advisory, results-based financing (RBF) and a consumer awareness campaign. The intervention package has potential to lead to transformative change over the next ten years, but will only deliver relatively small new access figures until end of 2025. Beyond Bangladesh, the intervention would deliver new lessons on how to

¹ Totals do not add up to 100% due to stove stacking.

	<p>develop markets for energy efficient and high quality on-grid eCooking appliances.</p> <p>EnDev is building on the work of GIZ BD energy projects² and facilitates investments in solar battery charging stations for e-rickshaws in peri-urban and rural areas. This would improve the cost and energy efficiency of existing 2 million e-rickshaws³ as the current poor charging practice is significantly reducing battery lifetime. EnDev could account supported battery charging stations as SMEs and rickshaw drivers that benefit from less drudgery, increased safety, and improved battery lifetime as micro entrepreneurs. This proposal suggests an upscaling of the ongoing pilot project to demonstrate bankability once its business model has been proven. In case of success, the business case could be up-scaled for Bangladesh and transferred to other countries with e-mobility potential. These EnDev interventions contribute to Bangladesh's NDC which encourages e-vehicles and the use of energy efficient appliances in households.</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) 	<p>The national market for eCooking appliances is still nascent (see EAMD). Political targets, global cost reductions, full grid coverage and price competitiveness compared to LPG speed up market growth. Unfortunately, low-price, low-quality products with high energy consumption distort the market by deteriorating customers' perception of eCooking, leading to higher energy bills and more GHG emissions from the power sector.</p> <p>EnDev and its partners want to kick-start a market transformation towards a more sustainable growth. They are spearheading a tripartite approach of advising on a national standard & labelling scheme; an RBF targeting the supply side and an awareness campaign targeting the demand side.</p> <p>With its strong mandate on LNOB+, EnDev wishes to make this market more inclusive. In Bangladesh, roughly 30 million households cook with traditional stoves. Out of these 98 % belong to the Bengali population, but around 3.3 million people belong to 45 ethnic minority groups, which often still live in precarious conditions. 80 % of households in tribal communities in the plains and 65 % of households in the Chittagong Hills Tracts live in poverty, compared to 20 % of households at the national level (World Bank 2017). While there is no exact data available, partners have shared that most tribal households still use three-stone fires for cooking due to the former free availability of firewood and their very low purchasing power. In 2022, the Bangladesh Forest Industries Development Corporation Bill was approved by cabinet, which takes a rigorous stance on forestry protection, prohibiting cutting of trees without prior permission by local</p>

² Renewable Energy and Energy Efficiency Programme (REEEP II) and Energy Efficiency and Grid Integration of Renewable Energy Project (EEGIRE)

³ Integration report 2022

<ul style="list-style-type: none"> • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate Excel file based on the respective template.</p>	<p>authorities. Thus, facing increasing efforts in time and costs to collect firewood, tribal communities are becoming a new ICS customer group, although not an easy one as additional transportation costs and awareness raising campaigns need to be factored in to reaching out to these remote groups.</p> <p>Another LNOB+ group targeted by EnDev are economically disadvantaged women who are looking for income generation opportunities in the ICS supply chain. Given the positive results of a recent gender analysis, EnDev sees high relevance in continuing its support to provide training to women on Clean Cooking so that they can generate livelihood opportunity for themselves.</p>
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Cooking sector: Component 2.1 – eCooking

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>The eCooking component consists of three interventions: Intervention (1) on ‘standard & labelling’ aims at the national level. Due to the limited available budget, the interventions (2) ‘RBF for rural and peri-urban customers’ and (3) ‘eCooking behavioural change campaign’ are initially targeted at Khulna division only. After completion of the pilot in mid-2023, the RBF support will be extended to at least one more division.</p> <p>Figure 1: EnDev’s support package for energy-efficient eCooking appliances</p> <p>(1) For the enabling environment, EnDev supports BSTI and SREDA in developing energy performance standards, testing procedures and a labelling scheme for selected eCooking appliances. Standards might be broadened for covering durability, service, and truth in advertising. Standards and labelling will be introduced first to mature technologies like rice cookers and induction stoves, and later for less mature technologies like electrical pressure cookers. Activities will include:</p> <ol style="list-style-type: none"> Recommending draft standards for these three appliances to the technical committees of BSTI and SREDA. This is based on a comparative study on international, esp. Indian, standards, testing and labelling approaches and their suitability for Bangladesh. Advising BSTI/SREDA in stakeholder dialogue and governmental approval processes on <i>best practices in Standard & Labelling programme design</i> such as suitable transition period, timeline from voluntary to mandatory
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scheme, comparative vs. endorsement labelling, scope of programme, timing, and mode of introduction of minimum energy performance standards (MEPS), compliance & enforcement, monitoring and review measures, e-waste disposal/recycling.

- c. Supporting SREDA in *coordinating the eCooking sub-sector* via the successor of the Household Energy Platform (partially financed by EnDev).

(2) At the supply side, EnDev is using an *RBF mechanism* to incentivise manufacturers and distributors of eCooking appliances to enter rural areas. RBF incentives will only be available for appliances that meet the energy efficiency and quality standards that are co-developed with BSTI. Thus, the new standards will first be employed in EnDev's RBF scheme and tested, before being introduced at the national level. This experience will help to further refine standards before becoming mandatory nationally. Activities will include (implemented partly in current, partly in upcoming phase):

- a. A full-scale market assessment building on the appliance mapping study done by PA/MECS and RBF design;
- b. (Optional) contracting of local FI as RBF Fund Manager and local consultants as independent verification agents (IVAs);
- c. Set-up of steering group with SREDA and BSTI involvement;
- d. Implementation of RBF scheme (by EnDev) on sales of approx. 25,000 energy efficient eCooking appliances (AC rice cookers, induction stoves, electric pressure cookers, other available standard appliances). The incentives for marketing and outreach activities targeting rural and peri-urban customers will reduce companies' risk of entering these markets, enable learning about the rural customer segment, and should lead to decreased unit costs due to economies of scale. Affordability to lower income households can be increased by consumer financing propositions such as payment-in-installments. This is not mandatory, but up to each suppliers' expansion strategy. While suppliers may give short-time price reductions as part of their promotional campaign, they are supposed to sell their products at sustainable prices. The RBF will also require suppliers (and manufacturers) to provide adequate after-sales services and warranties. The compliance with these requirements will be checked with the help of independent verification agents using phone interviews and field visits. In general, the proposed RBF scheme will follow the good practices as established by EnDev's RBF Facility.
- e. Evaluation after one-year of implementation with a special focus on 'positive deviant' group, which would be low-income households that managed nevertheless to afford and maintain eCooking appliances, adjusted their cooking habits and serve as role models for their communities.
- f. Upscale the RBF scheme at least one more division after consulting with stakeholders and optimising the approach.

	<p>In addition to the RBF scheme and its focus on downstream dissemination, EnDev also encourages local manufacturers to look for private sector capital to cover pre-financing needs. Manufacturers could for example apply for the Clean Cooking Alliance's (CCA's) venture catalyst support⁴.</p> <p>At the demand-side, EnDev is accompanying the RBF scheme in Khulna division with an awareness and behavioural change campaign on the benefits of eCooking. Activities include in the current phase:</p> <ol style="list-style-type: none"> a. Analysing barriers to the uptake of eCooking in Bangladesh to inform the development of appropriate communication messages and means. The analysis builds on available research findings (e.g., from MECS) and on a small own action research component on aspects such as consumers' product preferences, willingness to pay, and product availability. b. Planning and implementing the awareness and behavioural change campaign on eCooking appliances. This campaign complements SREDA's planned national campaign on the new standard & labelling scheme.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev aligns closely with partners such as:</p> <ul style="list-style-type: none"> • MECS' research on cooking habits informs the EnDev eCooking awareness campaign. • SNV and CLASP, who operate the Bangladesh Energy Access to Modernisation Fund (financed by EnDev's innovation challenge fund) in Jhenaidah and Gazipur, which will provide valuable lessons-learned on demand-side subsidies. • SNV and PA, who implement the Higher Tier Cooking Component (HTCC) project (financed by RVO) which will incentivise 35,000 eCooking appliances in Faridpur, Gazipur, Jashore and Jhenaidah. <p>All organisations are in close contact to ensure coordination, avoid double reporting, and strive for a division of work by geographies. With potentially 3.5 million people in a position to shift to eCooking, there is sufficient scope for EnDev partners to try out different approaches and learn from each other.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with 	<p>EnDev's eCooking component aims at developing a sustainable market in which suppliers sell high quality products to rural and peri-urban customers at affordable prices. This done by building capacities at BSTI and SREDA to develop Bangladeshi standards, testing procedures and labelling schemes. EnDev's RBF scheme is a temporary tool to strengthen the supply side on quality aspects and rural outreach; the awareness campaign is a temporary tool to strengthen demand. Once the S&L scheme has been recognised and accepted by suppliers and customers, BSTI and SREDA have gained experience to enforce standards for electrical appliances, and Bangladesh has progressed on a national scheme for e-waste disposal and recycling, the market no longer requires developing partners' support.</p>

⁴ See <https://www.cleancookingalliance.org/cooking-industry-catalyst/venture-catalyst/index.html>.

<p>supportive institutions?</p> <ul style="list-style-type: none"> • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																						
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>90,000</td> <td>90,000</td> <td>0</td> <td>2,409,295</td> </tr> <tr> <td>People: Access to electricity</td> <td>0</td> <td>0</td> <td>0</td> <td>1,824,696</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 3.1: improved framework conditions</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td><i>Draft Bangladeshi standards for energy efficient and quality and safety aspects of eCooking appliances (rice cookers, induction stoves, EPCs) are presented at BSTI.</i></td> </tr> </tbody> </table> <p>Narrative</p> <p>The RBF programme supports the sales of 25,000 eCooking appliances. Due to a conservative estimation of stove stacking practice, only 80 % of a household is considered as reached by an eCooking appliance, resulting in 90,000 people.</p> <p>Considering the relatively low electricity price in Bangladesh, the shift to eCooking also has <i>economic benefits</i> for households otherwise purchasing LPG, fuelwood, or charcoal. The increased up-take of energy efficient appliances will – compared to the BAU – <i>decrease energy consumption</i> and thereby <i>reduce GHG emissions</i>.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	90,000	90,000	0	2,409,295	People: Access to electricity	0	0	0	1,824,696	Outputs	Applicable	Details	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	<i>Draft Bangladeshi standards for energy efficient and quality and safety aspects of eCooking appliances (rice cookers, induction stoves, EPCs) are presented at BSTI.</i>
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<p>2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 65% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: <i>65% of total budget</i></p> <p><input type="checkbox"/> LNOB+:</p>

<h3 style="text-align: center; color: #008080;">Cooking sector: Component 2.2 – Biomass-based ICS</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development 	<p>Tribal or indigenous communities are located throughout different regions of the country. The Santal are located in the North-western divisions of Rangpur and Rajshahi, and constitute one of the larger tribal communities with a population of around 120,000. Garo and Hajong communities mainly inhabit the northern border districts in Mymensingh division. The inhabited areas of all these tribal communities are accessible and constitute a vulnerable group due to both income level and ethnic origin. There is potential for convincing tribal communities on the benefits of ICS as firewood collection became restricted and they face increasing energy costs.</p> <p>EnDev plans to promote 5,000 ICS to the Santal, Garo, Hajong and other similar communities. A suitable implementing partner who is already active in tribal areas and working with tribal communities will be identified. The biomass-based ICS would include stoves which falls</p>

<ul style="list-style-type: none"> • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>under tier 2 or tier 3 as an affordable and well-adapted stove type for these tribal communities in the plains.</p> <p>Activities include:</p> <ul style="list-style-type: none"> • Setting up a local sales and after-sales structure by partnering with e.g., sanitary shops and newly trained stove maintenance workers • Raising awareness on ICS benefits and undertaking a marketing campaign • Subsidising the retail price of the stoves to an extent meeting the purchasing power of the tribal communities • Evaluating the approach after one year of operation for its improvement and potential scale-up to other tribal communities. <p>Given the positive results of a recent gender analysis, EnDev sees high relevance in continuing its support to provide training to women on Clean Cooking so that they can generate livelihood opportunity for themselves. The Project intends to support around 400 women. The training encompasses technical knowledge on ICS and some basic training on customer relationship management and work organisation. The maintenance work also contributes to GHG emissions savings as it prolongs the lifetime of an ICS. A recent evaluation of this approach confirms its economic and social benefits for women of rural low-income households. Although report evaluates the approach as it was implemented under the Bondhu Chula Programme by BBF, there are no reasons why the approach could not also be replicated by other ICS promotion organisations. Learning from this evaluation, we assume that the type of women applying to become ICS maintenance workers come from situations of mild to extreme family poverty. Although the exact number of women belonging to households that can be classified as LNOB+ is not known, we plan for a representative survey for being able to disaggregate beneficiaries according to their prior income situation. While the exact compensation scheme for female ICS maintenance workers still needs to be worked out with the implementation partner, EnDev suggests a basic salary plan plus an incentive package for good performance in selling stoves. This sales-based incentive allows them to increase their income. Assuming that 100 of the women will sell 20 stoves each, it leads up to 2,000 additional households gaining access to clean cooking.</p> <p>Leveraging carbon financing by building carbon market readiness</p> <p>Carbon financing is becoming an important source of financing that can help to further lower retail prices for end-customers or can be used for other related purposes to increase uptake in ICS sales. EnDev plans to continue supporting its private sector partners in securing carbon financing. The concrete advisory support will be designed based on the upcoming position paper on the voluntary carbon market commissioned by EnDev HQ.</p> <p>This advisory component will indirectly contribute to Energising Climate by helping stakeholders to build up their carbon market knowledge and skills, e.g., scientifically measuring GHG emissions reductions of ICS project interventions.</p>
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<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Since 2005, EnDev has supported the biomass-based clean cooking sector in Bangladesh by policy advisory, market building and by setting up the Bangladesh Bondhu Foundation (BBF) as one major player disseminating ICS. This partnership comes now to a close as BBF is financially self-reliant.</p> <p>EnDev is now looking for new partners that can deliver on ICS promotion for tribal communities and on women empowerment as clean cooking maintenance workers. Prospective implementing partners should have a long-lasting presence in the selected tribal areas and have a general understanding of clean cooking solutions for the tribal communities</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Empowering women in the ICS supply chain is generally a sustainable manner of enriching the workforce and strengthening the sector. Social sustainability seems given as working as ICS technicians is a socially valued job for women as they are considered to be in a better position to enter kitchen and talk to women about clean cooking issues than men. However, working as clean cooking maintenance worker only provides an additional but not a family-sustaining income. The past experience of BBF shows that the main reason for small incomes under the sales and maintenance approach is the shyness of doctors to ask for money for their services. But there is a trend of increasing willingness to pay as households learn to acknowledge the value of maintenance services for the lifetime of their ICS. The additional sales incentive introduced by EnDev will improve the women’s financial situation.</p>

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

- 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
- 2) the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the

Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	14,000	0	14,000	2,409,295
People: Access to electricity	0	0	0	1,824,696

Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
Indicator 1: Jobs created for women.	100	0	80	100

EnDev's support to a female-led clean cooking maintenance programme creates **100 jobs for women**. As 80% of these are estimated to come from households below the national poverty line, 80 can be accounted as LNOB+ beneficiaries (survey will reveal exact figures). 100 economically disadvantaged women will be given a performance-based incentive which will enable them to further increase their income.

Thanks to this incentive for women selling up to 20 stoves, EnDev is supporting 8,000 people (2,000 households) gaining access to clean cooking.

Approx. **17** % of total budget

Approx. contribution to thematic budget for:

- HTC: %
- LNOB+: **17** % of total budget

<p>scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	
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Electricity sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Bangladesh officially reached 100% electricity access by March 2022. Electricity generation is mostly fossil fuel based, of which until 2021 two third has been natural gas. Recent power generation deficits due to gas shortage of both national gas fields and international markets caused the return of black outs and loadshedding despite massive investments in power generation and the transmission and distribution network. The situation is expected to improve in 2023 with higher shares of coal generation while RE are expected to expand in the medium term.</p> <p>Existing growth trends for e-mobility and eCooking will place a growing burden on the distribution network. Distributed solar generation close to rural load centres can help to mitigate some of this demand growth. SREDA’s draft National Solar PV Roadmap, 2021 – 2041 recommends the swift scale-up of grid-connected roof-top solar and to prioritize solar charging stations. Since the introduction of the net-metering regulation in 2018, about 1,730 net-metering systems have been connected by October 2022. Highly subsidised grid electricity (rural lifeline tariffs starting at 3.7 EUR cents per kWh) pose a key barrier to a wider adoption of distributed PV generation in rural areas. But confronted with increasing costs, the government is expected to increase prices soon.</p> <p>E-rickshaws represent a not yet regulated, but highly dynamic market that is gradually expanding from urban to peri-urban into rural areas. E-rickshaws are mostly locally manufactured 3-wheelers using domestic lead-acid batteries and can transport 4-6 passengers. With more than 2 million e-rikshaws in operation and a strong growth trend, they pose a growing burden on the distribution network. Poor charging practice greatly reduces battery lifetime from possible 3 years down to 6 months, causing increased battery waste and related environmental impact.</p> <p>Solar charging stations can reduce grid load and the fossil footprint of e-rickshaws, increase reliability of battery charging, reduce battery waste and off-set the risk of future electricity price increases. However, the technical and commercial viability and marketing advantages of the solar charging business case are so far not sufficiently</p>

demonstrated and understood by station’s operators, EV drivers, utilities, local government and FIs.

Electricity sector: Component 3.1 – Solar charging stations for e-rickshaws

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).

The EnDev intervention aims to demonstrate both the technical and commercial viability as well as the bankability of the business cases for solar battery charging of e-rickshaws either as stand-alone approach or grid connected net metering system. The intervention focuses on peri-urban and/or rural areas with relevant e-rickshaw business and a reasonably stable power supply (advanced state of implementation of ongoing overhaul and improvement of the distribution network). The intervention consists of two phases of which the first started in the current EnDev implementation period and the second is proposed for the new planning.

For the first phase, an ongoing consulting study is analysing the competitive advantages of stand-alone solar battery charging stations and grid connected (net metering) solar battery charging stations compared to the established grid-based battery charging case. The study considers past and ongoing pilot projects by SREDA, the Infrastructure Development Company Limited (IDCOL), and utilities for the discussion of

- a. technical feasibility of solar grid net metering charging compared with direct solar charging (no intermediate storage), as well as the use of different battery types (lead-acid and Li-Ion);
- b. institutional arrangements and business model comparing the option of direct battery charging with battery swapping; and
- c. financial viability considering cost of investment and operation, as well as the charging fee structure.

Based on the results and recommendations, two battery charging demonstration projects shall be developed and implemented as public private partnership with e-rickshaw operators. Extended monitoring of the operation will document system reliability, maintenance, and replacement costs, as well as economic rentability of the investment. The first phase is expected to be completed within 2023 and will result in identification, demonstration, and documentation of commercially viable business cases. Targeted communication materials and events will be used to inform relevant stakeholders, such as e-rickshaw operators, electric utilities, local government, as well as financial institutions.

The second phase will replicate the demonstrated business cases with 2 competitively selected entrepreneurs with the aim to demonstrate bankability of the business model. To this aim, EnDev will focus on two lines of activities:

Activity 1: Provision of business development service (BDS) to entrepreneurs who invest into solar battery charging stations:

- Selection of entrepreneurs willing to commercially finance a significant share of the investment;

	<ul style="list-style-type: none"> • support of the development of robust and concise business plans for the loan applications including investment costs, tariff model, and cash flow projections; • facilitate communications with local government and utilities and the compliance with any legal or regulatory requirements. <p>Activity 2: Develop a transparent investment process for solar battery charging stations in Bangladesh as blueprint for a wider scale-up:</p> <ul style="list-style-type: none"> • establish roundtable discussions with SREDA, e-rickshaw operators, electric utilities, local government, as well as financial institutions on legal, regulatory, and financial requirements for investments in solar battery charging stations; • use experience with the 4 replication projects to provide specific proposals and recommendations on how to address practical barriers in ongoing investment projects; • develop targeted communication materials and conduct events to disseminate the streamlined investment process to scale-up solar battery charging in Bangladesh. <p>The intervention follows a bottom-up approach to build e-mobility charging infrastructure with established private sector actors (rickshaw operators) to influence conducive policy making based on practical experience on the ground. GIZ is very well established in Bangladesh to provide the linkage to the policy level and GIZ EnDev Bangladesh will closely coordinate with other GIZ projects in the energy and transport sector as described below.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev is closely cooperating with SREDA and is collaborating in this regard with GIZ REEEP II (solar roof net-metering programme) and GIZ EEGIRE (technical standards for battery charging and battery recycling). GIZ is planning a DKTl programme on e-mobility that will start in early 2023. The two interventions will closely cooperate in the promotion of demonstrated business cases and complement each other.</p> <p>EnDev is implementing its activities in cooperation with selected E-Rickshaw operators as owner and operator of charging stations. E-rickshaw drivers and manufacturers, as well as electric utilities and local government will be involved in roundtable discussions. IDCOL's preferential financing of net-metering as well as Government supported concessional green financing by commercial banks will be targeted to replicate and scale the demonstrated business cases.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling 	<p>Solar battery charging for e-rickshaws has a significant scaling potential as the current market of about 2 million e-rickshaws is quickly expanding also in rural areas. Existing barriers are the lacking awareness of and access to information of key stakeholders (rural (M)SMEs, local financial institutions, local government, and the utility) on technical system optimisation and financial rentability of the required investment. Once the technical feasibility and financial viability has been demonstrated and awareness of key stakeholders is improved, stakeholders can fully benefit from national programme activities and resulting opportunities such as the GIZ Sustainable Mobility programme (DKTI). Close collaboration with SREDA will facilitate the replication of activities to other rural target regions once additional funding becomes available.</p>

<p>environment with supportive institutions?</p> <ul style="list-style-type: none"> • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																						
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to electricity</td> <td>1 SMEs (charging station operators) 40 Microenterprises (rickshaw drivers)</td> <td>30 % of 40 Microenterprises are LNOB+</td> <td>1,105 SMEs And 80 Microenterprises (rickshaw drivers)</td> </tr> <tr> <td>PU: Access to cooking</td> <td>0</td> <td>0</td> <td>21,713</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>Another 2 SMEs (total 4) have developed and implemented business plans for solar battery charging.</td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>Indicative output: An investment process for solar battery charging stations has been developed with key stakeholders.</td> </tr> </tbody> </table> <p>Narrative Energising Opportunities: the mobility sector is a relevant economic activity and source of income both in urban and rural areas of Bangladesh. Reducing the drudgery and improving safety of local</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	PU: Access to electricity	1 SMEs (charging station operators) 40 Microenterprises (rickshaw drivers)	30 % of 40 Microenterprises are LNOB+	1,105 SMEs And 80 Microenterprises (rickshaw drivers)	PU: Access to cooking	0	0	21,713	Outputs	Applicable	Details	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Another 2 SMEs (total 4) have developed and implemented business plans for solar battery charging.	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Indicative output: An investment process for solar battery charging stations has been developed with key stakeholders.
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<p>2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>transport has been reported as relevant impact in socioeconomic surveys.</p> <p>Energising Climate: while the CO₂ balance of the Bangladeshi power grid is still unfavourable today, the promotion of e-mobility is necessary to prepare the grid and transport system for comprehensive electrification at an early stage. E-mobility is in the long term more ecological than fossil-fuelled vehicles.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 12 % of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: <i>4 % of total budget (estimated 30% of the target group are LNOB)</i></p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>The current eCooking market is characterised by low quality appliances with short lifetimes that will increase the total amount of e-waste. In contrast to the BAU scenario, the RBF scheme only supports quality and high-efficient appliances and companies are required to offer a take-back services. For the solar-charging component, EnDev will encourage the use of lithium-ion batteries and address the issue of end-of-life battery take back with suppliers and operators. Experienced gained with these approaches will be fed into the national policy making process. Proper e-waste disposal and recycling are high on the political agenda: the GoB published the national e-waste management guideline in June 2021.</p> <p>The same logic applies to GHG emissions: EnDev’s support to high energy efficient appliances contributes to a market transformation towards a scenario in which less electricity will be used (and less GHG emissions emitted) than in the BAU scenario.</p>
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	Increasing global market prices for LPG but also electricity generation costs may be partially passed down to consumers but will probably not change the cost-effectiveness of eCooking compared to cooking with LPG.
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Budget				
<p>Please indicate your requested core budget using the table “Budget overview”.</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.</p>	Final budget for project period			
	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
	1	Core-budget (c.f. quotation price above)	2,000,000	-
	Total estimated budget		2,000,000	

2. Benin

Acronyms

ABERME	Beninese Agency for Rural Electrification and Energy Efficiency
AISER	Professional association of Renewable Energy specialists
ANM	National agency of standards
ARE	Electricity Regulatory Authority
BDS	Business Development Services
BeniBiz	Projet Benin Business
CGeD	Gender and Development Unit of the Ministry of Energy
DGRE	Directorate General for Energy Resources
EU	European Union
EnDev	Energising development Programme
EJASA	Youth Employment for Food Security Improvement
FI	Financing institution
GHG	Greenhouse Gases
GIZ/GBE	Green People's Energy
GIZ/ProMERC	Promotion d'un Marché d'Électricité Respectueux du Climat (ProMERC)
GIZ/ProFINA	GIZ programme for the promotion of agricultural finance
HH	Households
HTC	Higher tier cooking
ICS	Improved Cookstove
INRAB	National Institute for Agricultural Research of Benin
LNOB	Leave No One Behind
MASMF	Ministry of Social Affairs and Micro Finance
MCA	Millenium Challenge Account
ME	Ministry of Energy
SME	Small and Medium Enterprises
MW	Megawatt
NAPCC	National Action Plan for Clean Cooking
NUFFIC	Dutch organisation for internationalisation in education
NDC	National Determined Contributions
PAG	Government Action Plan
PDEHR	Master Plan for Off-Grid Electrification
PU / PUE	Productive use / Productive use of energy
RBF	Results Based Financing
REFEC	Association of elected female communal officials
SME	Small Medium Enterprises
SNE	National Electrification Strategy
SNV	Netherlands Development Organisation
SI	Social Institutions
UNACooPFA	Professional association of ICS producers
WB	World Bank
WEE	Women Energy Enterprises
WFP	World Food Programme

Summary and key data

Promoted technologies		Improved cookstoves, eCooking, standalone solar systems, nano-grids		
Type of Energy		Solar, biomass		
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Benin is implementing two components: Cooking Energy and Solar Energy.</p> <p>With the proposed intervention EnDev Benin will contribute to the strategic impact areas, in particular Energising Lives and Energising Opportunities, impacting the energy access for HHs, SIs and SMEs.</p> <p>Cooking:</p> <ul style="list-style-type: none"> • BDS for solar companies and PU/SI entrepreneurs, with special attention to female and young groups • RBF for PU and SI solar systems through a fund manager • Support to the integration of consolidated private companies in the ICS market • Promote the institutionalisation of public funds for the promotion of clean cooking • Pilot carbon credits as a financing option for the promotion of ICS at a large scale • ECooking promotion in urban areas and for PU/SI applications • Promotional campaign for PU/SI applications in collaboration with the government, mainly in rural areas <p>Solar:</p> <ul style="list-style-type: none"> • BDS for solar companies and PU/SI entrepreneurs, with special attention to female and young groups • RBF for PU and SI solar systems through a fund manager • Support to the professional associations, with special attention to female participation • BDS for FIs to better understand the opportunities of the solar market • Definition of national standards for off-grid solar systems • Promotional campaign for PU/SI applications in collaboration with the government, mainly in rural areas • Technology transfer and innovation for PU, mainly in agriculture • Development of nanogrid pilot projects <p>It is important to note that co-funding by the EU has been received. Related activities will not be detailed in this proposal and only mentioned where necessary.</p>			
Programming period	01.07.2023 - 31.12.2025	<table border="1"> <tr> <td> Indicative core budget </td> <td> EUR 3,700,000 </td> </tr> </table>	Indicative core budget	EUR 3,700,000
Indicative core budget	EUR 3,700,000			

	Higher tier cooking (HTC)	Leave no one behind (LNOB+)
Approx. thematic budget shares	3.3%	31.4%

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	56,949 people	N/A	134	
Cooking / thermal energy for households	303,216 people	5,670	25,875	
Electricity and/or cooking / thermal energy for social infrastructure	558 SIs	5	553	
Electricity and/or cooking / thermal energy for productive use / income generation	1,398 MSMEs	25	337	

Country context	
<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Country context</p> <p>97% of the energy mix is based on fossil fuels and non-renewable biomass. Electrification rate is 36% (10% in rural areas). Access rate to clean cooking is 9% (5% for rural areas). Sustainable access to energy remains a priority.</p> <p>National policies and strategies (SNE, PDEHR, NAPCC) outline government objectives to increase the electrification rate to 100% by 2030 and access to ICS to 52.97% by 2025. The NDC states to reduce 12.15% the GHG emissions of the energy sector with a significant contribution from ICS.</p> <p>EnDev supports government's endeavour through DGRE and ABERME. EnDev accompanies private sector associations (AISER and UNACooPFA). EnDev closely collaborates with EU Delegation, WFP, GIZ/GBE and GIZ/ProMERC.</p> <p>Further in collaboration with SNV, EnDev supports the ME to carry out a feasibility study for the development of the biodigester market.</p> <p>Objectives</p> <p>Since 2021, priority objectives are:</p> <p>Cooking: more professionalisation, larger production capacity and wider distribution networks.</p> <p>Solar: quality assurance, minimisation of environmental impact and wider coverage of rural areas.</p> <p>Activities by financing source are clearly separated but complementary:</p> <p>Core donors (activities presented in this document):</p> <ul style="list-style-type: none"> Cooking and solar - promotion of PU and SI applications

	<ul style="list-style-type: none"> • Cooking - eCooking promotion • Solar - pilot nanogrid projects • Cooking and solar - institutionalisation of capacities (sustainability and exit strategy) <p>EU cofinancing (11/2022-8/2025):</p> <ul style="list-style-type: none"> • Cooking and solar - promotion of HH applications • Cooking - innovation and training centre for clean cooking • Solar - certification campaign of solar companies • Solar - national plan for off-grid solar e-waste management <p>Sector alignment</p> <p>The energy sector remains a pillar of the Government Action Plan (PAG 2). Today, the government has a higher social concern and sees distributed energy systems as key to reach people living in remote areas as well as the poorest social segments. EnDev is well positioned as a priority partner. EnDev coordinates its interventions with the CGeD to support the ME's plan to integrate the gender dimension into the energy sector. This is also in line with EnDevs LNOB+ focus.</p> <p>EnDev Benin's approach based on private sector participation and market development is shared and applied by main sector donors: EU, MCA and WB.</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development 	<p>State of the market</p> <p>The ICS market in Benin remains in the pioneering phase. Two main constraints for market development are: 1) In most areas demand is higher than the offer since production capacity and distribution networks are limited because of lack of professional skills among artisanal producers. 2) Field evidence shows that the number of higher-tier ICS models adapted for PU and SI needs remains limited and, therefore, potential demand is not met.</p> <p>Two main strengths are: 1) The DGRE wishes to dynamise the ICS market through the roll out of the National Action Plan for Clean Cooking developed by EnDev. 2) Larger companies already consolidated in related sectors have begun exploring the ICS market. They show special interest in higher-tier models such as PU models and e-cookers.</p> <p>Transformative character</p> <p>Market development:</p> <p>To accelerate the professionalisation of the sector, the project will foster the introduction of private companies already consolidated in related sectors in the ICS market through promotion of higher-tier models (PU, SI, eCooking), which are attractive to these companies. In parallel, the project will also accompany the ME to explore and test the use of carbon credits as a mechanism to finance the needs of these companies to adapt to the ICS market. The project will also promote partnerships between producers and social government and</p>

<p>(access for social institutions)</p> <ul style="list-style-type: none"> • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>donor programmes. This will consolidate large scale market capacities at the same time as fostering poverty alleviation.</p> <p>Economic development: The project will foster SME productivity and job creation, by promoting PUE for several value chains, mainly in agriculture (rural economic development). Priority attention will be given to female entrepreneurs and job creation for women and youth by choosing women dominated value chains.</p> <p>Social development: Linked to its support to economic development, the project will contribute to the improvement of HH income situations. By creating jobs for women and youth inequalities will be reduced. With the promotion of ICS for SI, quality life standards in rural areas, will increase.</p> <p>Poverty alleviation: The project will specifically address the need to institutionalise the deployment of ICS for the most vulnerable population, facilitating fast and large deployment when needed (e.g. case of floods).</p>
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Cooking sector: Component 2.1 – ICS

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity</p>	<p>Preliminary note EnDev Benin accompanied 60 ICS artisan cooperatives for many years; however, they could not become sustainable businesses. Reasons were extremely low education level of artisans and lack of interest of new generations. Therefore, project’s strategy shifted into a professionalisation approach. In 2019, EnDev Benin concentrated efforts in the 15 most promising cooperatives. Today, only 5 can be expected to reach a semi-industrial (or industrial) level and become companies. The project aims to complete the national production capacity by bringing about 5 consolidated companies of related sectors into the ICS market.</p> <p>Modalities To develop the professional skills of ICS producers and distributors, BDS will be delivered in the form of topic-specific trainings as well as continuous accompaniment. Focus will be given to financial management, quality assurance, service delivery and business planning. A survey among our partner companies will be made to identify additional needs.</p> <p>RBF for cooking will be scaled up, specially to promote higher-tier stoves and expand distribution networks towards remote areas. Differently from the past, RBF will be implemented through a fund manager.</p> <p>Other financing options such as carbon credits will also be explored (see below).</p> <p>The project is carrying out a value chain analysis among four economic sectors (agriculture, handicraft, tourism and restoration).</p>
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<p>contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>The results will identify the specific value chains and PU technologies on which the project should focus.</p> <p>The project will continue applying financing arrangements (local subsidies, financing agreements and grant agreements) to strengthen implementation via partnerships and reinforce local capacities.</p> <p>Interventions / Activities</p> <p>A) Promotion of PU and SI applications Since already consolidated companies have shown particular interest for PU and SI stoves, the project will set up a RBF mechanism dedicated to such technologies to definitively bring private companies to participate in the ICS market. The project will also offer BDS (including business plan development for PU and SI projects) to these companies as well as to the best performing cooperatives (UNACooPFA members).</p> <p>The project will also provide BDS (including technology selection and maintenance) to the demand side, with special attention to female and young entrepreneurs of PU and SI projects.</p> <p>The project will concentrate efforts in a few selected economic value chains, prioritising those with higher potential impact for economic development in job creation in rural areas. This will be done in collaboration with projects of the Dutch cooperation (BeniBiz, NUFFIC, EJASA).</p> <p>B) Institutionalisation The project will gradually transfer its experience with the design and implementation of RBF activities to a fund manager. ABERME has been identified by the ME for this.</p> <p>The project will also explore options for long term financing of clean cooking:</p> <ul style="list-style-type: none"> • The MSAMF has a national programme to provide vulnerable families with a basic subsistence pack. This consist of first need products and it is distributed through the social promotion centre of each commune. The project will finance a pilot project to assess the impact of including a HH ICS in the subsistence pack. If the result is positive, the MSAMF may include access to ICS in its annual budget planning. • The Red Cross supports displaced communities affected by floods. The project will also support a pilot project to ensure access to ICS to these communities. The final aim will also be to convince Red Cross of the need to use part of its annual budget for this. • The WFP works to ensure that students of about 5.600 schools provide proper meals to their students. The project is in discussions with the WFP to collaborate in the installation of ICS in the canteens of these schools. <p>The project anticipates that if such institutions make regular tenders for the acquisition of large amounts of ICS, this will be an additional</p>
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	<p>incentive to attract consolidated private companies into the ICS market. In addition to this, the project will collaborate with the DGRE and ABERME to pilot carbon credits as a financing option for the promotion of ICS at a large scale.</p> <p>The project will continue collaborating with UNACooPFA and ANM to expand the certification campaign of ‘Anfani’ models and producers.</p> <p>Finally, the project will collaborate with REFEC to take advantage of the capacity of its members to widely disseminate messages among population, especially women in rural areas. REFEC officials will be trained in promoting the multiple benefits and applications of ICS.</p> <p>C) ECooking A few companies are already importing and commercialising e-cookers; however, this is a technology still not well known in the country. Main reasons for customers to purchase e-cookers seem to be the capacity to cook faster as well as being of easy wash and maintenance.</p> <p>Today, with 94% of electricity generation based on fuels, no current environmental advantage for the use of e-cookers exists. Nevertheless, the government is promoting 50 MW of grid-connected solar with projects in different stages of implementation. National grid covers about 60% of urban areas and only has a few hours of interruption a year.</p> <p>To assess the potential penetration of this technology in the country, the project will design a pilot activity focussed on HH in main urban areas as well as SMEs and SI with access to the grid. This will consist of a promotional campaign in combination with a RBF mechanism. In parallel, information about potential customer preferences and willingness to pay (including a tariff analysis) will be carried out.</p> <p>The collaboration with AISER for the implementation of this activity will include the priority participation of women and young (via incentives) and the pleading for import tax reduction.</p> <p>Lessons learned will be shared with DGRE and ABERME.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation takes place with the following partners on the respective topics:</p> <ul style="list-style-type: none"> • AISER: Promotion of eCooking technology. • ANM: Support to ongoing certification of “Anfani”. • Dutch cooperation: Promotion of PU models for economic value chains in agriculture. • GIZ/ProFINA: Capacity development for ICS producers . • MASMf/Red Cross: Inclusion of ICS in regular budget planning for social protection programmes. • ME/DGRE and ABERME: piloting carbon credit utilisation. • REFEC: Capacity building of locally elected women on ICS promotion. • UNACooPFA: Consolidation of production and distribution skills for PU and SI ICS.

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<ul style="list-style-type: none"> • WFP: Equip school canteens with IS models. <p>F- Professionalised and larger companies will have easier access to FIs. Carbon credits can anchor bankable proposals thus creating financial sustainability.</p> <p>I- Interministerial structure to promote clean cooking with EnDev participation anchoring clean cooking on a policy level.</p> <p>E- Support to producers and local authorities to develop sustainable plans for the use of clay quarries. A higher use of ICS will lead to a lower biomass consumption.</p> <p>T- ICS innovation and training centre (EU cofinancing) to ensure technology transfer as well as skills and models for the market. Also focus on repair and after sales service for eCooking and large ICS.</p> <p>S- The use of ICS for economic development (PU), health (SI) and social protection programmes will consolidate the acceptance of the technology.</p> <p>Exit strategy based on the institutionalisation interventions described above.</p>																										
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>303,216</td> <td>5,670</td> <td>25,875</td> <td>1,396,664</td> </tr> <tr> <td>SI: Access to cooking</td> <td>525</td> <td>5</td> <td>430</td> <td>543</td> </tr> <tr> <td>PU: Access to cooking</td> <td>430</td> <td>25</td> <td>106</td> <td>1,591</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input checked="" type="checkbox"/></td> <td>Sensitisation of rural populations on ICS use for PU applications will be delivered</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	303,216	5,670	25,875	1,396,664	SI: Access to cooking	525	5	430	543	PU: Access to cooking	430	25	106	1,591	Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Sensitisation of rural populations on ICS use for PU applications will be delivered
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<p>and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	<i>Carbon credits will be explored as financing mechanism for ICS</i>		
	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	<i>A- The project will focus on increasing production and distribution capacities for PU and SI ICSs</i> <i>B- support will be given to expand businesses in the e-cooker market</i>		
	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	<i>BDS will be used to support business plan development for PU and SI</i>		
	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	<i>Import tax reduction for e-cookers will be promoted</i>		
	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>			
	Cooking sector: Component 2.1 – Table 3				
	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
	Indicator 1: number of supported PU businesses led by women	210	10	-	210
	Narrative				
	<p>The number of LNOB+ people, in terms of vulnerable communities, with access to cooking indirectly reached by the project has a tremendous potential. It will be largely higher than 25,875 in case government institutions and donor programmes institutionalise the use of part of their annual budgets to finance ICS.</p> <p>The total of people with access to cooking by 12/2025 includes 271,671 additional people that will be reached by the action cofinanced by the EU.</p>				
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component</p>	<p>Approx. 50.7% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 3.3%</p> <p><input checked="" type="checkbox"/> LNOB+: 20.2%</p>				

contributes to the thematic budget share for higher tier cooking and leave no one behind

Electricity sector

- Please briefly describe
- the current state of the market based on the ToC for the electricity sector, highlighting key barriers
 - how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:
 - Market development** (developing a market for energy access technologies – mainly relating to household access)
 - Economic development /** productive use
 - Social Development**
 - Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.

State of the market

The government plans to reach 100% electrification by 2030 with a strategy based on the combination of three elements: national grid extension/densification, minigrids and off-grid systems. Clear percentages for each one have not been published yet. Nevertheless, national grid is not being developed at the expected rhythm and planned minigrid projects will be either delayed or not built. Therefore, although the off-grid solar remains in a pioneering phase, there is room for significant growth, mainly in rural and peri-urban areas. The market shows large potential in the application for PU in several sectors with high economic value as well as for privately operated SI.

To finance the expansion of the off-grid solar market, dedicated financings are needed, which presents an opportunity for financial institutions to develop innovative finance mechanisms.

Today, professional associations are still not playing the expected leading role to ensure strategic coordination and to represent the private sector before the government.

Transformative character

Market development:

The project will facilitate that the solar off-grid technology reaches the rural (and peri-urban) population of the country, which today does not have access to electricity to cover its basic needs. The promotion of PU applications and nanogrids, very appropriate for these areas, will play the role of spearhead. In parallel, the project will promote the opportunities that off-grid solar, and PU applications in particular, offers to FIs.

Economic development:

The project will foster SME productivity and job creation, by promoting PUE for different several value chains, mainly in agriculture (rural economic development). Priority attention will be given to female entrepreneurs and job creation for women and youth by choosing women dominated value chains.

Social development:

As a consequence of its support to economic development, HH income situations will improve. In addition, supplying SI with access to electricity will directly improve the quality life standards, mainly important for rural remote areas. Priority attention will be given, for female and young technicians in rural areas, therefore gender-based inequalities will be reduced.

Poverty alleviation:

The project will implement a 'pro poor' RBF window under the EU cofinancing.

Electricity sector: Component 3.1 – Off-grid solar

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).

Modalities

To well prepare our partner companies to conquer new niches in rural and peri-urban areas, BDS will be delivered in the form of topic-specific trainings as well as continuous accompaniment. Focus will be given to financial management, quality insurance, service delivery and business planning. A survey among the companies will be launched to identify any other special needs.

A combined strategy of BDS and test of innovative financial mechanisms will be used to incentivise the participation of FIs in the solar off-grid market. The project will soon carry out a crowdfunding potential analysis.

RBF will continue being used to promote PU applications and will be tested in the promotion of SI. Differently from the past, RBF will be implemented through a fund manager.

The project is carrying out a value chain analysis among four economic sectors (agriculture, handicraft, tourism and restoration). The results will identify the specific value chains and technologies in which the project should concentrate its efforts for the promotion of PU applications.

The project will continue applying financing arrangements (local subsidies, financing agreements and grant agreements) to strengthen implementation through partnerships and reinforce local capacities.

Interventions / activities

A) Promotion of PU and SI applications

For the last three years, GBE has been responsible for the promotion of PU and SI projects in Benin. Since GBE will end activities soon, it is a good timing for EnDev to resume its activities in this area.

To encourage solar companies to increase their activities in PU and SI solar applications, the project will set up a RBF mechanism dedicated to such technologies. The project will also offer BDS (including business plan development for PU and SI projects) to these companies.

The project will provide BDS (including technology selection and maintenance) also to the demand side, with special attention to female and young entrepreneurs of PU and SI projects by choosing women dominated value chains.

The project will concentrate efforts in a few selected economic value chains (to be identified by the ongoing value chain analysis), prioritising those with higher potential impact for economic development in job creation in rural areas. This will be done in

collaboration with projects of the Dutch cooperation (BeniBiz, NUFFIC, EJASA).

In the case of SI, the project will concentrate in privately operated SI (e.g. school canteens finance by parent associations and privately-owned clinics) because GBE experience has shown that project implementation cannot rely on public contributions to SI.

B) Institutionalisation

The project will gradually transfer its experience with the design and implementation of RBF activities to a fund manager. ABERME has been identified by the ME for this. Nevertheless, a call for expression of interest has been launched in order to identify other potential managers.

According to the government, PU and SI applications are still not well known, mainly in rural areas. To overcome this challenge, the project will carry out a national wide dissemination campaign in collaboration with ABERME.

AISER has a new governing board since mid-2022. The new team has brought fresh air and new ideas. The ME has very much appreciated this change and has publicly announced its expectations on AISER and its members to play a key role in the electrification of population neither covered by the national grid nor by minigrids. The project will set up a new partnership with AISER to support the association to comply with such ME expectations, with special focus on the integration of female capacities in the solar market by incentivising the recruitment of women.

The project will develop BDS activities for FIs to allow them to better understand the opportunities that the off-grid solar sector offers. FI should play a key role in financing solar companies in the long term.

Thinking in FIs and potential investors, the project will support the DGRE to define national quality standards for off-grid solar systems. This will be the base for a national certification campaign for solar companies that the project will carry out in cooperation with the DGRE under the EU cofinancing.

The project will also establish a collaboration agreement with INRAB to ensure technology transfer and innovation in the PU equipment within the agriculture sector.

C) Nanogrids

The nanogrid technology has not been yet tested in Benin although experiences in neighbouring countries like Togo exist.

The definition of nanogrid is not standard; however, the project is considering systems of less than 5 kWp with no more than 8 consumers connected, either HHs, SMEs or SIs. The project is considering the mesh-grid or swarm configuration instead of the centralised one, which is more common for minigrids. The mesh-grid is characterised by a network of interconnected individual power PV

	<p>systems in which each one has its own meter to be able to register the power given and taken from the grid.</p> <p>The project is planning to promote 3 or 4 pilot nanogrid projects. To do this, the project will set up a collaboration with the CGeD and the association WEE in order to develop this experience with prioritisation of women and young capacities and for women beneficiaries (2 HHS and 2 SMEs lead by women). The objective is to have a innovative case study to show the potential of women and young in the energy sector.</p> <p>The pilot sites will be chosen in collaboration with ABERME.</p> <p>Results and lessons learned will be shared with DGRE and ABERME. This will allow to consider nanogrids in the policy and regulatory frameworks.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation takes place with the following partners on the respective topics:</p> <ul style="list-style-type: none"> • ABERME: Communication campaign for the promotion of PU application for economic development in rural areas. Transfer of capacities for RBF management. • AISER: Consolidate capacities to coordinate and represent its members and defend their interests. • Dutch cooperation: Promotion of PU technologies for economic value chains in agriculture. • GIZ/GBE: Knowledge exchange and coordination on PU and SI activities and approaches. • INRAB: Foster solar technology transfer for applications in agriculture. • ME/CGeD and WEE: Piloting of nanogrids. • ME/DGRE and ARE: Definition of national standards for solar products.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? 	<p>F- The project will foster the interest (currently very weak) of FI in the solar PV market. In parallel, PU entrepreneurs will be supported to develop bankable projects with the support of RBF solutions to increase financial sustainability.</p> <p>I- The regulatory framework for the electricity sector is well established. For solar off-grid it is necessary to define national standards, which is one of the project's priorities.</p> <p>E- The project is supporting the government to develop a national strategy for solar PV e-waste (EU cofinancing).</p> <p>T- The project's BDS strategy includes selection of (long-lasting) quality equipment as well as post-sales and certification services.</p> <p>S- The use of quality solar equipment for economic development (PU) and health (SI) will consolidate technology acceptance .</p> <p>Exit strategy based on the institutionalisation interventions described above.</p>

<ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																						
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 49.4% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 11.2%</p>															

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to</p>	<p>For solar PV equipment, the main ecological risk lays in the improper disposal once the end of life is reached. Here, EnDev is supporting (through EU cofinancing) government entities in developing and piloting a national e-waste strategy. Once established, this will minimise significantly any negative impact.</p> <p>For ICS the main environmental risks lay in the improper exploitation of clay queries, with possible negative impacts on water quality and</p>
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avoid, minimize or mitigate these risks?	erosion. To mitigate this risk, EnDev has foreseen to support ICS producers in improving the management of these sites. EnDev Benin benefits from a favourable policy and legal environment in terms of gender equality but is faced with limited knowledge and experience in implementation of gender-transformative approaches. Since October 2022, the project counts with a full-time gender expert. This will allow the project to develop the EnDev Benin strategy (2020) and better accompany the CGeD.
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Budget

<p>Please indicate your requested core budget using the table “Budget overview”.</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.</p>	<p style="color: #009688; font-weight: bold;">Final budget for project period incl. co-financing</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #009688; color: white;"> <th style="width: 5%;">#</th> <th style="width: 35%;">Donor</th> <th style="width: 15%;">EUR</th> <th style="width: 45%;">Brief description of co-financing (max. 200 characters w/o spaces)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Core-budget (c.f quotation price above)</td> <td style="text-align: right;">3,700,000</td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td>EU + BMZ</td> <td style="text-align: right;">4,300,000</td> <td style="text-align: right;">Total: EUR 5 Mio. Period: 11/2023 - 8/2025</td> </tr> <tr style="background-color: #009688; color: white;"> <td></td> <td>Total estimated budget</td> <td style="text-align: right;">8,000,000</td> <td></td> </tr> </tbody> </table>	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)	1	Core-budget (c.f quotation price above)	3,700,000		2	EU + BMZ	4,300,000	Total: EUR 5 Mio. Period: 11/2023 - 8/2025		Total estimated budget	8,000,000	
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3. Bolivia

Acronyms

AeA	Ayuda en Acción (Help in Action)
APMT	Autoridad Plurinacional de la Madre Tierra (Plurinational Authority of Mother Earth)
BDP	Banco de Desarrollo Productivo (Productive Development Bank)
ENDE	Empresa Nacional de Electricidad (National Electricity Company)
FEM	Fondo Energía de Mujer (Women's Energy Fund)
FI	Financial institution
FIETS	Financial, Institutional, Ecological, Technological and Social
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
NDC	Nationally Determined Contributions
PA	Practical Action
PUE	Productive Use of Energy
PUM	Programma Uitzending Managers (Program Broadcast Managers)

Summary and key data

Promoted technologies	 Grid, mini-grid, SHS, productive use		
Type of Energy	 Solar		
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Higher-tier electrification: Handout of information and databases of connected HH and SI to local electricity cooperatives/distributors. Updated information on procedures and requirements for connecting new potential users.</p> <p>Solar market development: BDS for supply-side: a) Tailor-made training on marketing and business management for newly identified micro and small SPV suppliers, b) Specialized advise for capacity building for SPV suppliers on developing/strengthening business, c) International exchange spaces with EnDev Africa for developing new business ideas.</p> <p>Productive use of energy (PUE): Transferring EnDev’s knowledge, experiences, methodologies and strategies to local development institutions. Further qualification on business management for women entrepreneurs. Strengthening PUE technology suppliers. Developing national spaces for stakeholder exchange and articulation. Capacity building and specialized advise on innovation for local PUE technology suppliers.</p> <p>Finance system collaboration: Technical advise, training, sensitizing financial sector staff. Exchange spaces gathering supply, demand, and financial sector. Supporting financial institutions that have green funds or are interested in solar technologies, for the development of financial products for PUE and solar solutions targeting rural areas.</p> <p>Innovative financing mechanisms: Women Energy Fund (<i>FEM</i>) and FASER<i>Te</i> (<i>Fund for Sustainable Access to Renewable Energy and Efficient Technologies</i>): experience and knowledge transfer/handover to local development institutions.</p> <p>E-waste: Pioneering study analysing e-waste management current state and possibilities in rural areas.</p>		
Programming period	01/07/2023 – 30/06/2024	Indicative core budget	EUR 500,000
	Higher tier cooking (HTC)		Leave no one behind (LNOB+)
Approx. thematic budget shares	-		-

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> 1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) 2. EnDev's overarching objectives in the markets being supported 3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Electricity coverage in rural Bolivia advanced significantly in the last 15 years, increasing from 33% in 2006 to 86% by 2021. The Government of Bolivia (GOB) has finally submitted its updated NDCs for 2021-2030, which includes 10 targets for the energy sector, one of them being universal coverage by 2030, which has been and continues to be actively supported by EnDev.</p> <p>These NDCs arise in a context where Bolivia's natural gas reserves (which currently account for approximately 70% of electricity generation) are depleting fast and their outlook is not favourable for the next decade.</p> <p>Despite a tense socio-political environment and a delicate relationship with the national political counterpart, EnDev harmonizes with GOB's goals for increasing energy access and PUE in rural areas. It collaborates with the national electricity utility, Empresa Nacional de Electricidad (ENDE), local electricity distributors and cooperatives, other international development cooperation (such as IDB), and local partners and counterparts in the solar and productive sectors. Main implementing partners are renowned international development organizations: Practical Action (PA), the Inter-American Institute for Cooperation on Agriculture (IICA) and the Spanish NGO "Ayuda en Acción" (AeA).</p> <p>EnDev is the most relevant actor in Bolivia for PUE in rural areas. And it is the only national actor actively seeking to engage the financial sector with the solar market and PUE: It is carrying out targeted sensitizing and capacity building activities for financial institutions with productive and renewable energy loans to expand financing towards modern energy and PUE. EnDev is collaborating with the Productive Development Bank (BDP) and other financial institutions working in rural areas.</p> <p>EnDev's interventions for this Phase-out period are focused mostly on achieving Sustainability (FIETS) for each of its components in the Electrification sector (Higher-tier electrification, Solar market development and Productive use of energy).</p>
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Electricity sector

<p>Please briefly describe</p> <ol style="list-style-type: none"> a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers b. how key EnDev interventions / 	<p>Despite significant advances in electricity coverage, energy access is still limited in rural areas. HH, SI and MSMEs still need support for energy access in Bolivia. Rural communities, the private sector, local implementing partners and the financial sector can benefit from EnDev's experience, handed to them through specific tools, methodologies, products, and information, which can be properly delivered and transferred to achieve ownership during this phase-out period.</p>
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<p>components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Higher-tier electrification Due to lack of capacity building and market strategies, weak management skills and high staff turnover, local utilities and rural cooperatives face challenges to fulfil their mandate to increase connections. Not only the connection costs are high for rural households, but the municipalities and potential users also lack guidelines and information about administrative procedures for the connection.</p> <p>Market development. Key information about electricity sector regulations, administrative process manuals, and EnDev databases will be handed to electricity utilities, and to local stakeholders. This should facilitate new connections after phase-out.</p> <p>Social development. Workshops with poor and disperse rural cooperatives and with representatives of non-connected rural communities, for handing information regarding conditions, regulations and strategies for increasing connections in rural areas.</p> <hr/> <p>Solar market development Solar market shows signs of steady recovery after the effects of the Covid-19 pandemic. Sales increased and employment in the larger SPV suppliers has stabilized. New micro and small suppliers are emerging. However, efforts from the private sector to achieve market growth and diversification face an overall unfavourable business environment, long time in customs for imports, and high transportation time and costs. They also lack qualification to better target rural market niches and require further linkages with the demand-side and the financial sector. GOB policy is not market-development oriented, despite its growing interest in solar off-grid solutions.</p> <p>Market development. Interventions to strengthen the private sector, support for overcoming some of these constraints, further linking supply-demand-financial sectors, facilitating new business ideas and business ecosystem development for SPV suppliers. Further sensitization and information for the demand-side and financial sector.</p> <hr/> <p>Productive use of energy (PUE) Supply and demand-side actors are increasingly aware of transformative potentials of PUE and are more willing to invest in modern energy technologies for PUE. However, key constraints remain such as lack of financing, weak business management and technology governance, weak enabling environment, among others. Improvements on the business environment for demand and supply and further linkages with the financial sector are necessary. Knowledge exchange is needed, where EnDev can contribute with its unique PUE approach.</p> <p><i>Market/Economic development.</i> Handing out EnDev's PUE approach and methodologies to local partners, facilitate open and national spaces for linking supply, demand, and financial sector.</p> <p><i>Economic/Social development.</i> Support for a more informed, connected, qualified environment for PUE technology suppliers. Further training on business management for MSMEs' women leaders.</p>
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Electricity sector: 2.1. Component - Higher tier electrification

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>Modalities and key interventions EnDev’s activities aim to improve rural electricity utilities’ conditions for better planning and service provision in their service areas, by providing them with reliable and useful information about HH and SI connections. Activities also seek to improve the advocacy capacity of potential users to increase connections.</p> <p>Key interventions:</p> <ul style="list-style-type: none"> • <i>Training and knowledge transfer</i> for 9 electricity utilities’ staff. • Reliable and structured information (databases) delivered at municipal and community level to their respective rural utilities to improve planning and institutional management. • <i>Raising awareness and information</i> distribution about conditions, procedures and regulations for connecting (for potential users). • <i>One publication</i> condensing years of nation-wide implementation will be handed to relevant stakeholders. • <i>Delivery of printed and digital material</i> for advertisement related to electricity connection campaigns, including Non-violence against women messages.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation and collaboration system: To accomplish its phase-out objectives, EnDev collaborates with:</p> <ul style="list-style-type: none"> • Capacity building for the National Electricity Utility (ENDE), main responsible of rural electrification. • Capacity building and institutional strengthening for smaller rural electricity cooperatives and distributors: Service providers that are not part of ENDE, and are responsible for specific disperse, impoverished and more vulnerable areas. • Capacity building for rural electricity cooperatives, small and poor organizations, without managerial capacity or administrative skills. • Support for sector interconnections: electricity providers with municipalities and grass-roots organizations of non-connected users, and counterparts that are well known to EnDev.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking</p>	<ul style="list-style-type: none"> • Institutional: Information and knowledge transfer to electricity utilities and to user groups aims to ensure continuity in HH and SI connections in rural areas. Handover of information will reinforce institutional capacity, especially in the poorest and more vulnerable areas.

into account the following sustainability dimensions:

- **Financial** – is there a viable business case in the absence of the project, or sustained alternative funding?
- **Institutional** – is there an enabling environment with supportive institutions?
- **Ecological** – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?
- **Technological** – is technology and know-how for replacement and repair available?
- **Social** – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?

What is the exit strategy and/or ideas for follow-up financing?

- **Economic:** Information and training can provide with adequate commercial management and business capabilities for the supported utilities.
- **Technological:** Remote rural cooperatives serving the poorest and most vulnerable communities will be provided with EnDev’s assets (especially electronic devices, e.g., computers, printers) to improve their working conditions.
- **Social:** Handover of materials (radio slots, stickers, logos) developed to broadcast and disseminate messages of non-violence against women and emergency hotline numbers for denouncing male violence. This can continue to be used by local electricity distributors/cooperatives.

Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

Electricity sector: 2.1 Component - Higher tier electrification Table 1

Outcomes	Additional 07/2023 – 06/2024
People: Access to electricity	971

**Expected number of HH connections to be achieved during the phase-out. No specific budget allocation.*

Electricity sector: 2.1 Component –Higher Tier Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	At least 300 potential costumers empowered with information for electricity connections
Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Rural utilities increase their market share with new connections

Narrative

<p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Key interventions aim to collaborate in capacity building for specific rural utilities, and as result, to strengthen the rural electricity sector. Increasing rural connections is part of the sector alignment and directly contributes to the national GOB’s Agenda and national NDCs.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 0 % of total budget</p>

Electricity sector: 2.2. Component – Solar market development

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please</p>	<p>Modalities and key interventions</p> <p>Interventions to inform, train and strengthen financial institutions interested in creating opportunities for the solar market. Capacity building, knowledge transfer to the private sector, facilitating support for overcoming market constraints. Further linking supply-demand-financial sectors, facilitating new business ideas and business ecosystem development for SPV suppliers.</p>
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<p>refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>Opportunities for e-waste business case and regulation development as a first national effort. EnDev know-how and experience that are continuously transferred to <i>FASERTe (Fund for Sustainable Access to Renewable Energies)</i> and to our partner IICA (<i>Inter-American Institute for Cooperation on Agriculture</i>) can be continued and replicated in the country.</p> <p>Key interventions:</p> <ul style="list-style-type: none"> • <i>Access to Finance:</i> Technical advice to interested financial institutions for the development of financial products (loan packages) for solar and productive technologies in rural areas. • <i>Awareness Raising:</i> A specific national thematic event (“EnDev Solar”) for more inclusive networks of SPV suppliers linked to demand-side and financial institutions. The first “EnDev Solar” event, proved to be a positive experience to link the three market sectors, and will be continued through at least one more event. These will also be appropriate spaces to present and distribute related documents prepared by the EnDev team. • <i>BDS:</i> Support for the growth of at least 5 solar technology suppliers through training (business management, commercial/marketing skills) and specialized technical assistance. • <i>Information and knowledge transfer:</i> on the solar and productive markets in rural areas. • <i>Tech capture:</i> Knowledge exchange with EnDev’s African countries for key SPV suppliers to identify, encourage and boost new business ideas and opportunities. • <i>Pioneering study analysing current state e-waste:</i> management and exploring possibilities in rural areas (market reach, identifying key actors, national opportunities) will be made available for development institutions, private sector, practitioners and the national government. • <i>Partnerships and alliances for products transfer:</i> FASERTe’s knowledge transfer to the most suitable partner, related and connected to rural communities, institutions, and governmental departments of rural <i>development: IICA.</i> • <i>Information and knowledge transfer:</i> Three (3) different publications condensing years of nation-wide implementation will be handed to relevant stakeholders.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation and collaboration system:</p> <p>To accomplish the objectives, EnDev collaborates with:</p> <ul style="list-style-type: none"> • Financial institutions, by training their staff and executive managers to include modern energy and technology in green financial products. • Supply+Demand+Financial sectors, by developing open spaces for collaborative and experience exchange related to solar technologies, solutions, and market development. • Technology suppliers: Capacity building and training in commercial skills. Most relevant suppliers will be included in international exchange activity with EnDev’s African countries for innovative business ideas. • Capacity Building for IICA as a relevant partner that will receive FASERTe experience.

Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:

- **Financial** – is there a viable business case in the absence of the project, or sustained alternative funding?
- **Institutional** – is there an enabling environment with supportive institutions?
- **Ecological** – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?
- **Technological** – is technology and know-how for replacement and repair available?
- **Social** – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?

What is the exit strategy and/or ideas for follow-up financing?

- **Financial:** After two years of comprehensive work, EnDev has established alliances with financial institutions interested in developing and strengthening their capabilities and knowledge regarding energy and technology access in rural areas. Several workshops, staff training events and technical advice, are leading up to the development of financial products for renewable energies and technologies (including for PUE) for rural areas.
- **Institutional:** Capacity building and knowledge transfer to financial sector for institutional growth. Capacity building and innovation for solar suppliers identified at national level. Publication of a solar market analysis for Bolivia, with updated information on national and international suppliers and certified technology, will be distributed to relevant stakeholders, GOB and financial institutions.
- **Ecological:** Pioneering study on current state of e-waste management at EOL of SPV components, along with recommendations for regulations on proper SPV e-waste management, will be available and handed to development institutions, private sector, practitioners, and the national GOB.
- **Technological:** Specialized advice and knowledge transfer for SPV suppliers to identify new business opportunities in the solar/agricultural sector. Intercontinental south-south experience exchange with other EnDev country projects with successful pilots and innovative business ideas and payment strategies. Qualification of SPV suppliers on developing/strengthening solar business with international experts.
- **Social:** New opportunities of access to financing can benefit rural vulnerable and poor but nevertheless potential solar users.

Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy

Electricity sector: 2.2 Component – Solar Photovoltaic Table 1

Outcomes	Additional 07/2023 – 06/2024
People: Access to electricity	15

*Expected number of HH connections to be achieved during the phase-out. No specific budget allocation.

Electricity sector: 2.2 Component – Solar Photovoltaic Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Solar customers informed and linked with solar suppliers and financial institutions.

<p>type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Indicator 1.2: +25% customers reached by fin. Products</p>	<input checked="" type="checkbox"/>	<p>Financial products developed.</p>
	<p>Indicator 3.2: added value of support given to stakeholder networks</p>	<input checked="" type="checkbox"/>	<p>Solar rural market national network improved</p>
	<p>Narrative</p> <p>EnDev interventions provide a unique opportunity to link solar market actors for lightning and PUE with the financial sector, developing institutional capacity and knowledge transfer at international level. It is a real contribution for the sustainability and development of the solar market in Bolivia.</p> <p>We have observed that rural PV markets are becoming more viable for end-users and for suppliers. The FASERTe fund (purely market approach) reported relevant sales numbers in the period 2019-2022, which seem to indicate an increasing willingness to pay (users). We perceive that the demand for SPV will continue to grow in rural areas due to lack of electricity access and continued increased awareness of solar benefits including for productive uses, although, costs for some PV solutions are still relatively high for rural purchasing power.</p> <p>Suppliers are implementing installments payments to facilitate rural purchasing, with positive sales results and FI are interested in developing loans for renewable energies or for energy efficient technologies. Some of them are working to access international green funds. However, FI are not sufficiently linked with the supply and with the demand sides of SPV and PUE appliances: they are not aware of the specific needs, constraints, and potentials of these markets, especially in rural areas and interest rates for rural areas are still high for rural users.</p> <p>EnDev is trying to provide spaces for valuable market information exchange and to link these sectors/stakeholders, which is necessary for developing and targeting specific loan products (and strategies). Technical advice and sensitization are therefore one of the necessary steps (which are also requested by FI) to produce impact in the financial sector, together with the aforementioned activities. Again, EnDev is actively working to further link these stakeholders, seeking that financial institutions can eventually develop more “tailor-made” loans for rural users. So far, we don’t know how this will evolve once EnDev leaves the country.</p>		
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of</p>	<p>Approx. 0 % of total budget</p>		

<p>monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	
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Electricity sector: 2.3. Component – Productive use of energy

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>Modalities and key interventions</p> <p>The aim is to develop and strengthen the innovative, business and commercial capacities of the technology suppliers that have been working with EnDev at a national level. Successful products like the FEM initiative will be anchored to a local development institution, aiming to its continuity and evolution. EnDev will create national spaces for market actors’ encounter and linkages (Supply+Demand+Financial sector). Rural women entrepreneurs supported by FEM will be trained in business management, commercial skills, and PUE technology governance.</p> <p>Key interventions:</p> <ul style="list-style-type: none"> • <i>Access to Finance:</i> Technical advice to interested financial institutions for the development of financial products (loan packages) for solar and productive technologies in rural areas. • <i>Staff training and awareness raising</i> for financial institutions’ staff, about renewable energies and technologies for PUE. • <i>Knowledge Exchange Events:</i> including MSMEs, experts, institutions, the private sector and EnDev practitioners, to further develop productive markets in rural areas. Four (4) sessions, organized by EnDev. • <i>Awareness Raising:</i> Athematic national event (“EnDev Productive”) for linking supply, demand and financial sector for PUE in rural areas. Technology suppliers from different parts of the country, IFs, NGOs, development institutions and international cooperation working in agriculture or rural areas, municipalities, and interested GOB programs are going to be part of these events. • <i>Information and knowledge transfer:</i> Handover of implementation strategies, results and methodologies. A series of national encounters will be organized, and specific thematic documents condensing years of nation-wide implementation will be handed to relevant stakeholders. • <i>BDS:</i> Support for the growth of micro, small, and medium-sized productive technology suppliers and specialized technical assistance. Women-led MSMEs from FEM will also access to tailor-made BDS courses. • <i>Innovation:</i> Development and strengthening of technical innovation capacities with participation of national and international experts in collaboration with other international cooperation. Handover of design-thinking methodologies developed and applied for participatory co-designing and innovative adaptation of PUE technologies.
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	<ul style="list-style-type: none"> • <i>Policy advice and capacity development:</i> Pioneering information on e-waste management in rural areas with recommendation for regulation available for development institutions, private sector, practitioners and the national GOB • <i>Partnerships and alliances for products transfer:</i> Handover of FEM to Practical Action.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>To accomplish the objectives, EnDev collaborates with:</p> <ul style="list-style-type: none"> • Financial institutions: Staff training and sensitization on productive technology for rural areas for its inclusion in their green financial products. • PUE Technology suppliers: Training in innovation, design-thinking skills and methodologies. • Supply, Demand and Financial institutions: Support for interconnections through open spaces for Exchange of knowledge, experiences and local requirements; national events with multi-stakeholder participation. • Capacity building and knowledge transfer to Practical Action as a relevant partner that will receive and anchor FEM. • Lund University (Sweden) for a complementary study on PUE technologies and their effects on women’s lives and livelihoods. • Netherlands Senior Experts platform (PUM): Consultancies/Advising from PUM international experts for supporting the development of business for local PUE technology suppliers.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project 	<ul style="list-style-type: none"> • Financial: After two years of comprehensive work, EnDev has established alliances with financial institutions interested in developing and strengthening their capabilities and knowledge regarding energy and technology access in rural areas. Several workshops, staff training events and technical advice, are leading up to the development of financial products for renewable energies and technologies (including for PUE) for rural areas. • Institutional: Capacity building for suppliers, Practical Action (institutional anchorage to a locally established development organization). Publication of PUE analysis for Bolivia, with updated information on suppliers and appropriate technologies, will be distributed to relevant stakeholders, GOB and financial institutions. • Technological: Specialized advice for capacity building for PUE providers on developing/strengthening business with international experts. Tech capture tour in Africa for SPV suppliers to identify new business opportunities in the solar/agricultural sector. Training events for local metal mechanic workshops, micro industries and technology suppliers on innovation and design-thinking. Consultancies/Advising for supporting the business development for local PUE technology suppliers with international experts. Updated catalogue of available PUE technologies at national level (and PUE technology suppliers), including innovative concepts and adaptations developed through EnDev support. • Social: Handover of EnDev’s FEM approach and methodologies developed to support women-led MSMEs to ensure its continuity. Tailor-made courses on business

<p>ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>management and PUE technology governance for female leaders of MSMEs supported by FEM. Learning Guide for Business Management for rural women entrepreneur (Trainer & Trainee) based on EnDev’s experiences. Publication: Impact of PUE technologies in rural women’s lives and livelihoods.</p>																					
<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs <p>using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the</p>	<p>Electricity sector: 2.3. Component – PUE</p> <p>Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> </tr> </thead> <tbody> <tr> <td>PUE: Access to electricity</td> <td>23</td> <td>0</td> </tr> </tbody> </table> <p>Electricity sector: 2.3. Component – PUE</p> <p>Table 2</p> <table border="1"> <thead> <tr> <th>Outputs:</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input checked="" type="checkbox"/></td> <td>At least 5 MSMEs (PUE user groups) empowered with network exchange and BDS</td> </tr> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td><input checked="" type="checkbox"/></td> <td>At least 3 financial institutions trained about PUE technology</td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUEE systems</td> <td><input checked="" type="checkbox"/></td> <td>At least 5 technology suppliers trained in innovation and commercial skills</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input checked="" type="checkbox"/></td> <td>One national event to develop a PUE network at national level</td> </tr> </tbody> </table> <p>Narrative:</p> <p>Key interventions will collaborate with GOB new objective to increase PUE in rural communities. They will support BDS for locally developed technology available for rural communities. Emphasis on linking and strengthening all relevant stakeholders (National and local governments’, other international cooperation, NGOs, private sector) working to provide PUE technologies in rural areas.</p> <p>Rural women entrepreneurs supported by EnDev are eager to complete and continue trainings to improve their knowledge and capabilities. However, they lack capacities on business management, marketing and technology governance and are excluded from formal and adequate learning spaces. This is why economic empowerment for women entrepreneurs in rural areas is also to be reinforced during phase-out. We will work with a gender transformative approach to facilitate rural women to technology and business management skills. This aims to economically empower rural women producers.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	PUE: Access to electricity	23	0	Outputs:	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	At least 5 MSMEs (PUE user groups) empowered with network exchange and BDS	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	At least 3 financial institutions trained about PUE technology	Indicator 2.2: suppliers with new business plans for PUEE systems	<input checked="" type="checkbox"/>	At least 5 technology suppliers trained in innovation and commercial skills	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	One national event to develop a PUE network at national level
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impacts described in the ToC.	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	Approx. 0 % of total budget

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>EnDev carries out its activities with an active involvement of women in all of its technical areas of action. We carefully seek that our interventions avoid possible conceptual and thematic conflicts with counterparts, tense political spaces, or environmental damages. These are our standard measures:</p> <ul style="list-style-type: none"> • EnDev always prioritizes activities that strengthen women's skills and capabilities. • Sustained and permanent support in combating violence against women. • Technical training processes that support the transformation of gendered labour roles traditionally assigned to women. This includes: (a) empowerment and leadership skills. (b) finance facilitation. (c) strengthening of technical and business skills. • Advocacy with counterparts and allied institutions for positioning the issue of gender and raising awareness. • E-waste study is an EnDev collaboration for environmental protection and prevention. It is the first of its kind in Bolivia, as an attempt to develop work in this subject with interested institutions. • EnDev always works with good and warranty schemes from technology providers, material and equipment available for on-grid, solar and PUE implementation.
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	500,000	
	Total estimated budget	500,000	

4. Burundi

Acronyms

AVSI	AVSI Foundation - Association of Volunteers in International Service
BCC	Behavioural change campaign/communication
B2B	Business to Business
CCA	Clean Cooking Alliance
CSO	Civil society organisation
EnDev	Energising Development
EU	European Union
GBV	Gender based violence
GoB	Government of Burundi
HH	Household
HQs	Headquarters
HTC	High tier cooking
ICS	Improved cook stove
LA	Local authority
M	Men
MFI	Micro-finance institution
MINHEM	Ministry of Hydrocarbons, Energy and Mines
MSE	Micro and small enterprise
MSME	Micro, small and medium enterprise
NGO	Non-governmental organisation
OAF	One Acre Fund (NGO)
PoS	Point of sale
PU	Productive Use
SI	Social Institution
TA	Technical assistance
ToC	Theory of change
VSLA	Village savings and loan association
WB	World Bank
WFP	World Food Program

Summary and key data

Promoted technologies		Improved cookstoves (ICS)
Type of Energy		Biomass
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Burundi proposes to continue to scale-up vertically and horizontally the current EnDev market driven approach towards the promotion of a sustainable market for ICS primarily targeting vulnerable HHs in rural areas. In order to complete the EnDev intervention in the clean cooking sector, a component for urban areas and a component for PU (and SI) stoves will be added⁵. As the WB HHs energy access project is just being started-up, strategy revision to synergize with the WB instruments and include carbon finance is likely.</p> <p>Training, BDS + Partnerships and alliances</p> <ul style="list-style-type: none"> • Increasing number, assets and skills of local producers through technical and business management training and coaching, supporting productivity improvement in partnership with WB • Enhancing distribution channels and productive use (restaurants) through TA on model development, marketing and sales • Increasing EnDev presence in urban areas by introducing a new ICS model. Possible scale-up in collaboration with WB and/or carbon finance • Further alliances with actors such as WB, EU Del, Enabel, FAO, and NGOs, ground preparation for WB funds to scale up the sector <p>Evidence, learning transfer, innovation</p> <ul style="list-style-type: none"> • Increasing awareness through demand activation initiatives and behaviour change campaigns especially stimulating the perception of ICS convenience • Addressing gender barriers to improve women ability to participate in the sector <p>Access to finance</p> <ul style="list-style-type: none"> • Promoting ICSs affordability through sales increase (economies of scale) and efficiencies promotion and through access to finance leaning on existing initiatives <p>Policy advice and capacity development</p> <ul style="list-style-type: none"> • Enabling environment through TA to government, local authorities and through coordinated activities with the sector's main donors (EU, WB) 	
Programming period	01.07.2023 – 31.12.2025	Indicative core budget EUR 753,103
Higher tier cooking (HTC)		Leave no one behind (LNOB+)

⁵ As far as possible with given budget.

Approx. thematic budget shares	9%	73%
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Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	145,500 people		116,400	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for productive use / income generation	146 MSMEs			e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>According to a study realized by the World Bank in 2020: access to electricity and clean cooking technologies in Burundi is extremely low (only 9% of Burundians have access to electricity nationwide but the rate reached 2% in some provinces). Approximately 90% of rural households (including rural villages and small cities outside Bujumbura Mairie) rely on traditional three-stone stoves, while almost 99% of households use solid fuels as the primary fuel for cooking. In the last four years, approximately 100.000 to 120.000 improved cook stoves have been distributed to households by programs funded by EnDev, EU and WFP. The total penetration of quality-verified ICSs is estimated at less than 5% of the population.</p> <p>An estimated 71.7% of the population lives below the severe poverty line of US\$ 1.90 per day⁶, a percentage that exceeds 90% outside Bujumbura city, so purchasing power for improved cook stoves is very limited. The political crisis of 2015, the persistent legal and fiscal restrictions and the foreign exchange difficulties make imports of higher tier mass production stoves, solar and electric products, very challenging. A widespread availability of high-quality clay and an abundance of local brick and tile makers provides opportunities for local production of affordable improved ceramic cook stoves. The overarching objective is to support the vulnerable and poor populations of Burundi to enable environment support for clean cooking. The most popular ICS is, by far, the Biikigiti (Matawi) clay stove which has a market price of around €2,00 and is produced by 36 active local producers/artisans (only 8 of them produce more than 100 ICSs per month) trained and supported by EnDev. The Biikigiti saves at least 50% firewood and 30% charcoal vs baseline.</p> <p>The government committed itself to expand the population's access to modern energy services. Both, the Burundi's Vision 2025 and the 2011 Energy Policy Letter emphasise that energy access is a key national priority and generically prioritize capacity building, production, and dissemination of ICS. EnDev greatly improved the relationship</p>
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⁶ Burundi Market Assessment for Off Grid Solar and Improved Cooking Technologies for Households - The World Bank, May 2020

	with the GoB since AVSI started implementation in mid-2021, and it is recognised as the leading project in clean cooking for HHs. EnDev is designing a partnership with WB program to promote the BIKIGITI stove and producers in the WB Nkyariza Soleil project which starts implementation in 2023. AVSI/EnDev are also recognized as leading partner in clean cooking by EU in Burundi.
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>The ICS market is still globally in a pioneering phase. The main barriers to ICSs diffusion can be resumed as follows:</p> <ul style="list-style-type: none"> • Limited entrepreneurial and business management skills (Availability); • Poor profit margins granted by current ICSs market (Availability/ Business sustainability) • Very limited access to credit (Affordability); • Arduous and expensive goods' transportation (Availability) • Behaviour change resistance due to traditional cooking habits, uninformed risks and benefits evaluation, availability of free firewood, lack of awareness and low education levels (Acceptability and Awareness); • Very limited purchasing power and savings attitude by low income HHs (Affordability). <p>EnDev activities will bring about the following transformations:</p> <p>Market development The intervention will continue to sustainably increase ICSs availability, awareness, affordability, acceptability and convenience by improving and disseminating technical skills for ICSs production and sales, among producers and distributors (private companies). On consumers' side demand activation activities will permanently increase consumers' awareness and purchasing willingness vis-à-vis ICSs. Supply and demand focuses will finally lead to the creation of a growing replacement</p> <p>Economic development The increased ICSs production and distribution require new human capacitation, raw materials, services and equipment contributing directly to the local economic development especially among the poorest of the poor.⁷ The strengthened ICSs value chain particularly within Burundi rural areas (all provinces excluded Bujumbura Mairie) will generate new jobs also for women and youths without qualification. The project will add a new PUE component about commercialization of bigger stoves for restaurants.</p> <p>Social development The increased adoption of ICS by HHs will lead to social development in relation to health, household gender related issues (reduced time in cooking and collecting of fuel wood, less fuel expense). Systematic</p>

⁷ Please recall from the Country Situation section that more than 90% of the population outside of Bujumbura city lives below the severe poverty line of US\$ 1.90 per day.

	<p>involvement for social empowerment of women and women’s groups in ICS related activities (production, distribution, promotion and sales).</p> <p>Poverty alleviation ICS adoption will enable households to save at least 40% of the cooking fuel per month. ICS will also create economic and employment opportunities along the value chain. The project will enrol especially doubly discriminated LNOB+ poverty groups such as poor women, unemployed youths and ethnic discriminated groups (Batwa).</p>
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Cooking sector: Component 2.1 – Clean cooking for rural households

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>Considering the very limited budget available, the massive success of the ongoing strategy, EnDev priorities and the persistent vulnerability of the country, EnDev will continue to focus on the poorest of the poor target group in Component 2.1 through the following main specific interventions: promotion of a locally produced and fully affordable ICS (low tier, for firewood, only in clay); behavioural change campaigns and sales promotion marketplaces, community radio, etc.) conceived to be implemented in rural areas, i.e. all provinces excluded Bujumbura Mairie.</p> <p>All EnDev targeted HHs living in Burundi rural areas can definitively be considered as members of the “poorest of the poor” LNOB+ target group. In fact, according to WB, Burundi is the poorest country in the world, with its GDP of 221,50 (current) USD per capita in 2021 (774,50 USD, PPP => 2,12 USD per capita per day, PPP). ISTEERU⁸ data confirms that the richest province outside Bujumbura Mairie (i.e. all the rural areas targeted by this component) holds an average annual revenue per capita/day of 0,74 USD PPP. Moreover, according to the study realized by AVSI⁹ in 2020 in Northern rural areas (the poorest provinces and the ones where EnDev is mainly operating at the moment), the average annual revenue per capita per day is 0,41 USD per day, PPP: far below the extreme poverty line set by the World Bank. Nevertheless, since the mentioned study also shows that 3,8% of the rural population holds a GDP per capita/day/PPP above 2,15 USD PPP and considering that we cannot exclude that one of them (although not targeted by our specific intervention below) buys an ICS promoted by EnDev, we (very) prudentially consider as destined to LNOB+ beneficiaries, “only” 80% of the ICSs sold in rural areas.</p> <p>Support to producers/supply side Currently EnDev program is supporting 36 workshops of BIKIGITI stove in rural areas which produced more than 40.000 stoves in the last year. Given the target of having at least three (3) producers for each province, EnDev will provide (10) existing and (18) new producers with adequate technology and skills to produce cost-effective and quality Biikigiti stove.</p>
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⁸ Institut de Statistiques et d’Etudes Economiques du Burundi - *Enquête Intégrée sur les Conditions de Vie des Ménages au Burundi* (EICVMB, 2019-2020)

⁹ AVSI, baseline study realized for the project UMUCO, financed by the UE, 2020

This activity will be implemented accordingly with EnDev BDS principles and will include: (performance based) supports for the procurement of quality equipment and tools; (performance based = delivered upon achievement of established quantitative production or sales targets and including special rewards or conditions for companies that employ women or are led by women) support for building or improving production facilities; TA for ICS quality production improvement, standardization, Biikigiti labelling and quality system control through a randomized periodical test of Biikigiti stove specifications per each producers; TA for production process re-organization and costs saving interventions; technical training for Biikigiti stove production; training on soft skills, financial literature and basic business management, support for building or improving production facilities; ICS; TA (coaching) for business plan elaboration and monitoring.

Support to demand side

Awareness raising campaigns on ICSs/clean cooking benefits and behaviour change promotion. This activity will be shaped by the results of the Consumer behaviour assessment that has been done in the previous programming cycle (and on the ongoing multi-country behaviour change study run by AVSI). As gender plays a significant role in the adoption of ICSs, gender specific interventions will target both women and men and, when possible, facilitate an increased participation by women in the decision-making process.

Access to finance

Concerning consumers, EnDev will try to establish synergies and partnerships with existing programs (VSLAs and cooperatives) for microcredit and will continue to partner with the project TUBURA (implemented by One Acre Fund) which sell ICSs to farmers offering an instalment payment scheme. These sales will also contribute to the achievement of Indicator 1.2. Concerning producers, TA/BDS support will be offered to qualify for the WB grant instruments.

Enabling environment

The absence of clear national targets for clean cooking, and the lack of a policy framework or standards will be possibly tackled together with WB depending on the Ministry of Energy availability. EnDev will contribute by sharing its experience on ICSs quality standards control, value chain strengthening, behavioural change campaigns and its field knowledge. AVSI will continue to organize at least one annual conference about clean cooking in partnership with MINHEM for the promotion of improved cookstoves, advocacy and coordination activities in the field of clean cooking.

LNOB+ focus (beyond extreme poverty)

Other activities targeting specific other LNOB+ groups within the poorest-of-the-poor population:

- The proposal intends to identify some **ethnically discriminated groups** in Burundi (e.g. Batwa) to train and assist them in the creation of production workshops and marketing of improved stoves. At least 5 workshops out of the 18 will be created in Batwa communities.

	<ul style="list-style-type: none"> • Specific supports will be granted to increase the involvement of poor women in the whole value chain (e.g. addressing mobility and childcare during training, giving priority to women-led enterprises or to the enterprises that employ the highest percentage of women, in case of start-up support to a new Biikigiti stove producer). At least 7 workshops out of the 18 that will be created will be led or co-led by women. The project intends to train also disadvantaged and unemployed youth (60% of women and 40% of men). They will be trained in the production and/or marketing of improved stoves. After the training, they will be accompanied to be hired in the production workshops or to have a minimum capital to become sellers of improved cooking stoves, or to create their own production workshops. • AVSI will start collaboration with organizations that work for the well-being of refugees in order to promote the entrepreneurship among them through the production and sale of improved stoves. The project intends to train groups who wish to do so in the production and sale of ICS and support them to have a basic capital and/or the necessary tools to begin this activity.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation with WB EnDev will support (TA) producers and/or distributors at gaining access to the funds of WB project Nyakiriza Soleil. The activity will include (i) develop a partnership between EnDev and Bamboo CP, the company that is managing Soleil grant fund (the agreement will also include the criteria for beneficiaries' attribution; (ii) support EnDev producers at conceiving the projects to be submitted to WB/Bamboo in order to be selected; (iii) follow up the project implementation in order to achieve the expected results. This partnership may allow some EnDev producers to upgrade their business towards higher quality and quantity production. Investments that would not be feasible through the current very limited EnDev budget.</p> <p>Coordination with other AVSI implemented projects EnDev will support ICSs dissemination for beneficiaries of others project implemented by AVSI: DSP¹⁰, ENTREF¹¹ and VBG¹².</p> <p>Cooperation with other actors (EUD, Enabel, NGOs, Foundations) EnDev will i) coordinate ICSs producers to timely deliver ICSs to OAF farmers who pay in instalments (consumers low purchase power barrier); ii) continue to disseminate BIKIGITI in local organizations supported by ENABEL (TA to ENABEL field officers for demand activation and behavioural change activities) to address lack of awareness and behavioural change resistance; iii) promote ICSs diffusion in refugees' camps in synergy with AVSI project VFE¹³ to address all the barriers for LNOB+ group; iv) continue to collaborate (TA) with EU (UMUCO project) in supporting producers and behavioural change activities and sharing market intelligence to address all the barriers for LNOB+ group leveraging EnDev limited budget.</p>

¹⁰ Distance support program

¹¹ Female entrepreneurship

¹² Fight against gender-based violence program

¹³ Project *Lutte contre les Violences faites aux Femmes et aux Enfants* (VFE) – Financed by EU and led by Terres des Hommes

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way considering the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial Developing and supporting existing or new profit-oriented players assets and skills towards a sustained increase in their sales and profits.</p> <p>Institutional The GoB, and MINHEM, will be supported, possibly in partnership with WB and EU, on quality standard definitions and control, in terms of elaboration of a national strategy. If possible, EnDev will train government staff of ICS production, test and marketing.</p> <p>Ecological Promotion of ICS that significantly save cooking fuel, reduce GHGs emissions and limit deforestation. Producers will use raw material that is locally available. EnDev will promote a sustainable clay provision.</p> <p>Technological ICS is widely accepted by consumers. BCC and distributors training will promote a safe, efficient and sustained use of ICS.</p> <p>Social All the activities within tis component are designed to target the poorest of the poor. Awareness raising/ BCC activities are designed in conjunction with communities/consumers and in line with local culture and habits. A special focus will be paid to disincentive and stop child labour.</p> <p>Exit / handover strategy Activities implementation existing or new stove producers and distributors for the creation of a sustainable market. The players will remain beyond the project with a consumer centred approach targeting its permanent behaviour change toward cleaner cooking solutions and habits. Of course, some reduction is sales quantities should be expected but their business sustainability will not be affected.</p>																
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>136,260</td> <td></td> <td>116,400</td> <td>257,815</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Consumer finance, instalment payments for farmers in cooperation with other programmes (Tubura from OAF)</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 3</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	136,260		116,400	257,815	Outputs	Applicable	Details	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	Consumer finance, instalment payments for farmers in cooperation with other programmes (Tubura from OAF)
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<p>type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Additional quantitative indicators</p>	<p><i>Additional 07/2023 – 12/2025</i></p>	<p><i>Of which HTC</i></p>	<p><i>Of which LNOB+</i></p>	<p><i>Total by 12/2025</i></p>
	New producers:	18 (7 led by women)	0	18	49
	Producers selling more than 100 ICSs per month:	8	0	8	17
	ICSs sold:	113.550 (45,420 adjusted)	0	90,840 (38,800 adjusted)	104,357 (70,580 + 33,557 historical adjusted)
	N. of people trained in ICSs production or distribution:	100 (40% women)	0	100 (40% women)	357 (148 women)
	Points of Sale activated:	36		36	386
	<p>Narrative</p> <p>Catalyst to WB: EnDev has been fundamental in the start-up of a sustainable ICS market in rural areas. The new WB Project will build on this success and in cooperation with EnDev is supposed to reach an additional 300,000 households by 2026. The WB intervention will be widely based on EnDev’s information and materials and will most probably cooperate almost exclusively with EnDev supported producers. Moreover, EnDev will assist producers and distributors to qualify for WB support in order to upgrade further their engagement in the ICS supply chain.</p> <p>Sector Leadership and Alignment for Clean Cooking: The GOB will be supported to develop clean cooking policy and regulation, in coordination with the WB and other sector stakeholders. EnDev is leading the sector coordination, which includes actors like WFP, EU, Enable and other international and local agencies.</p> <p>Consumer Behaviour: 2021 project data show an already very high awareness of ICS benefits in intervention zones. Awareness and willingness to pay will be expanded further.</p>				
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p>	<p>Approx. 73% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input type="checkbox"/> HTC: 0%</p> <p><input checked="" type="checkbox"/> LNOB+: 100% vs Component 2.1 budget; 100% vs Overall LNOB+ budget; 73% vs Overall budget proposal</p>				

Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind	
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<h2 style="text-align: center;">Cooking sector: Component 2.2 – Clean cooking access for urban households and PUE</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>Given the growing attention to the clean cooking sector in the Bujumbura Marie area, the relatively higher purchasing power and the lower presence of EnDev in urban areas, AVSI will assess and implement a new strategy for urban areas targeting realistic locally produced ICS and/or HTC solutions. EnDev will also explore the implementation of a carbon credit project for scaling up the implementation of this new urban component. The project also plans to introduce institutional stoves for restaurants and will start with market tests in 2023.</p> <p>Based on the approach described above, the following key activities will be implemented:</p> <p>ICS/HTC Market assessment in urban areas and carbon credits feasibility study</p> <p>The study will</p> <ol style="list-style-type: none"> (i) create a baseline for cooking habits for urban areas (Bujumbura, Gitega, Ngozi, Rumonge, Kayanza); (ii) identify the best (available, acceptable, affordable) ICS solution for urban areas among the ones already produced in Burundi and/or among models already successfully employed in others EnDev countries and whose production and distribution can be immediately replicated in Burundi. (The stoves will be tested according EnDev standards before market testing.) (iii) develop a marketing strategy for urban areas tailored to the chosen “urban” ICS; (iv) highlight gender aspects and modalities to integrate them within the component’s implementation and especially into the awareness raising and behaviour change initiatives for urban areas (v) assess HTC solutions to be possibly implemented in the medium term in urban areas. (vi) include a feasibility analysis on the implementation of carbon finance to develop and scale ICS (and later HTC) production and/or dissemination in urban areas of Burundi, with Gold Standard or equivalent certification. (vii) include options for LNOB+ and roll out for all (incl. aspects regarding gender, etc.) and specify between different target groups <p>The project may be able to conduct the study for urban areas and carbon credits in partnership with the EU Delegation, which is interested in researching new and better ICSs for Burundi and might fund EnDev to do this.</p>

Support to supply side

The proposal will support at least 2 ICS entrepreneurs/cooperatives to produce and sell the selected urban charcoal stoves. The priority will be given to existing companies with a focus on workshops already enrolled in EnDev project. This activity will include: performance-based supports (Ref. to Component 2.1 that include special rewards for companies that employ women or are led by women) for the procurement of quality equipment and tools; performance based support for building or improving production/distribution facilities; ICS production improvement and technical training, standardization, labelling and quality system control through a randomized periodical test of stove specifications per each producers; production process re-organization and costs saving interventions; technical training for stove production; training on soft skills, financial literature and basic business management; TA (coaching) for business plan elaboration and monitoring. The support will be offered in synergy to WB Soleil instruments.

In case the market assessment for urban areas will provide solid evidence for the feasibility of a carbon financed project, a third-party investor (no-objection by EnDev needed) will be approached to fund the required activities toward the certification, verification and issuances of carbon credits under an international standard (Gold Std, CDM, Verra). Net revenues from carbon credits sales will be invested to scale ICS production and BCC work in urban areas and, possibly, to pilot the distribution of a suitable HTC solution with possible consumers/demand subsidies. A specific top-up intervention proposal will be designed and submitted to EnDev for approval.

HTC Carbon Financed Cooking Pilot

In case the market assessment for urban areas will also provide solid evidence for the feasibility of one or more HTC solutions intervention, a pilot for the identified HTC solution(s) will be implemented. The cost for this top-up intervention could be covered by voluntary carbon market sales, and/or by additional EnDev funding (top-up), and/or by other donors (*Soleil* project WB, EU, etc.).

A specific top-up intervention proposal will be designed and submitted to EnDev for approval.

Support to demand side

A marketing and behavioural change campaign for urban areas will be developed especially targeting women. The size of the marketing campaign will change accordingly to whether or not AVSI and partners will be able to register a carbon finance project. In case, a deeper focus will be given to all demand activation initiatives (advertising, branding and marketing, subsidies) and to facilitate access to credit for the most vulnerable HHs and especially for women lead families. Possibly, net revenues from carbon credits sales will be also invested to support demand activation, (affordability and behavioural change activities) towards the pilot distribution of the selected HTC.

Cookstoves for Productive Use

Producers will be supported (TA) in producing and distributing ICSs for restaurants and, possibly, also for SI although WFP has the

	<p>“monopoly” for schools. For the moment, EnDev is testing and currently selecting a suitable ICS model. After this step, 2 workshops will be trained to produce bigger ICS for restaurants and supported for the procurement of equipment (tools) and for marketing activities. The project will also design new advertising spots and brochures and will conduct awareness raising activities to stimulate the demand.</p> <p>LNOB+ focus Engaging poor women and disadvantaged youth in ICS value chains: EnDev project will sensitize the new ICSs workshops at engaging women and unemployed youth in their activities. EnDev will set up a scheme of support based on the share of LNOB+ people that will be enrolled by each workshop.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Cooperation with WB EnDev will support producers at gaining access to the funds of WB project Nkiariza Soleil. The activity will be carried out as it has been described in section 2.1 but targeting urban areas.</p> <p>Carbon finance co-funding Based on the urban area assessment, AVSI will collaborate with third-party investor interested in the carbon credit market, in order to get additional funds to scale up the urban component. Revenues will be invested to i) increase the number of workshops to support ii) scale up the marketing campaign iii) pilot the distribution of the most suitable HTC solution iv) cover for carbon credits registration costs.</p> <p>Coordination with other AVSI implemented programs EnDev will support ICS dissemination for beneficiaries of other projects implemented by AVSI: DSP¹⁴, ENTREF¹⁵ and VBG¹⁶.</p> <p>Cooperation with the EU Delegation Co-funding for the urban area ICS assessment (low market intelligence barriers) will be sought from the EU Delegation. AVSI may be able to cooperate with other EU funded projects in their next phase starting 2024, which will focus on inclusive growth and human development on clean cooking in urban areas</p> <p>Cooperation with the GOB Local authorities and the MINHEM will be engaged to support the market building of ICS for urban areas and will be supported in defining a strategy for cooking in urban areas, in collaboration with the WB and EUD.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way considering the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case 	<p>Financial Developing and supporting existing or new profit-oriented players assets and skills towards an increase in their sales and profits. The knowledge created among providers and consumers will persist and generate its effects beyond the end of the programme.</p> <p>Institutional</p>

¹⁴ Distance Support Program

¹⁵ Female entrepreneurship

¹⁶ Fight against gender-based violence program

<p>in the absence of the project, or sustained alternative funding?</p> <ul style="list-style-type: none"> • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>The GoB, and especially MINHEM, will be supported, possibly in partnership with WB and EU, concerning quality standard definitions and control, and in terms of elaboration of a national strategy.</p> <p>Ecological The project will promote cooking solutions that significantly save cooking fuel, reduce GHGs emissions and limit deforestation. Locally produced ICS have no negative environmental impacts from production. Advice will be given for efficient use to minimize fuel used for firing the ceramic liners.</p> <p>Technological The technology chosen by the proposal will be suitable for producers, consumers, and other stakeholders. BCC and distributors training will promote a safe, efficient and sustained use of the cooking device.</p> <p>Social Awareness raising/ BCC activities are designed in conjunction with communities/consumers and if in line with local culture and habits. A special focus will be paid to disincentive and stop child labour and promote women labour through specific technical training.</p> <p>Exit / handover strategy The project will implement all the activities through the best ICS/HTC solution for the creation of a sustainable market. The players will be the natural beneficiary of the programme outcomes that shall remain beyond the project with a consumer centred approach targeting its permanent behaviour change toward cleaner cooking solutions and habits.</p>																														
<p>Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p>	<p>Cooking sector: Component 2.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>9,240</td> <td></td> <td></td> <td>12,360</td> </tr> <tr> <td>PU: Access to cooking</td> <td>146</td> <td></td> <td></td> <td>146</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.2 – Table 2 N/A</p> <p>Cooking sector: Component 2.2 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>New producers</td> <td>2 producers of ICS in urban areas 2 existing producers of ICS for PU</td> <td></td> <td></td> <td>2+2</td> </tr> <tr> <td>Producers selling more than 100 ICSs per month</td> <td>2</td> <td></td> <td></td> <td>2</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	9,240			12,360	PU: Access to cooking	146			146	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	New producers	2 producers of ICS in urban areas 2 existing producers of ICS for PU			2+2	Producers selling more than 100 ICSs per month	2			2
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<p>1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p> <p>2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>ICSs sold</p>	<p>650 ICS (325 adjusted) for PU 7,700 ICS in urban areas (3,080 adjusted ICS sold), of these 4500 ICS (1800 adjusted) new charcoal stoves for urban areas only.</p>			<p>650 ICS (325 adjusted) for PU 10,300 ICS in urban areas (4,120 adjusted ICS sold)</p>
	<p>N. of people trained in ICSs production or distribution</p>	<p>10 (50% women)</p>			<p>10</p>
	<p>Points of Sale activated</p>	<p>10</p>			<p>10</p>
	<p>Narrative</p> <p>The pioneering role of EnDev in rural areas will be repeated for urban areas in Burundi. The improved capacities and awareness of stakeholders and consumers will facilitate other players to enter the market, and for consumers to choose cooking technology wisely. EnDev plays a key role in advising new market entrants and interested institutional donors.</p> <p>If EnDev pioneers the first voluntary carbon market project for improved stoves with Gold Standard certification or equivalent, it will also set a precedent for the sustainable design of VCM stove projects in Burundi. Opposite, the risk is that other interested private companies will invest huge amount of money simply to produce carbon credits in total disregard to the establishment of a sustainable clean cooking markets (I.e. stoves distributed for free or highly subsidized).</p>				
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 27% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 9% vs the Overall budget proposal; 33% vs Component 2.2 budget; 100% vs HTC overall budget</p> <p><input type="checkbox"/> LNOB+: 0%</p>				

Safeguards and risks

Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?

Main project risks:

1. Consumers' dissatisfaction and protests because of the short lifespan of the promoted ICS due to (a) poor quality or (b) to misuse
2. Fire and accidents due to the misuse of the promoted clean cooking solutions
3. Increase of alcohol addiction by families that can buy more alcohol thanks to ICS/HTC fuel savings
4. Supported producers employ child labour

Mitigation actions:

1. Periodical quality control and technical training to producers; (b) massive and comprehensive behavioural change campaign including maintenance and safe use training and brochures distribution
2. Massive and comprehensive behavioural change campaign including maintenance and safe use training and brochures distribution
3. Behavioural change activities also include women empowerment and life skills training (the value of the person)
4. A special focus will be paid to disincentive and stop child labour

Budget

Please indicate your requested core budget using the table "Budget overview".

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	753,103	
	Total estimated budget	753,103	

5. Cambodia

Acronyms

BCC	Behaviour Change Communication
CCWC	Commune Councils for Women and Children
GESI	Gender and Social Inclusion
GHG	Greenhouse gas emissions
GNP	Gross domestic product
HH	Households
HTC	Higher tier cooking
LPG	Liquified Petroleum Gas
LNOB	Leave No One Behind
MECS	Modern Energy Cooking Services programme
MME	Ministry of Mines and Energy in Cambodia
MoE	Ministry of Environment in Cambodia
MoU	Memorandum of Understanding
MTF	Multi-Tier-Framework
PUE	Productive Use of Energy
RBF	Results-based Financing
SFV	Smoke Free Village
SEE-HTCC	Strengthening the Entrepreneurial Ecosystem for Higher Tier Clean Cooking
USD	US Dollar
WHO	World Health Organization

Summary and key data

Promoted technologies	 	Productive use, eCooking
Type of Energy		Grid
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>This programme period builds further on the encouraging results of a human-centred, behavioural-change communication (BCC) approach, branded as the Smoke Free Villages (SFV) initiative. This innovative approach started in Cambodia in 2020 and focusses on a shift to electric cooking. So far 7,000 electric stoves have been sold among 40,000 HH.</p> <p>Over this Programming period, 15,000 cookstoves will be bought by the SFV households where EnDev is already active (since 2020) and by adding more 30 villages in 2023, with 5,000 new HH.</p> <p>SFV is executed in partnership with 25 Commune Councils for Women and Children (CCWC) that provide BCC services. This triggers demand for clean cooking, leading to sales of clean stoves by households. Stoves are sold from local shops, mainly women owned. Advanced Biomass Stoves and innovative electric cookers from social enterprises are also promoted technologies but in much smaller numbers than the conventional e cookers.</p> <p>Therefore, towards 2025 the proposed strategy is as follows:</p> <ol style="list-style-type: none"> 0. Continue SFV in existing villages, improve BCC methods to meet changing needs and maximize opportunities for clean cooking. 1. Add 30 additional villages (total 230) to create a critical mass in focus areas that help district governments to take ownership. 2. Facilitate governmental involvement through capacity-building building activities and peer exchanges. 3. LNOB: as a new initiative, a pilot will be implemented with end-user subsidy for poor households unable to afford high-tier cooking. 4. Productive Use Energy: as a new addition, local restaurants in and around SFV will be targeted to change to clean cooking. 5. Evidence-based advocacy: publications, scientific articles, and presentations will share lessons and knowledge. 6. Partnerships: “SEE-HTCC” programme supports supply chain development; World Bank Efficiency in Cooking Sector enabling environment. 	
Programming period	01.07.2023 - 31.12.2025	Indicative core budget EUR 1,424,200
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)
Approx. thematic budget shares	100%	20%

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	57,078 people	57,078 people	11,340 people	Total number of villagers (200,000 people) are exposed to BCC for clean cooking. 20% is poor.
Electricity and/or cooking / thermal energy for productive use / income generation	18	18	-	Pilot with 20 restaurants to test PUE, replacing biomass with electricity stoves.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Cambodia has a population of 15.5 million with a land surface of 176,000 km². The GNP per capita is 1,530 USD, it is a lower middle-income country. 20% of households in the targeted villages are poor. These are households labelled as poor in the official registry of the government.</p> <p>Cooking fuel usage in rural Cambodia is dominated by traditional fuels, 79% of rural households using primarily firewood, 8% charcoal, 11% LPG, and electricity 2%. Nationwide, 2 million out of 3.6 million HH rely primarily on biomass. Electricity access is on the rise, 40% of the population had access to electricity in 2009 against 93% in 2019.</p> <p>Clean cooking was, is, and will remain highly relevant in Cambodia on different levels. According to WHO, smoke from cooking attributes to 14,729 premature deaths or 15% of total annual deaths. Cooking on wood emits ~1 tCO₂e/y against ~0.2 tCO₂e/y for electricity. Firewood takes 20% more time and drudgery, depressing the livelihoods of women.</p> <p>The government recognizes cooking energy in its NDC as well as other policies, giving clean cooking a basis for institutionalization.</p> <p>Different programmes in Cambodia address cooking energy and work in in synergy with EnDev: SEE HTCC project by EnDev and the Efficiency in the Cooking Energy Sector by the World Bank. More details follow.</p> <p>Social enterprises like ATEC, ACE, EnergyLab, and Ecosun are trailblazing innovative concepts for clean cooking. The vast majority of the clean cookstoves supply chain are importers (Thailand, China and Vietnam) and small local shops selling rice cookers, water kettles and plates.</p> <p>Regarding low-tier cooking, in previous years EnDev supported the association for ceramic cookstove producers. This led to new carbon projects with CQC, and with a spill over to Laos. Ceramic stoves are however not part of SFV or this programme.</p> <p>1. EnDev in Cambodia enhances access to clean cooking (SDG 7) by Electric, High Tier Cooking and Advanced Biomass Cookstoves. Its overarching goal is to energize lives, jobs, and the environment, by changing cooking norms in rural villages.</p>
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	<p>2. On the national level, SNV works with the Ministry of Mines and Energy (MME) to develop clean cooking energy policies and define areas for public investments. This falls under a project with the World Bank. The Ministry of Environment (MoE) supports cooking energy initiatives as a measure to reduce GHG. SNV collaborates with the MoE on climate policies and monitoring frameworks.</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file</p>	<p>The current state of the market</p> <p>Conditions for clean cooking are favourable in Cambodia: rural grid extension reaches most households and gives the opportunity to replace firewood (currently the most dominant source of fuel) with electric cooking. Moreover, common dishes (rice, soup, vegetables, and fish) can be prepared, and rural communities are highly receptive to adoption of a modern lifestyle.</p> <p>Clean cookstoves are available on local markets and small shops, with a growing number of options. The supply responds to the demand, therefore with more customers asking for clean cooking appliances, there will more orders towards wholesalers to fill the shops. Most popular are cookstoves are rice cookers, water kettles, grill, ovens. These are sold in the range of 20 to 70 USD. Customers are women, only 10% is male and decisions on cookstove purchases are made by the couple.</p> <p>Key barriers</p> <p>A Key barrier for the clean cookstoves market to grow, is the low demand, with households only partly aware of the disadvantages of traditional cooking, perceptions about costs, perceived operational difficulties, and safety concerns.</p> <p>Alleviating barriers</p> <p>To alleviate the demand-side barrier, EnDev provides BCC on village level (SFV) and will continue to do so in collaboration with village authorities, local schools, and religious centres.</p> <p>By applying appropriate communication tools and methods, households move to clean cooking that incurs demand and purchases of clean stoves (7,000 so far). Noteworthy is the pivotal role of women who have a strong say in household expenses, a high representation in the supply chain and by involvement of the Commune Council for Women and Children.</p> <p>The EnDev programming will also capitalize on the lessons learned that behavioural change is realised only in a concerted effort among stakeholders, so that the message comes from different angels and are send out on different occasions. This forms a potent mix that drives the clean cooking transition and establishes new cooking norms.</p> <p>SFV will continue to pursue poverty alleviation by offering tailor made BCC services (for instance door to door visits), to get LNOB exposed to information about clean cooking. The monitoring system disaggregates poor, women-led, and households with people living with disabilities, so that EnDev keeps track of inclusion. The bar diagram below, presenting the prevalence of households with at least one clean cookstove, shows</p>

based on the respective template.

LNOB are included. However, a pilot is justified to evaluate if targeted subsidies could help to reach the remaining LNOB households. The monitoring of clean cooking behaviours will therefore be disaggregated among three LNOB groups:

- registered poor households,
- women led households, and
- people living with disabilities.

The bar diagram below shows how the prevalence of clean cookstoves grows over time and among these groups. The first table shows all HH together, and the subsequent diagrams shows the LNOB three LNOB groups. The progression among LNOB shows as anticipated a slower acquisition curve,

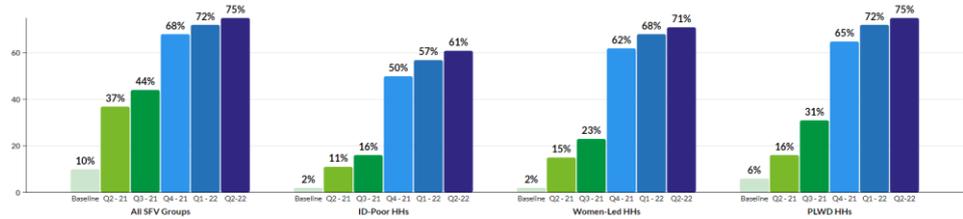


Figure 2 Growth of clean cookstoves prevalence at SFV households, (as percentage against the total households, total and per LNOB group).

The Smoke Free Village approach holds to a highly inclusive community-based approach that effectively involves LNOB. Considering the strong focus on LNOB, LNOB+ is therefore not significant different from earlier years.

Poor households will be continued to be monitored to ensure inclusiveness.

The **supply side** of clean cookstoves in Cambodia consist of two segments. The first segment is represented by innovative social enterprises that are still in early market stages (pioneering stage per EAMD scorecard). These are nation-wide coverage but are not yet very active in SFV and are experimenting with innovative approaches and technologies. The other segment is the supply of importers, wholesalers and small women-owned shops selling rice cookers, water kettles and others, in rural areas. Their barriers are limitations in business skills, marketing and access to finance to expand their business and to provide end-user credit (which is currently provided in some cases by half of the shops).

The EnDev project SEE HTCC (2022-2025) works in synergy as it provides supply chain development services like coaching, RBF, innovation grants and access to finance. The SEE HTCC will however support the entire province to cover a larger demand volume, and to be able to support the entire value chain.

The enabling environment concerns policies and governance frameworks that are more stimulating for clean cooking. SNV works with the World Bank and the Ministry of Mines and Energy to develop these policies and to draft plans to enact clean cooking in Cambodia. As of now, clean cooking falls between responsibilities of at least 5 Ministries, including Energy, Environment, Health, Women Affairs, and Industries.

	<p>Provincial Working Groups form an important mechanism to bolster collaboration among these ministries to make clean cooking topical in policies. Top level policies are needed to give legal access to state budget allocation, and for subnational levels to receive the mandate to support clean cooking activities.</p> <p>Whereas EnDev will provide the village-based evidence and on the way forward, the SEE HTCC supports governance mainly to aim for better enterprise development opportunities. An MoU between SNV and the MME, which formalized collaboration, is expected to be signed in 2023.</p>
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Cooking sector: Component 2.1 – Clean Cooking

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>Experiences of EnDev in Cambodia (2016-2020) in supply chain development through RBF and other mechanisms, created new businesses and attracted investment, but still left a gap with regards to actual usage of clean cookstoves. This hampered impact and reduced effectiveness of the intervention.</p> <p>In response, SNV developed an approach to help households to better understand the importance of clean cooking first. Taking inspiration from the Community Led Total Sanitation approaches in the sanitation sector, aiming defecation free villages, the Smoke Free Village approach was launched in 2020.</p> <p>Starting off in few villages and gradually expanding in scope, SFV exceeded expectations. In 2022, EnDev published a report which showed a significant change to clean cooking behaviours after a location was “treated” with the SFV initiative. See the report here: https://endev.info/smoke-free-villages-in-rural-cambodia-a-behavioural-change-approach/.</p> <p>SFV is a market-based approach that leans on demand activation through BCC. It follows a user-centered, bottom-up approach by leaning strongly on women led, local institutes. A detailed M&E system that tracks each household, enables feedback loops that are used to adjust and improve effectiveness and to ensure LNOB inclusion.</p> <p>The graph below shows how cookstoves presence increased across 198 Smoke Free Villages (representing 42,000HH or 150,000 people) evolved Q42020 - Q32022 when experiencing the SFV initiative.</p>
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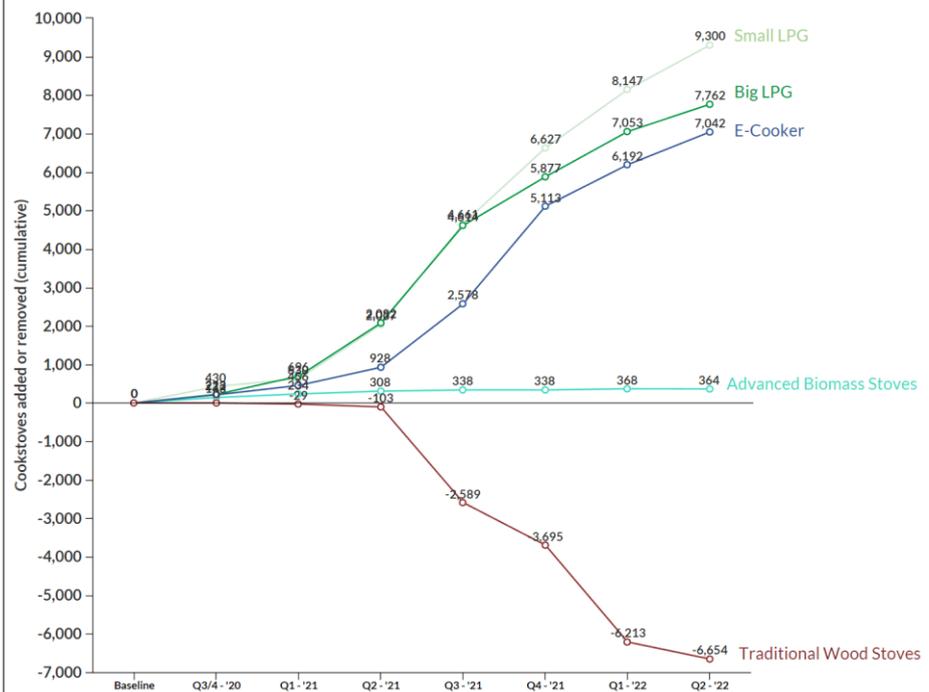


Figure 3 Cookstove procurement growth by HH in SFV. (LPG and propane (small LPG) are not part of EnDev, but available in rural Cambodia.)

The resulting change in the cooking energy system is double sided, by acquisition of new clean cookstoves, as well as replacement of traditional ceramic cookstoves.

A conceptual “ladder” was established to evaluate the transformation to clean cooking. The first rung of the ladder concerns the acquisition of clean cookstoves, the second rung is about the intensity of usage, and the third rung is where firewood becomes obsolete. As soon as 85% of HH in a village have a clean cookstove, the first rung is accomplished; if 85% of HH use clean stoves as their *primary* cookstove the second rung is reached. The ultimate rung is where wood and charcoal are replaced by clean fuels for 85% of HH.

Extrapolating the trendline since 2020 towards 2025 the following targets have been set: 80% of villages would graduate to the first rung (40% 2022), 20% to the second (8% in 2022) and 10% (1% In 2022). of villages will becomes truly clean. Alongside monitoring by village leadership, external MTF evaluation methods will be employed to externally corroborate the findings, and to feed the knowledge into evidence-based advocacy and lobby activities.

Whereas in previous years the focus was on proof-of-concept (including trial, larger implementation and fine-tuning the approach), in the coming period the priority will shift more towards systems change by governmental involvement of clean cooking on (sub)national level. The envisioned development trajectory towards systems change and lasting impact by capacity building, peer training activities, showcasing of SFV, and work on a roadmap to scale, in support of Working

	<p>Groups on Provincial and District levels as mentioned earlier, Working Groups are represented by different line ministries and in Cambodia the modus operandi to address multi-disciplinary development challenges.</p> <p>There is an important role for the supply chain as well (shops and vendors) to explain the benefits of clean cooking and use that as a sales argument. The private sector will be trained to better explain to customers about the benefits of clean cooking, technical usage and safety measures. This would help to further drive cleaner cooking norms when households are going to the market and receive messages from the shop owner about clean cooking solutions that echoes the village-based BCC.</p> <p>The Programming will address LNOB+, particularly for registered poor families, for female headed households and for people living with disabilities, that are unable to afford clean cooking. The monitoring data can identify households that are left behind in the clean cooking transition.</p> <p>As a new initiative, few villages will be selected to start up a trial with a subsidy mechanism and to test how this can benefit LNOB+. Lessons will be captured and shall inform EnDev on viability, and possible scaling and replication to other countries.</p> <p>Another new feature is the inclusion of Productive Use of Energy through the involvement of local restaurants with targeted BCC application to move to electricity. This will be done under a pilot among 20 restaurants. Lessons learned will inform EnDev for possible scaling opportunities and replication.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The EnDev Programming works in synergy and close collaboration with other initiatives, many of which SNV plays a role as implementer and bridges knowledge and ideas.</p> <p>The assignment with the WB “Efficiency in the Cooking Energy Sector” (in 2022) involves the write up of a draft strategy and implementation plan. The strategy and plan are based on previous experiences of EnDev in the cookstove sector and align with the strategic direction of this proposal. An MoU between the MME and SNV is being prepared for stronger collaboration, whilst the collaboration efforts with WB bring it closer to the MTF way to evaluating the cooking energy situation.</p> <p>On subnational level, SNV signed MoUs with over 22 governmental bodies to execute SFV activities, especially the Commune Councils of Women and Children. This process is closely managed, and its lessons learned are used as an approach to scale up to District and Provincial level Working Groups on clean cooking.</p> <p>Important synergies shall be established with SEE-HTCC on supply chain development. RBF under SEE-HTCC will be implemented by starting in SFV where EnDev has a strong presence. From there onwards the RBF mechanism will be rolled out to the entire provincial area through collaboration of local supply chain actors and authorities. As such the SEE HTCC is enforcing supply while EnDev programming</p>

	<p>is focusing on demand and the project with the World Bank addresses the policy gaps in the cooking space on national level. Modern Energy Cooking Service (MECS) programme publishes valuable knowledge products with NGOs in Cambodia, and social enterprises explore innovative clean cooking technologies under MECS. MECS and IDE are trailblazing innovative concepts of electric cooking and will also take part in the Innovation Fund and RBF under SEE HTCC.</p> <p>Because of the strong analogies among development sectors, the SNV Energy team have a background in different thematic areas, energy, water and sanitation, nutrition and agriculture.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial: Electric cookstoves and electricity are purchased without financial support from EnDev. The price barriers are solved by simply choosing cheap stove models, or in some cases the shops sell on credit or sell against lower prices, at the expense of their profit margin.</p> <p>Institutional: institutionalization will be addressed by having (sub)national governments including the clean cooking agenda in their mandates. The programme, especially during later years, will provide capacity building. As a follow-on strategy after the first phase, SNV aims for institutionalization and governmental ownership, is a high priority. Already positive developments are taking place with commune authorities allocating contributions (3,000 Euro) to SFV activities. This highly positive developed needs to be scaled to provinces, and ultimately, to also get access to national budget level.</p> <p>Ecological: waste from broken electric cookstoves like rice cookers and plates are not necessarily hazardous. Even though proper solid waste management across Cambodia should be developed, this waste is not as polluting as for instance solar panels with toxic elements. As of now, few donor initiatives are putting efforts in the first stages of development of waste collection systems in rural Cambodia. These are, however, initial steps and are not effective in the short term.</p> <p>Technological: Smoke Free Village is promoting clean cooking in a brand neutral manner, as it simply allows HH to make informed choices. Villagers buy their own stove, often at the local shop. Warrantees are usually not granted, but shops show willingness to help to repair if a technical issue occurs.</p> <p>Social: Data collection of SFV is done by village authorities. It verifies participation levels disaggregated by poor, female headed, and people living with disabilities. Quarterly analysis shows in how far LNOB groups are included or lagging.</p> <p>To ensure inclusiveness, SFV are in the most underserved areas of the selected communes. Project field officers of SNV are in frequent contact with local stakeholders and able to detect unintended harm, or risks that may arise at early stages.</p> <p>Future financing will be required to intensify Smoke Free Village and get it to a national scale. This can be accomplished if done in sync</p>

	with capacity building activities that enhance governmental ability to continue SFV service on the long term.																																																
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>57,078</td> <td>57,078</td> <td>11,340</td> <td>57,078</td> </tr> <tr> <td>PU: Access to cooking</td> <td>18</td> <td>18</td> <td>0</td> <td>18</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input checked="" type="checkbox"/></td> <td>Before the intervention no information on clean cooking available, after the SFV intervention virtually all households in the villages are able to explain the basic concepts of clean cooking.</td> </tr> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td><input type="checkbox"/></td> <td>This will fall under SEE HTCC project.</td> </tr> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input type="checkbox"/></td> <td>This will fall under SEE HTCC project.</td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>Local restaurants will be involved in the outreach activities under SFV.</td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>Governmental involvement to institutionalize clean cooking under policies and regulations.</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Indicator 1:</td> <td>15,000</td> <td>15,000</td> <td>3,000</td> <td>15,000</td> </tr> <tr> <td>Indicator 2:</td> <td>20</td> <td>20</td> <td></td> <td>20</td> </tr> </tbody> </table> <p>Narrative</p> <p>The SFV approach will continue in current villages and add new villages. It addresses the household's cooking energy system. The progress will be monitored according to the SFV ladder and MTF methodology.</p> <p>The productive use energy will be piloted for 20 restaurants that at baseline use mainly biomass fuels.</p> <p>The aim is to integrate clean cooking into regular governmental outreach activities, as part of sanitation and preventive health activities.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	57,078	57,078	11,340	57,078	PU: Access to cooking	18	18	0	18	Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Before the intervention no information on clean cooking available, after the SFV intervention virtually all households in the villages are able to explain the basic concepts of clean cooking.	Indicator 1.2: +25% customers reached by fin. products	<input type="checkbox"/>	This will fall under SEE HTCC project.	Indicator 2.1: +25% market share for scalable companies	<input type="checkbox"/>	This will fall under SEE HTCC project.	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Local restaurants will be involved in the outreach activities under SFV.	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Governmental involvement to institutionalize clean cooking under policies and regulations.	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	Indicator 1:	15,000	15,000	3,000	15,000	Indicator 2:	20	20		20
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 100% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 100%</p> <p><input checked="" type="checkbox"/> LNOB+: 20%</p> <p>The programme is fully dedicated to higher tier cooking solutions, specifically electric cooking. A small share is expected to be offered through social enterprises selling forced draft gasifiers (ACE) and or innovative electric cookstoves with PayGo.</p> <p>The outreach events involve specifically LNOB groups, which make up 20% of all HH. Under SFV the poor are defined by the governmental poverty lists, and two other vulnerable groups: women led households and people living with disabilities.</p>
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Safeguards and risks	
<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Risks relate to usage of electric cooking are black outs/ brown outs, electrical shocks, and shortcuts, causing fire or electrocution. The project will therefore provide safety instructions during SFV activities and at events to minimize the risks and give information to the shops, to inform customers on proper usage. This may also give more confidence to households that stick to firewood because of the fear of electric shocks.</p> <p>On the policy level, EnDev will also support the national government on the development of standards for electric cookstoves. While all stoves are imported in Cambodia, there is no regulation that bans unsafe devices.</p> <p>LNOB groups are monitored so that adequate measures can be taken if data shows that these groups are not sufficiently part of the clean cooking transition. Measures are door to door visits, ensuring for them to receive an invitation to events and prioritizing these groups.</p>

Budget													
<p>Please indicate your requested core budget using the table "Budget overview".</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".</p>	<p>Final budget for project period incl. co-financing</p> <table border="1"> <thead> <tr> <th>#</th> <th>Donor</th> <th>EUR</th> <th>Brief description of co-financing (max. 200 characters w/o spaces)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Core-budget (c.f. quotation price above)</td> <td>1,424,200</td> <td></td> </tr> <tr> <td></td> <td>Total estimated budget</td> <td>1,424,200</td> <td></td> </tr> </tbody> </table>	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)	1	Core-budget (c.f. quotation price above)	1,424,200			Total estimated budget	1,424,200	
#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)										
1	Core-budget (c.f. quotation price above)	1,424,200											
	Total estimated budget	1,424,200											

6. Democratic Republic of the Congo

Acronyms

ACERD	Association Congolaise pour les énergies renouvelables et décentralisées (Congolese association for renewable and decentralised energies)
ANSER	Agence Nationale des Services Énergétiques en milieu Rural, (National agency for rural energy services)
AVSI	AVSI Foundation - Association of Volunteers in International Service
BCC	Behavioural change campaign/communication
B2B	Business to business
CCA	Clean cooking alliance
CSO	Civil society organisation
GBV	Gender based violence
GoDRC	Government of the Democratic Republic of Congo
HH	Household
HQ	Headquarter
HTC	Higher tier cooking
ICS	Improved cook stove
LA	Local authority
MFI	Micro-finance institution
MSME	Micro, small and medium enterprise
NGO	Non-governmental organisation
TA	Technical assistance
ToC	Theory of change
UNCDF	United Nations Capital Development Fund
VSLA	Village savings and loan association
WB	World Bank
WFP	World Food Program

Summary and key data

Promoted technologies	  	Improved cookstoves, eCooking, productive use
Type of Energy	 	Solar, biomass
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Cooking – LNOB+ and HTC Pilot</p> <p>EnDev efforts will build on 2020 to 2022 activities, approaches and lessons learnt and will be primarily concentrated on strengthening the availability, awareness, acceptability and affordability of three local ICSs models to the extremely poor populations in Kalemie, Bunia, Idjwi Island and surrounding areas (East Congo). After consolidating the approach and instruments for the local ICSs (transitional) market enhancement, EnDev will also pilot the introduction of HTC devices and feasibility of a carbon finance project.</p> <p>Interventions include:</p> <p>Training, BDS+</p> <ul style="list-style-type: none"> • Increasing number, assets and skills of local producers through performance-based support, technical and business management training and coaching • Enhancing distribution channels through TA on business model development, marketing and sales for producers and distributors <p>Affordability and Access to Finance</p> <ul style="list-style-type: none"> • Promoting ICSs affordability through value chain vertical integration, sales increase (economies of scale) and efficiencies promotion and through access to finance leaning on existing initiatives (VSLAs, women associations, MFIs) <p>Evidence, learning transfer, innovation</p> <ul style="list-style-type: none"> • Increasing awareness through demand activation initiatives and behavior change campaigns, exploring the critical role of women in demand creation • Addressing gender barriers to improve women ability to participate in the sector (trainings, access to finance) • Realization of pilot distribution + market test for HTC <p>Partnerships and alliances</p> <ul style="list-style-type: none"> • Sharing best practices with LAs, local CSOs and through coordinated activities with the sector’s main donors (UNCDF, WWF). Building partnerships with humanitarian donors and implementers (WFP, UNHCR, Humanitarian Fund, etc.) to integrate clean cooking in their interventions targeted to the most vulnerable groups. <p>PUE - Productive use of energy</p> <p>The proposed intervention aims at increasing the number of new or existing businesses and farmers on Idjwi island that use electricity productively and from renewable off-grid sources (either solar mini-grids or to stand-alone systems). Interventions include:</p> <p>Training, BDS</p>	

<p>important national partners; and main development partners working in the sector)</p> <ol style="list-style-type: none"> 2. EnDev's overarching objectives in the markets being supported 3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>DRC has no specific policy for clean cooking sector except for the targets of its National Agenda (“access for all men and women to electricity and clean cooking”). Nevertheless, focus is also growing thanks to programs and agencies as FONAREDD, UNCDF/UNDP, ACERD²¹, ARE²² and ANSER²³. DRC's NDC also identifies energy²⁴ as one of the main sectors of intervention for emissions reduction. The NDC sets a target of 3 million ICS distributed and 42.7 Mw of installed power generation capacity (solar, wind and geothermal) by 2023²⁵, which support its target for 17% emission reduction below BAU by 2030. This intervention was/is also aligned to the REDD+ national policy (“<i>Programme de substitution énergétique au bois énergie</i>”) and to the referring “Plan d'Investissement REDD+” for 2016-2020. PUE is supported in the national Electrification Programme.</p> <p>In 2021, the WB reports the national (extreme) poverty rate at 64% (below 2.15 USD/day in 2017 PPP) while in EnDev interventions zone this percentage is even higher²⁶. In fact, average households in East Congo are extremely poor and also afflicted by continued conflict. EnDev's clean cooking market baseline assessment (2021) shows that monthly average income per HH in the intervention areas is around 103 USD, with an average of 7 members per HH, i.e. 0.49 USD/day/person! On Idjwi Island, the poorest of the intervention zones, the baseline assessment shows average HH income at 63 USD per month, i.e. 0.30 USD/day/person. Moreover, the highest share of IDPs in DRC are located in Ituri (1.7M), Nord Kivu (1.9M), Sud Kivu (1.2M) and Tanganyika (331,500). These 2021 figures are likely to increase substantially in 2022 due to the increased military operations of the M23, the biggest armed group in DRC.</p> <p>EnDev intervention started at the beginning of 2020 in East DRC (Provinces of Tanganyika, South-Kivu and Ituri). Considering the extremely vulnerable contexts in terms of insecurity, political and humanitarian crisis and poverty, EnDev's has focused on promoting affordable and locally produced ICS. Starting from 2022, EnDev also promotes PUE for MSMEs on mini-grids on Idjwi Island, which is exceedingly poor and rural. The overarching objective is to support the vulnerable and poorest of the populations of East Congo to improve their local resource base and livelihoods by supporting local value creation and productivity, lowered energy costs, improving cooking energy access and lowering environmental impacts of cooking.</p> <p>EnDev's activities are aligned with the national policies for energy, climate change and natural resource protection as outlined above, and it seeks active collaboration with other key actors, most of which operate in the humanitarian sector.</p>
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²¹ The Congolese Association for Renewable and Decentralized Energy

²² The electricity regulatory agency (*Autorité de Régulation de l'Électricité*)

²³ The rural and peri-urban electrification agency (Agence Nationale des Services Énergétiques en milieu Rural

²⁴ Electrification, promotion of Improved Cook Stoves and improved carbonization, promotion of renewable energy

²⁵ <https://unfccc.int/sites/default/files/NDC/2022-06/CDN%20Revis%C3%A9e%20de%20la%20RDC.pdf>

²⁶ <https://www.worldbank.org/en/country/drc/overview>

Cooking sector

Please briefly describe

a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers

- b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:
- **Market development** (developing a market for energy access technologies – mainly relating to household access)
 - **Economic development** (productive use)
 - **Social Development** (access for social institutions)
 - **Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.

Currently, in the three targeted areas, the ICSs value chain is still nascent and need to be strengthened: ICSs use among HHs is estimated in 12% in Bunia, 5% in Kalemie and 8% in Idjwi Island starting from less than 1% in 2020. The main barriers to be addressed to increase ICSs and clean cooking solutions adoption rate by households are the following:

- **Poor availability:** support to establish new ICS producers and to increase the professionalism (technical and managerial skills, quality) and productivity (equipment, processes) of the existing ICS producers, and support to increased distribution points.
- **Poor awareness:** grassroots awareness raising and behavioural change campaigns targeting the average HH in the intervention zones, and new campaigns for even more vulnerable groups, e.g. IDPs, disadvantaged youth, women's groups
- **Poor affordability:** cooperation with other interventions and CSOs will address affordability for the most vulnerable groups (e.g. cash transfer projects, cooperation with VSLAs).

HTC solutions market is totally underdeveloped: high tier ICSs (ex: Jikokoa) although accepted and desired by local population, are very expensive and their dissemination is negligible; eCooking is limited to some small pilot; biogas absent. EnDev will prospect the acceptability and feasibility of the introduction of HTC solutions (possibly e-cookers and/or HTC biomass stoves) through market studies and implement a market test within urban households in Goma or in areas where AVSI and/or partners are implementing rural electrification projects through solar mini-grid (e.g. Idjwi Island). Barriers to HTC cooking are mainly: availability, awareness and affordability. One or more HTC solutions will be promoted in the next programming, when funding is available or exploiting possible carbon credits revenues.

EnDev DRC interventions will overcome the barriers as follows:

Market development

- New producers and distributors (private companies) trained and supported;
- High Tier biomass ICS (Tier 3 or 4, depending on the chosen technology, as per EnDev's standards) introduced into the market and eCooking piloted.
- Demand activation through grassroots BCC campaigns targeting HHs.
- HHs affordability support will enable business environment for local and HTC solutions.

Economic development

- Jobs creation (especially women and youths with poor or no education); additional technical and business skills; improved MSEs productivity; increased local demand of raw materials, equipment, services in the targeted locations.

	<ul style="list-style-type: none"> • HHs savings in time and fuel cost could be invested in strengthening or starting up income generating activities. • Piloting HTC solutions = premises for new jobs creations. <p>Social Development</p> <ul style="list-style-type: none"> • Health (indoor air pollution reduction) and improvement in gender related issues. <p>Poverty alleviation</p> <ul style="list-style-type: none"> • Fuel consumption savings could lead to fuel expenditure savings in areas where over 80% of the targeted population is extremely poor. Fuel is virtually always paid in DRC: charcoal, largely used, is bought at the market. Wood is either bought at the market, or is harvested directly buy the user, against payment to the owner of the tree. Free harvesting is usually limited to small pieces. • in synergy with current AVSI humanitarian interventions, the proposed activities will target refugees and IDPs. • In Goma, poor people who struggle to pay for school fees for children will be trained and coached as ICS retailers/promoter.
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<h2 style="text-align: center; color: #00A651;">Cooking sector: Component 2.1 – Local Improved Cookstoves</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier</p>	<p>EnDev will continue to focus on the current successful modality and activities concerning locally produced artisanal ICSs for charcoal and firewood mainly targeting persons living in extreme poverty Based on internal statistics – EnDev baseline assessment 2021, the vast majority of beneficiaries are below the extreme poverty thresholds. To be conservative, an 80% estimation of LNOB+ beneficiaries was settled.</p> <p>EnDev will capitalise on the intervention areas from the Programming 21 by increasing ICSs market development and sustainability in the urban and suburban areas of Kalemie (Tanganyika province) and Bunia (Ituri), and in the rural areas of Idjwi Island (South-Kivu). In addition, market evaluations will be conducted to assess the opportunity to open new production sites, and establish new distribution networks, in one or more of the following cities: Goma, Nord Kivu Province; Beni, Nord Kivu Province; Bukavu, Sud Kivu Province; Kindu, Maniema Province; Tshikapa, Kasai Province and villages on the axes that branch out the main intervention areas.</p> <p>As explained further below, this information will only be exploited to expand activities if additional resources from carbon credits are available. The results in the 3 initial provinces are very promising (165% of 2022 distribution target achieved), and geographical expansion already proved to be an effective strategy within the initial Provinces. The project is mature enough to expand to other promising locations.</p> <p>Lastly, humanitarian settings will be targeted for setting up producers and/or distributors (see sub-activity 2.1).</p> <p><i>These new markets (locations) will be supported only if EnDev top-up funds or carbon credit revenues will be available.</i> In fact, AVSI</p>

<p>cooking and LNOB+ (incl. the target group).</p>	<p>will explore the potential of registering at least part of the EnDev's ICSs sales on the voluntary carbon market, in partnership and co-financed by other partners (agreed by EnDev, such as South Pole). This will require improving the current M&E system. The revenues will be re-invested in the form of AVSI's co-funding to EnDev project activities, especially to open new marketplaces (new producers and distributors in the new locations above), awareness raising and behavioural change campaigns, improvement and cross-sectorial distribution campaigns.</p> <p>The list of technologies EnDev is/will be promoting in Eastern DRC includes <i>Jiko Nguvu</i> (charcoal stove, locally produced, ceramic liner + metal jacket, approx. 40% fuel savings); <i>Chanaluguma</i> (firewood stove locally produced, full ceramic, 40% fuel savings); <i>Matawi</i> (double fuel stove - firewood and charcoal)</p> <p>Activities <u>A2.1.1 - Market intelligence</u></p> <p><i>Market prospection for new distribution's areas (cities/provinces) for local ICSs – LNOB+ focus areas</i> Rapid assessment with available documents and interviews to include the following aspects: existing models (local ICS), players and programs; existing financial tools and gaps; gender and energy nexus.</p> <p><u>A2.1.2 - Support to supply side (new and existing actors)</u></p> <p><i>LNOB+ poverty focus – Support to Producers</i></p> <ul style="list-style-type: none"> - Performance-based provision of production equipment and materials for facilities improvement, tailored to each producer, as well as provision of means of transport for raw material and ICS distribution - Training on local ICS quality production (at least 20% women production technicians trained), production process standardization, re-organization and costs saving interventions. - BDS - Basic business management training and coaching - TA and coaching for business formalisation and fiscal compliance - Provision of means of transportation for raw materials and ICS to all producers <p>Specific supports will be granted to increase women engagement in the whole value chain (e.g., addressing mobility and childcare during training, giving priority to women-led enterprises or to the enterprises that employ the highest percentage of women, in case of start-up support to new stoves producers).</p> <p><i>LNOB+ poverty focus – Support to Distribution Network</i></p> <ul style="list-style-type: none"> - increasing PoS/retailers' presence and capacities through coaching (sales and marketing techniques) and adv kits (at least 2/3 of female-led points of sale); labelling and branding materials for the 3 ICS promoted <p><i>Expansion to humanitarian settings (LNOB+ focus) and promoting Institutional stoves</i> In coordination with Protection projects implemented by AVSI in East DRC and financed by various donors among which UNHCR</p>
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and the Humanitarian Fund, EnDev will seek to establish local ICS production and distribution in humanitarian settings. In addition, a support to develop and distribute Institutional Stoves will be evaluated, especially for schools and restaurants in collaboration with other donors and players such as UNHCR, WFP and others. The approach will be phased starting from the study of suitable models in coordination with the partners.

A2.1.3 - Support to demand side

*Awareness raising and behaviour change campaigns to increase HHs adoption and sustained use of local ICS – **LNOB+ focus***

This activity will be shaped by the results of the recent Consumer behaviour assessment study and will include grassroots awareness raising activities directly involving ICS producers and distributors.

As **gender plays a significant role** in the adoption of ICSs, **behaviour change** and distribution strategy will be designed with the contribution of women that manage a PoS. Moreover, external animators and sales promoters engaged by AVSI in the coordinated behaviour change campaigns will be **at least 50% women**. Lastly, BCC messages will be expressly addressed targeting women.

*Affordability support for local ICS targeting Refugees/IDPs - **LNOB+ focus***

Local ICS promotion during cash-transfer activities and nutrition awareness raising sessions in refugee and IDP camps; promotion of ICS PoS as income generating activity for the most vulnerable. These activities will be implemented in synergies with other AVSI projects in the region being piloted between November 2022-June 2023. EnDev will also facilitate cooperation between humanitarian agencies and local producers to provide refugees with subsidized ICSs. EnDev's support to these activities involves mainly logistics costs and capacity building.

A2.1.4 - Advocacy

Collaborations with GoDRC, UNCDF, ACERD and other players.

The absence of clear national targets for clean cooking and the lack of a specific policy framework or standards will be possibly tackled together with other agencies depending on the government availability. EnDev will try to contribute by sharing its field experience and market intelligence. In particular, EnDev will work with ACERD and with *Institut Supérieur des Techniques Appliqués*²⁷ to identify and disseminate national standards.

²⁷ A research centre for renewable energy located in Kinshasa, specialized in ICS testing following CCA standards. Member of ACERD

<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<ul style="list-style-type: none"> • Bilateral cooperation with: <ul style="list-style-type: none"> ○ UNCDF, UNDP and WWF concerning market intelligence sharing, more sustainable fuel promotion, technical/ technological skills sharing, target areas assignment to avoid overlap and duplications. ○ ACERD in establishing a more formalized coordination platform. ○ GIZ BGF programme to share AVSI expertise and reach on Renewable energy access • Permanent collaboration with Local Authorities that are always involved in field activities, leading to their increased awareness on clean cooking technologies and turning them into active behavioural change actors. • Cooperation (leveraging) with humanitarian interventions of which many are implemented by AVSI and financed by UNHCR, WFP, Hum. Fund. in other sectors (education, Nutrition, Food Security – Cash Based Transfer, Child Protection, Community Protection)
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? 	<ul style="list-style-type: none"> • Financial The local ICS are affordable to a majority of HHs. Current sales margins already entail an adequate producers and distributors profit. • Institutional The enabling environment is weak. LAs are integrated in behavioural change activities to anchor knowledge strongly in traditional channels. If possible, the project will support ACERD to establish national standards and a national testing lab. • Ecological The artisanal ICS production and use are not harmful for environment. Clay is procured locally paying attention to avoid soil erosion. • Technological All technologies and know-how for current ICS are locally available. ICSs are widely accepted by consumers. • Social Awareness raising/ BCC activities are designed in conjunction with communities/consumers and if in line with local culture and habits. <p>Exit / handover strategy Within the framework of EnDev market-driven approach, the strengthened and already profitable ICSs producers and distributors (private MSMEs) constitute the pillars of the handover strategy. Consumers increased awareness and permanent behaviour change could also contribute to create a growing substitution market.</p>

<p>What is the exit strategy and/or ideas for follow-up financing?</p>					
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Cooking sector: Component 2.1 – Table 1</p>				
	<p>Outcomes</p>	<p><i>Additional 07/2023 – 12/2025</i></p>	<p><i>Of which HTC</i></p>	<p><i>Of which LNOB+</i></p>	<p><i>Total by 12/2025</i></p>
	<p>People: Access to cooking</p>	<p>87,010</p>	<p>0</p>	<p>69,664</p>	<p>150,097</p>
	<p>Cooking sector: Component 2.1 – Table 2</p>				
	<p>Outputs</p>	<p>Applicable</p>	<p>Details</p>		
	<p>Indicator 1.1: + 25% customers empowered to make investment decisions</p>	<p><input type="checkbox"/></p>			
<p>Indicator 1.2: +25% customers reached by fin. products</p>	<p><input type="checkbox"/></p>				
<p>Indicator 2.1: +25% market share for scalable companies</p>	<p><input type="checkbox"/></p>				
<p>Indicator 2.2: suppliers with new business plans for PUE systems</p>	<p><input type="checkbox"/></p>				
<p>Indicator 3.1: improved framework conditions</p>	<p><input type="checkbox"/></p>				
<p>Indicator 3.2: added value of support given to stakeholder networks</p>	<p><input type="checkbox"/></p>				
<p>Cooking sector: Component 2.1 – Table 3</p>					
<p>Additional quantitative indicators</p>	<p><i>Additional 07/2023 – 12/2025</i></p>	<p><i>Of which HTC</i></p>	<p><i>Of which LNOB+</i></p>	<p><i>Total by 12/2025</i></p>	
<p>1. ICSs sold to LNOB+ group (extreme poverty)</p>	<p>49,760</p>		<p>49,760</p>	<p>74,610</p>	
<p>2.No. of new producers</p>	<p>2</p>		<p>2</p>	<p>14</p>	
<p>3.No. of producers selling more than 100 ICSs per month</p>	<p>2</p>		<p>2</p>	<p>14</p>	
<p>4.No. Of people trained</p>	<p>28 women</p>				
<p>5.Activated PoSs</p>	<p>40</p>		<p>40</p>	<p>220</p>	
<p>Narrative</p>					
<p>Additional quantitative indicator 1: ICS sold to LNOB+ beneficiaries, target group Poorest of the Poor.</p>					

	<p>Supply and demand side support have been drastically reduced compared to the potential of the market due to budget constraints.</p> <p>Sector Leadership and Alignment for Clean Cooking: The GoDRC will be supported to develop clean cooking policy and regulation, in coordination with the other sector stakeholders (UNCDF, UNDP, MECS, ACERD).</p> <p>Consumer Behaviour: Awareness and willingness to pay will be expanded further based on AVSI multi-country behaviour change assessment.</p> <p>If EnDev pioneers the first voluntary carbon market project for improved stoves with Gold Standard certification or equivalent, it will also set a precedent for the sustainable design of VCM stove projects in DRC. Moreover, leveraging fund will be available to scale-up existing intervention in other locations/cities opening new marketplaces, producers, distributors (=> additional outcomes).</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 81% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p>HTC: 0%</p> <p><input checked="" type="checkbox"/> LNOB+: 75% vs overall budget; 100% vs LNOB+ budget</p>

<h2 style="color: #00A651;">Cooking sector: Component 2.2 – HTC</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance 	<p>A market test (pilot) for HTC will be conducted to verify which solutions is realistically available, more acceptable and affordable by the consumers especially in urban and suburban areas. Support to HTC market development will be realized only if top-up budget and/or net revenues from carbon credit sales will be available</p> <p>Possible HTC cooking solutions:</p> <ul style="list-style-type: none"> • <i>Locally produced Higher Tier biomass stove</i>, model to be established in coordination with other local actors (UNCDF, UNDP, WWF, etc). Working with charcoal, wood or pellets. • <i>Jikokoa charcoal stove</i> from Burn or equivalent. It will be imported and distributed in Goma and Bunia or other cities of the area. It is

<ul style="list-style-type: none"> • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>already present in Goma although with a very low penetration due to its cost. It is very appreciated by consumers.</p> <ul style="list-style-type: none"> • <i>ECooking devices</i> (EPC, induction, etc) to be selected for market test in a context where electricity access is granted by on-grid and/or off-grid solutions or where AVSI and partners are implementing rural electrification projects. <p>Voluntary Carbon Market Financing: AVSI will explore the potential of registering at least part of the EnDev’s ICSs sales on the voluntary carbon market, in partnership and co-financed by South Pole or other partners. This will require improving the current M&E as described under component 2.1. The revenues will be re-invested in the form of AVSI’s co-funding to EnDev project activities top-up, especially in regard to development of component 2.2 (RBF for producers/distributors, demand-side subsidies for the most vulnerable families, access to credit promotion, etc.) and to open new markets for component 2.1 => increased outcomes.</p> <p>Activities</p> <p><u>A2.2.1 - Market intelligence</u></p> <p><i>Market test (pilot) and pre-feasibility study for HTC solutions - HTC focus</i></p> <p>The market test (pilot distribution of approx. 50 eCooking devices and/or high tier ICSs) will be informed by the <i>Market and impact study on eCooking</i> under elaboration in collaboration with MECS (October-December 2022) and a market assessment performed by AVSI staff that will investigate following aspects: existing models (e.g. higher tier ICSs and eCooking), players and programs; existing financial tools and gaps; gender and energy relationship; innovations acceptability. Furthermore, it will include the elaboration of sustainable business models and marketing strategies for eCooking and/or high tier ICSs pilot distribution in partnership with interested private companies.</p> <p><u>Only if top up funds or carbon credits revenues will be available, the project will implement the following additional activities under component 2.2:</u></p> <p><u>A2.2.2 - Support to supply side</u></p> <p><i>Support to Producers and or Distributors - HTC focus</i></p> <ul style="list-style-type: none"> - Connection with MFIs - Performance base support in terms of production equipment, tools and material - Performance base support in terms of marketing tools and adv campaigns for producers and/or distributors - Technical and managerial training - Connection with existing PoS or distribution networks <p>Specific supports will be granted to increase women engagement in the whole value chain (e.g., addressing mobility and childcare during training, giving priority to women-led enterprises or to the enterprises that employ the highest percentage of women, in case of start-up support to new stoves producers).</p>
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	<p>A2.2.3 - Support to demand side</p> <p><i>Awareness raising and behaviour change campaigns targeting HTC promotion - HTC focus</i></p> <p>Radio announcements, road show, community demonstrations, door-to-door activities, awareness raising and behavioural change events in schools, marketplaces, exhibitions, etc.</p> <p>Specifically, bigger cities and more affluent communities (i.e. income above 2.15 USD/day) will be targeted. Coordination with other humanitarian and private actors in the area, such as UNCDF, UNDP, Altech, Burn, electricity distributors and others, will be essential to stimulate synergies and multiply results. As gender plays a significant role in the adoption of HTC solutions, behaviour change will be designed with the contribution of women that manage a PoS. Moreover, external animators and sales promoters will be at least 50% women. Lastly, BCC messages will be expressly addressed targeting women.</p> <p><i>Affordability support - HTC focus</i></p> <p>High price HTC solutions will also be promoted by facilitating partnerships between distributors and microfinance institutions (MFI). EnDev might cover financial risks by a guarantee. For the most vulnerable population, demand subsidies may be considered while carbon credits may leverage the funds available for this activity.</p> <p>A2.2.4 - Advocacy</p> <p><i>Collaborations with GoDRC, UNCDF, ACERD, MECS, SNEL and other players.</i></p> <p>The absence of clear national targets for clean cooking and the lack of a specific policy framework or standards will be possibly tackled together with other agencies depending on the government availability. EnDev will try to contribute by sharing its filed experience and market intelligence. In particular, EnDev will work with ACERD and with <i>Institut Supérieur des Techniques Appliquées</i>²⁸ to identify and disseminate national standards.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<ul style="list-style-type: none"> • Possible bilateral cooperation with private companies for eCooking: Nuru, Virunga Energy, Socode, Equatorial Power • Possible cooperation with private companies for high tiers ICS: Burn, Envirofit and similar • Bilateral cooperation with: <ul style="list-style-type: none"> ○ ACERD in establishing a more formalized coordination platform. ○ GIZ BGF programme to share AVSI expertise and reach on Renewable energy access ○ UNCDF and UNDP concerning market intelligence sharing, technical/ technological skills sharing, target areas assignment to avoid overlap and duplications. ○ SNEL the national electricity distributor for eCooking.

²⁸ A research centre for renewable energy located in Kinshasa, specialized in ICS testing following CCA standards. Member of ACERD

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<ul style="list-style-type: none"> • Financial Although subsidy is often needed for a pilot entrepreneurial activity, to ensure sustainability, EnDev will prioritise beneficiaries for whom support is essential, and will target only private sector initiatives with a sustainable business model and plan by reducing their risks and shortening the achievement of their respective break-even point. • Institutional The enabling environment is weak. LAs are integrated in behavioural change activities. If possible, the project will support ACERD to establish national standards and a national testing lab. • Ecological EnDev will select only HTC solutions with a consistent environmental protection policy. • Technological Suitable HTC technologies will be selected for which guarantees and or maintenance is offered. • Social Awareness raising/ BCC activities will be designed in conjunction with communities/consumers and if in line with local culture and habits. <p>Exit strategy: prior self-sustainability of the supported business initiatives supported</p>																			
<p>Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p>	<p>Cooking sector: Component 2.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>114</td> <td>114</td> <td></td> <td>150,097</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.2 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td></td> <td></td> </tr> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td></td> <td></td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	114	114		150,097	Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions			Indicator 1.2: +25% customers reached by fin. products		
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<p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<table border="1"> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td></td> <td></td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td></td> <td></td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td></td> <td></td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td></td> <td></td> </tr> </table>	Indicator 2.1: +25% market share for scalable companies			Indicator 2.2: suppliers with new business plans for PUE systems			Indicator 3.1: improved framework conditions			Indicator 3.2: added value of support given to stakeholder networks		
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<p>Budget share</p> <p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes. Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Cooking sector: Component 2.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>ICSs sold</td> <td>50</td> <td></td> <td></td> <td>50</td> </tr> </tbody> </table> <p>Narrative If EnDev pioneers the first voluntary carbon market project for improved stoves with Gold Standard certification or equivalent, it will also set a precedent for the sustainable design of VCM stove projects in DRC. Moreover, leveraging fund will be available to scale-up existing intervention (component 2.1) and to support supply and demand side for HTC.</p> <p>Approx. 5% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p>HTC: 5% vs overall budget; 100% vs HTC budget LNOB+: 0%</p>	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	ICSs sold	50			50		
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Electricity sector

- Please briefly describe
- the current state of the market based on the ToC for the electricity sector, highlighting key barriers
 - how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:
 - Market development** (developing a market for energy access technologies – mainly relating to household access)
 - Economic development** / productive use
 - Social Development**
 - Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.

The intervention will primarily focus on Idjwi Island, in South Kivu, ideal for off grid interventions and for the engagement of private sector because of its economic potential and relative security. Idjwi Island has an estimated energy demand of 1 MW, though there is limited value addition because of lack of power. It is connected to the mainland mainly through ferry connections to Goma and Bukavu.

The main market barriers observed on the supply side are scarce supply of quality electric appliances and of credit services on the island and in Goma and Bukavu, and poor awareness of the business case for their provision. On the demand side there are poor business skills and knowledge of the productive use opportunities and lack of finance to invest in them. The above barriers will be addressed in the following way:

- Market development**
 - build the capacity of financial service providers (FSPs) to offer services for PUE appliances; ii) promote B2B agreements between FSPs and the providers of quality and efficient PUE appliances; iii) empower local users of PUE products through capacity building and access to finance.
- Economic development**

Thanks to the promotion of PUE through access to finance and to quality appliances the number of businesses and their turnover in the selected areas of intervention is expected to grow causing an increase in economic development. Key economic sectors will be targeted in order to guarantee maximum impact such as value addition in the agriculture value.
- Social Development**

Thanks to the availability of new products and services in agriculture, the farmers will be able to add value to their agricultural product and therefore to sell them at a higher price with a positive impact on households' income. The increased accessibility to services and products, previously geographically distant, will moreover lead to increased household's savings and the availability of extra time for other activities. The increased income and savings are expected to lead to higher availability of funds for household expenditures. Finally, the newly promoted small enterprises are expected to lead to additional employment.
- Poverty alleviation**

The selection criteria for PUE beneficiaries will include women and youth with a focus on women headed households and unemployed youth with an expected impact on poverty alleviation.

Electricity sector: Component 3.1 – Productive Use of Energy

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the ta

Approach

The intervention will continue and expand the PUE work started in January 2022 by supporting at least **90** new MSMEs in Idjwi Island in PUE activities in mini-grids connected areas or through stand-alone systems.

In addition the 60 enterprises supported during Programming 21, will be continuously coached and where possible helped to further scale up their business.

(1) On the demand side the targeted local entrepreneurs and farmers will be provided with **training and BDS** to start or expand a business, therefore increasing their demand for electric appliances and electricity. Specific effort will be put in supporting businesses in agriculture value addition and cold chain.

(2) On the supply side the project will work with **equipment suppliers, financial organizations** and **mini-grid developers** to adapt and increase their offer of energy finance and products supply to the rural communities in Idjwi by showing them the business case. This will be done through (2a) capacity building and the (2b) the creation of market linkages among them and with the mini-grid developer/s.

(3) The **matching grant scheme** already developed to partially subsidize the **entrepreneurs** to access expensive equipment in case access to finance from financial organizations does not materialize for all the beneficiaries will be extended to the new beneficiaries.

From a market analysis conducted in Idjwi, AVSI registered a wide demand for electricity and PUE appliances, the exploitation of which being obstructed by the unavailability of electricity and by the low investment capacity and access to finance that the present approach is addressing.

The assessment conducted by AVSI in Goma and Bukavu (the main markets for appliances accessible from Idjwi) shows that there are multiple providers of energy efficient productive appliances. No challenges are foreseen on the side of the availability of such kind of appliances and interest from distributors and/or manufacturers to start/increase their offer to Idjwi.

The availability of suppliers of stand-alone productive use appliances is more limited, but distributors are present in Goma and based on AVSI's market intelligence in Rwanda, there are potential distributors interested in expanding in DRC.

In the implementation of said approach AVSI will promote the cooperation with local institutions, and authorities with the objective of building local capacities and enabling a transfer of knowledge to local partners.

Activities

Based on the approach described above, the following key activities will be implemented:

A5 - Value Chains assessment: Assess existing and potential PUE opportunities in the 9 selected villages²⁹ and 5 mini-grid areas with a focus on those with a higher social impact and that engage women (i.e. can be run by/employ women and/or produce products or services that benefit women).

A6 – BDS training and coaching to PUE entrepreneurs

- Select at least 90 beneficiaries (individuals/ groups entrepreneurs/ farmers, at least 50% led by women or employing women) through a business idea competition. The project will also target vulnerable categories, i.e. women headed households and unemployed youth.
- Train the beneficiaries in business and financial skills.
- Provide continuous specialized coaching

A7 – Support to PUE financing

A7.1 Implement the developed matching grant scheme to support the purchase of electric appliances and equipment.

A7.2 Build the capacity of financial service providers to increase access to finance for PUE enterprises: the project will provide incentives to selected FSPs to access Idjwi clients to overcome the barriers observed to access Idjwi market.

A8 – Demand/offer matching facilitation for PUE appliances: based on the assessment of appliances providers conducted in Programming 21 and leveraging on the scale up potential offered by the progressive electrification of Idjwi, AVSI will facilitate agreements between suppliers and end-users and between suppliers and retailers.

Reasons for Approach

The suggested approach capitalises on the first 18 months of PUE activities in DRC and is based on the experience developed by AVSI in other countries (e.g. in Rwanda and Uganda within EnDev project), where the main barriers on the demand side to engage in productive use of energy are lack of business skills and financial literacy, scarce availability of own finance to acquire productive equipment and lack of quality appliances. The nascent and complex off-grid market in DRC requires conducive and complementary instruments and capacity building activities to ensure increased adoption of productive use.

Effectiveness and Cost-efficiency

In the present intervention, AVSI proposes to promote access to finance through a mix of grant provisions and access to financial markets. This mix is proposed because, basing on the experience in DRC and in other countries, access to finance is an important barrier to acquire energy equipment. Since, most likely, not all the beneficiaries will be able to access loans from financial institutions, they will need to be supported with partial grants.

²⁹ MUGOTE, BUSHAKE et BULEGEYI, KASHIRABOBA et KAGUSHU, BUYUMBU, BUNYAKIRI, KASHARA et KIMOMO

<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Implementer base</p> <p>AVSI has an MOU with the sole mini-grid developer in Idjwi that will deploy additional 5800 connections by 2024 and promotes PUE in another mini-grid site established through funds from the Italian Ministry of Environment. AVSI coordinates with local authorities and leaders.</p> <p>Leverage</p> <p>Coordination with other agencies is ongoing, in particular with the Swiss Cooperation that intends to finance additional off grid initiatives on the island. Additional investment could be leveraged from the private sector as the business case for sustainable off-grid interventions is shown, and additional funds could be attracted also for credit finance.</p> <p>Nexuses</p> <p>Main nexus is with the agriculture sector for agri-value addition and skills development.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<ul style="list-style-type: none"> • Financial The insights from Programming21 shows that contribution capacity by MSMEs averages 40%. This indicates that in case of replacement of appliances, the beneficiaries can likely be able to face the cost, plus the enabling environment created will also facilitate substitution. • Institutional AVSI will work in cooperation with Sud Kivu Province with the Energy and Environment offices whose capacity has already been strengthened through previous collaborations. • Ecological AVSI will partner with suppliers that can guarantee long life products. The few stand-alone systems promoted will limit the need of an E-waste plan that is generally not offered by the available suppliers. AVSI will collaborate with mini-grid developers that have obtained an approved environmental impact assessment. • Technological Appliances available in Goma and Bukavu will be prioritized, imports will be limited to what is unavailable locally. A training will be provided for complex machinery, for their maintenance and usage. • Social AVSI will facilitate the interaction between the companies and the communities in order to manage expectations and avoid exploitation risks; engage community leaders, local authorities and the private sector partners in the selection of beneficiaries using shared and transparent criteria; support and promote productive activities in the most impactful sectors. <p>Exit / handover strategy</p> <p>AVSI will work with the mini-grid developers to facilitate their agreement with the financial organizations and the PUE appliance suppliers that will be engaged in the project. The intention is to favour developers' involvement in facilitating the access to appliances by their</p>

	<p>clients, who will consequently increase their demand for energy and knowledge, and capacity to access finance. Synergies will moreover be sought with new projects that AVSI will design in the same geographical area and sector, and with other upcoming interventions led by AVSI or other development partners in order to allow where possible the continuation and or/scale up of the intervention.</p>																																					
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the</p>	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to electricity</td> <td>54</td> <td>0</td> <td>54</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>MSMEs trained and supported for PUE access</td> <td>90</td> <td></td> <td>170</td> </tr> </tbody> </table> <p>Narrative Outcomes for MSMEs access to PUE have been drastically reduced compared to the potential of the market due to budget constraints. In fact, Programming 21 activities allowed EnDev to establish very effective and realistic processes (MSMEs selection, training, coaching and monitoring) leading to a big upscale potential. Partnerships and synergies with Mini-grid developers and SNEL may allow to establish market intelligence and best practices to be disseminated among all interested players and investors.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	PU: Access to electricity	54	0	54	Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input type="checkbox"/>		Indicator 1.2: +25% customers reached by fin. products	<input type="checkbox"/>		Indicator 2.1: +25% market share for scalable companies	<input type="checkbox"/>		Indicator 2.2: suppliers with new business plans for PUE systems	<input type="checkbox"/>		Indicator 3.1: improved framework conditions	<input type="checkbox"/>		Indicator 3.2: added value of support given to stakeholder networks	<input type="checkbox"/>		Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	MSMEs trained and supported for PUE access	90		170
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 13% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input type="checkbox"/> LNOB+: 0%</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Risks:</p> <ol style="list-style-type: none"> 1. Consumers' dissatisfaction and protests because of the short lifespan of the promoted ICS due to (a) poor quality or (b) to misuse 2. Fire and accidents due to the misuse of eCooking devices 3. Increase of alcohol addiction by families that can buy more alcohol thanks to ICS/HTC fuel savings 4. Social envy and accusation of unfair competition for MSEs benefitting from project support for PUE and ICS promotion 5. Environmental calamities such as volcano eruptions (Nyiragongo volcano, at the outskirts of Goma), earthquakes (Nord Kivu is a highly seismic zone), tropical storms. 6. Internal conflicts: Eastern DRC, and especially Nord Kivu (where AVSI's Country office is located) and Ituri are highly affected by armed groups' activities. The M23 armed group nearly occupied Goma in November 2022 and is still active at less than 50 Km. <p>Mitigation actions:</p> <ol style="list-style-type: none"> 1. (a) Periodical quality control and technical training to producers; (b) massive and comprehensive behavioural change campaign including maintenance and safe use training and brochures distribution 2. Massive and comprehensive behavioural change campaign including maintenance and safe use training and brochures distribution 3. Behavioural change activities also include women empowerment and life skills training (the value of the person) 4. (a) Involvement of all potential ICS distributors and transparent selection of the ICSs producers to be supported; (b) Transparent selection supported MSEs for PUE 5. Contingency plans are in place to rapidly adapt to environmental threats.
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	6. A Security Department constantly monitors the armed groups' movements, and contingency plans are in place to rapidly evacuate or relocate the staff and reorganize the coordination counting on our decentralized structure in the Country.
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Budget				
<p>Please indicate your requested core budget using the table "Budget overview".</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".</p>	Final budget for project period incl. co-financing			
	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
	1	Core-budget (c.f. quotation price above)	1,006,849	
Total estimated budget		1,006,849		

7. Ethiopia

Acronyms

AfDB	African Development Bank
BAU	Business as usual
BDS	Business Development Services
BMWK	German Federal Ministry for Economic Affairs and Climate Action
BMZ	German Federal Ministry for Economic Cooperation and Development
CRGE	Climate-Resilient Green Economy
DBE	Development Bank of Ethiopia
DGIS	Dutch Ministry of Foreign Affairs
ECCA	Ethiopian Clean Cooking Alliance
EDPG	Energy Development Partners Group
EPA	Environmental Protection Authority
EEU	Ethiopian Electric Utility
ESEDA	Ethiopian Solar Energy Development Association
EU	European Union
EWiEN	Ethiopian Women in Energy
GBE	Green People's Energy
GEAPP	Global Energy Alliance for People and Planet
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse gas
HH	Household
HTCC	Higher Tier Clean Cooking
ICS	Improved Cookstove
IDP	Internally Displaced People
IKEA-F	IKEA Foundation
LNOB	Leave No One Behind
MECS	Modern Energy Cooking Services
MFiS	Micro Finance Institutions
MoH	Ministry of Health
MoWE	Ministry of Water and Energy
MSME	Micro, Small and Medium Enterprises
NDC	Nationally Determined Contributions
NEP	National Electrification Plan
PAYGO	Pay as You Go
PEA	Petroleum and Energy Authority
PSNP	National Productive Safety Net programme
PUE	Productive use of energy
RBF	Results Based Financing
REB	Regional Energy Bureau
RVO	Dutch Enterprise Agency
SEFFA	Sustainable Energy for Smallholders Farmers (IKEA-F)
SHS	Solar Home System
SI	Social Institution
SNNPR	Southern Nations, Nationalities, and Peoples' Region
SWR	Southwestern Regions
ULAB	Used Lead-Acid Battery
ULIB	Used Lithium-Ion Battery
UNDP	United Nations Development Programme
WB	World Bank

WEEE

Waste from Electrical and Electronic Equipment

Summary and key data

Promoted technologies		Pico-PV, SHS, nano-grids, mini-grids, improved cookstoves, eCooking
Type of Energy		Biomass, solar
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Ethiopia will continue to focus on providing access to affordable, reliable, sustainable, and modern energy solutions to the population across Ethiopia's vast off-grid rural areas. Energy access solutions will be provided through interventions for strong clean cooking and electrification components. For the new programming period, an additional approximately 867,000 (out of a total 2.4 mil.) people from lower-income households, social institutions and small to medium sized enterprises will benefit from first or improved access to sustainable thermal and electrical energy.</p> <p>The overall impact will be to transform rural communities through improved social, economic and environmental benefits in a strengthened, federal Ethiopia. The transition to market based sustainable energy solutions will be achieved through EnDev's ongoing policy advice, and its support in innovation, knowledge transfer, training, awareness raising and facilitation of access to finance in a broad network of partnerships.</p> <p>Key interventions will include training and capacity development for private sector service providers, technology users and policy makers. Evidence based learning will be promoted from ongoing experience of EnDev Ethiopia's current phase and from technology customisation, adoption and rollout experience based on EnDev's result based monitoring.</p> <p>In case of technology adoption, innovation will be promoted via higher tier cooking, productive use of energy and by promoting mid-tier electricity systems through the mini-/nano- and swarm-grids. Lessons learnt will be fed into policy advocacy, standards and regulation development (including enforcement) in close partnership with relevant alliances from both the public and private sector. Awareness raising, gender and sustainability will be at the core of EnDev Ethiopia's future interventions.</p>	
Programming period	01.07.2023 - 31.12.2025	Indicative core budget EUR 5,000,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)
Approx. thematic budget shares	15% ³⁰	12 % ³¹

³⁰ Substantial HTC part will be implemented in collaboration with the associated HTCC project (RVO/EU)

³¹ Assumption based on intervention strategy

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+ ³²	Further relevant results / indicators
Energy for lighting / electrical appliances in households	285,497 people	N/A	25,289	e.g. ultra-poor under Productive Safety Net Programme, IDP and Refugee camps
Cooking / thermal energy for households	581,160 people	51,880	168,002	e.g. ultra-poor under Productive Safety Net Programme, IDP and Refugee camps. For HTC: eCooking, higher-tier biomass, for urban, peri- urban and affluent rural HH
Electricity and/or cooking / thermal energy for social infrastructure	19,918 SIs	2,518	12,381	e.g. eCooking and higher tier cooking for urban and rural institutions
Electricity and/or cooking / thermal energy for productive use / income generation	11,097 MSMEs	46	10,183	e.g. Gender, low-income group

Country context

Please briefly outline the country context (i.e., state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
EnDev's overarching objectives in the markets being supported
EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

Current power generation capacity in Ethiopia stands at 5,300 MW, 90% of which comes from hydro. However, Ethiopia has 60,000 MW³³ of renewable energy potential and only 1% of its vast solar energy potential (4.5-7.0 kWh/m²/day) is currently realized. Ethiopia's economic growth has decelerated but is stable (within 5-6%).

56% of Ethiopia's 118 million people still lack access to electricity, and nearly 100 million are without access to clean cooking. Universal access to energy is thus the top agenda of the Ethiopian Government's energy sector transformation strategy.³⁴ Ethiopia's Climate-Resilient Green Economy (CRGE) strategy aims to reach 17.7 million households with clean and improved cookstoves by 2030, with a potential greenhouse gas (GHG) emission reduction of 51.2 MtCO_{2e}. The National Electrification Plan (NEP 2, 2019) aims to provide every citizen with access to electricity, 65% on-grid and 35% off-grid, by 2025.

In its updated Nationally Determined Contributions (NDC) 2021, Ethiopia aims to reduce GHG emissions in the range of 250.6 MtCO_{2e} by 2030 from the energy sector and LUCF with the support of Development Partners.³⁵

The Ministry of Water and Energy (MoWE) remains the main political partner at the federal level. At the regional level, EnDev

³² This data table is exact reflection from input at ODM dated 3 Feb 2023, which however provided significant variation from projection based on usual OCS 2.0, which is the basis of existing project monitoring

³³ Adapted from <https://www.trade.gov/country-commercial-guides/ethiopia-energy>

³⁴ Reconfirmed by H.E. State Minister, Energy in bilateral meeting with EnDev Ethiopia in November 2022

³⁵ https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf

	<p>interventions are implemented in seven regions (Amhara, Oromia, Sidama, SNNPR, Gambella, SWR and Somali). EnDev cooperates closely with the Regional Governments and its Regional Energy Bureaus (REBs), Health and Education institutions and their relevant substructures at Woreda (district) level. EnDev also collaborates with the Development Bank of Ethiopia (DBE), the Ethiopian Petroleum and Energy Authority (PEA), the Ethiopian Standard Agency, the Ethiopian Conformity Assessment Enterprise, the Ethiopian Environmental Authority (EPA) and the Ethiopian Electric Utility (EEU).</p> <p>EnDev's overarching objectives in the upcoming programming period refocus on its two core components:</p> <ol style="list-style-type: none"> a) Electrification (implemented by GIZ), in which an additional 285,497 people (out of a total 905,977 accumulated since 2010), 7,904 (8,630) SI, and 328 (1,097) MSMEs will be provided with electrical energy; and b) Clean Cooking (implemented by GIZ and HTC sub-component mainly by SNV) in which an additional 581,160 households (1,480,783), 12,014 (12,157) SI, and 10,769 (12,528) MSMEs will be provided with improved clean cookstoves³⁶. <p>The World Bank, EU and UNDP remain relevant donors for off-grid energy access. EnDev has established a longstanding partnership with the EU and is receiving co-funding for its activities. Further financial support is provided by the IKEA Foundation under the SEFFA (Sustainable Energy for Smallholders /Farmers) Project and by DGIS and the EU for a new HTCC project (Higher Tier Clean Cooking, implemented together with SNV).</p>
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Cooking sector	
<p>Please briefly describe the current state of the market based on the ToC for the cooking sector, highlighting key barriers how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways: Market development (developing a market</p>	<p>Ethiopia faces a considerable clean cooking challenge as over 90% of households use biomass as a primary cooking fuel, predominantly relying on firewood, which has dramatic consequences for the environment, economic development, and particularly on the health of women and children (MECS 2021).</p> <p>The Ethiopian cooking energy market is dominated by lower-tier (Tier ≤2) technologies (improved cookstoves). The market for higher-tier (≥Tier 3), sustainable biomass cooking fuels, and eCooking is mainly promoted by the Ethiopian government in urban and peri-urban areas and rarely in rural areas. The cooking energy market is at a pre-commercial stage which is characterized by only a few small and medium-scale businesses and relatively low levels of product diversity and sales volumes.</p>

³⁶ This data table is exact reflection from input at ODM dated 19 Apr 2023, which however provided variation from projection based on usual OCS 2.0, which is the basis of existing project monitoring

<p>for energy access technologies – mainly relating to household access)</p> <p>Economic development (productive use)</p> <p>Social Development (access for social institutions)</p> <p>Poverty alleviation (leaving no one behind and including access in refugee settings)</p> <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>6% of households in Ethiopia have access to clean cooking, while electricity connection coverage in Ethiopia is 41% (ECCA-2021, MECS-EnDev-Ethiopia-2022). The low access rate can be attributed to various factors such as low awareness, a limited number of high-quality products, high prices, ineffective marketing, limited distribution networks and poor after-sales services. Furthermore, many private sector companies do not have the skills and capabilities to resolve these issues.</p> <p>As part of its continued efforts to support the development of the clean cooking market, EnDev in its follow-on phase will support existing and potential suppliers. The strategic support will focus on the promotion of more innovative and customized improved cooking solutions targeted to the customer segment with proper business models and link them to financial services. This applies to higher-tier cookstoves as well. To create a sustainable supply and demand, awareness and promotion campaigns, and quality assurance will continue to be the focus of the project.</p> <p>In strengthening the enabling environment, EnDev in close partnership with the new HTCC associated project, to be implemented jointly by GIZ and SNV, will continue to focus on building capacity and commitment at the macro- and meso-levels with political partners, while further empowering and restructuring of the Ethiopian Clean Cooking Alliance (ECCA) in its role as the multisectoral representative of the clean cooking sector including the private sector. Finally, EnDev will work with the Ethiopian Women in Energy Network (EWiEn) in enhancing an enabling environment for female energy entrepreneurs, as was recommended by the gender analysis.</p> <p>Going beyond the HH level, EnDev will continue promoting lower and higher-tier clean cooking at social institutions with a focus on the productive use of energy.</p> <p>The Gender Analysis, which closely reviews the relationship between gender dimensions in Ethiopia and specifically within the energy sector, covers the context, stakes and challenges faced in gender equality in the Ethiopian energy sector. To address LNOB+, EnDev will promote improved and clean cooking using different business models that facilitate inclusion and empowerment, targeting women and girls, refugee settlements, internally displaced people and low-income households, who are unable to afford improved and clean cookstoves. It will further work to involve women in the process where relevant, not only to ensure further empowerment of women, but also to tailor and target clean energy solutions to women.</p>
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Cooking: Sub-Component 2.1 – Lower Tier Cooking and Improved Fuels (LTCIF)

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).

To ensure the development of an enhanced, robust and transformative clean cooking market, the follow-up strategy of EnDev Ethiopia for the upcoming phase 2023-2025 will consolidate efforts to create a national clean cookstove campaign and focus on LNOB+. EnDev's support will further elevate the best performing producers to a higher level (semi-industrial level) and facilitate new and bigger market entrants with support through a combination of instruments such as RBF and customized BDS towards scale and sector transformation. EnDev will also continue its ongoing efforts in the development of the supply chain for sustainable biomass cooking fuels (briquettes, pellets) and corresponding ICS, facilitating the sound operation and maintenance of established briquetting plants and markets in all operational regions.

There are encouraging experiences to learn from, and settlement patterns are emerging to call for EnDev's target-based upcoming engagement. Smoke Free Village approaches (triangular combination of solar lighting, improved cookstove and tree plantation) in rural areas and setting up a similar clean cooking culture in urban condominiums (eCooking, tree plantation and tobacco-free cities – as per the emerging concept) could provide additional leverage.

In cooperation with MoWE and the Cooking energy sub-group under the Energy Development Partner Group (EDPG), EnDev will jointly develop a national clean cooking roadmap incorporating breakdown targets per region and tier based clean cooking technologies, complementing investment from different donors and defining roles of relevant public and private sector actors.

The component will also provide additional support to create/raise awareness and foster positive behavioural change among target communities on the benefits of improved cooking technologies to increase the demand for briquettes and appropriate ICS technologies.

The component aims to promote the following low-tier (Tier 2) ICS cooking technologies that utilize solid biomass fuels. These technologies are characterized by fuel savings of at least 40% and above as compared to open fire stoves. These technologies are promoted in all intervention regions. New technologies/innovations will be added to diversify products and will cater to user needs based on an updated market survey. The quality and thermal efficiency will be demonstrated further through national standardisation.

No	ICS Cookstove type to be promoted	Tier	Fuel saving performance
1	Mirt stove	2	≥ 50%
2	Tikikil stove	2	≥ 50%
3	IRS stove (Institutional Rocket stove)	2	≥ 50%
4	Yekum Mirt	2	≥ 50%
5	Mirchaye stove	2	≥ 50%
6	Gonziye Stove	2	≥ 50%

EnDev Ethiopia will continue to partner with and strengthen sector industry associations, in particular the regional ICS associations, national cookstove association as well as the Ethiopian Clean Cooking Alliance (ECCA). Activities will support capacity building and institutional development to empower associations to act as the industry voice and effectively participate in policy and strategic dialogue. This will enhance competition and fair play and enforce the quality of products and sound business practices.

EnDev aims to identify and support front runner private sector actors in the cooking energy sector to have more market-oriented business plans in place and produce at a semi-industrial level.

Currently Ethiopia hosts more than 800,000 refugees and has 3.6 million IDPs. As part of the EnDev goal to “leave no one behind”, EnDev will continue its efforts in Humanitarian Energy to promote energy access in displacement settings by promoting improved cooking solutions. This helps to improve the relationship between refugees and host communities over the issue of energy access. In this regard, EnDev will support successful commercial supply chains of appropriate ICS and briquetting technologies as an income-generating opportunity for small and medium enterprises/cooperatives for refugees and their host communities.

In implementing its gender-transformative approach to improved cooking solutions, EnDev will respond to the prevailing issue of women’s limited participation in the design of efficient and locally accepted cooking solutions. Women will be encouraged to play a larger role in the production, marketing, and distribution of these products. Men will also be included and trained in gender-friendly marketing activities and user education programs for energy-efficient cooking solutions in a gender-sensitive approach.

The project will further, in its partnership with sector industry associations, integrate gender-sensitive and responsive business practices as well as provide access to gender-sensitive training to the associations and their members.

	<p>EnDev will also highlight and promote women’s leadership by profiling and promoting women in leadership roles. The Project will organise discussions and workshops centred on identifying, and challenging barriers for women to:</p> <ul style="list-style-type: none"> • Access relevant energy technologies and fuels • Participate fairly in the cooking market chain • Advance in their careers in the cooking market chain or relevant environment • Develop relevant skills or capacities • Have a voice in their relevant sectors
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The Ministry of Water, and Energy (MoWE) remains the main political and implementation partner for EnDev Ethiopia at the federal level. At regional level, EnDev complements and leverages activities of Cooking Energy Associations and Regional Energy Bureaus.</p> <p>EnDev collaborates with the Development Bank of Ethiopia (DBE) to leverage financial incentives for producers and users. EnDev cooperates with the BMZ co-financed and GIZ-implemented ESDS project (Energy Solutions for Displacement Settings) on humanitarian energy to provide improved energy access to refugees, internally displaced people and host communities. EnDev’s activities are also aligned with SNV in terms of joint approaches to the partner Government in framework improvement and complementing sector activities. EnDev also collaborates with the WB, EU, UNHCR, international NGOs like World Vision, and Concern Worldwide. EnDev engages with the Ethiopian Environmental Protection Agency EPA in the context of the nation’s NDC, to explore options for leveraging the voluntary carbon market (with strict carbon offset verification) for the dissemination of cooking solutions. EnDev leverages joint sector approaches and framework improvement measures being co-chair, on behalf of GIZ, at the Cooking energy donor sub-group under Energy Development Partners Group (EDPG).</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is 	<p><u>Financial Sustainability:</u> Simplified and customized loan schemes by selected financing institutions, RBF, investment in research and innovation for lowering cost and increasing efficiency will continue to benefit both the demand and supply side as a basis for market development. Furthermore, supporting the existing mission of accessing the carbon market will contribute to the financial sustainability of the cooking energy market.</p> <p><u>Institutional Sustainability:</u> Anchoring the EnDev activities under the Government led National Clean Cookstove program, ownership and improved capacities from relevant public and private sector actors will ensure institutional sustainability.</p> <p><u>Technological Sustainability:</u> Training of public institutions experts, and ICS companies (industry) on the quality assurance of standard products as well as enforcing maintenance services, research and innovation, provision of testing facilities and performance certification using acknowledged national standards, increases the technology sustainability.</p>

<p>there proper handling of e-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Ecological Sustainability: By reducing the use of unsustainable raw materials under conventional cooking, the project contributes to the reduction of environmental effects of forest degradation, massive charcoal production as well as sale, burning of firewood and reduction of CO₂ Emissions.</p> <p>Social Sustainability: The project will contribute to reducing inequality and social tensions by providing accessible and user-friendly modern cooking energy solutions. Relevant stakeholders from the public and private sector, including women will be involved in the planning, designing and implementation of interventions, and strengthening their capacities where needed. This includes supporting women’s representation and voice within the sector through existing platforms and competency building, as per the global EnDev Gender Strategy and Gender Action plan, so that the incorporation of gender in energy activities continues beyond the project period.</p> <p>Exit Strategy: By creating a sustainable enabling framework, bringing private sector at the forefront and addressing access to finance with demonstrated success stories of reducing cost, energy poverty and improving associated health benefits, EnDev plans to systematically exit from the sector as the market matures over time.</p>
<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 	<p>See tables for 2.1 and 2.2 under Outcome section 2.2</p>

<p>06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 14% of the budget aimed for this sub-component</p> <p>Approx. contribution to thematic budget for:</p> <p><input type="checkbox"/> HTC: <i>n/a</i></p> <p><input checked="" type="checkbox"/> LNOB+: 27% of the target people for access to cooking</p>

Cooking: Sub-Component 2.2 – Higher Tier Cooking (HTC)

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance 	<p>The Sub-Component Higher Tier Cooking (HTC) will be mainly implemented by SNV and in partnership with the RVO/EU co-financed and EnDev associated HTCC project.</p> <p>In the Ethiopian context, the transition to higher-tier cooking requires a multi-sectoral and market-based approach involving government, private sector, civil society, development partners and other key actors in the value chain.</p> <p>EnDev envisions the development of the higher-tier cooking market in Ethiopia to shift from the pre-commercial to the pioneering phase that can be accelerated by creating necessary framework conditions to boost entrepreneurship. Therefore,</p>
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<ul style="list-style-type: none"> • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>facilitating a conducive environment and capacitating key actors in their steering and coordination roles, by raising awareness and commitment, and filling gaps in knowledge, skills and stakeholder exchange would continue to be a focus of EnDev.</p> <p>EnDev Ethiopia will continue strengthening its existing partnership with the Ministry of Water and Energy (MoWE) to ensure that higher-tier cooking options are sufficiently reflected in the proposed Energy Sector Strategy.</p> <p>EnDev will continue to support private sector platforms such as cooking sector industry associations and the Ethiopian Clean Cooking Alliance (ECCA) to reorient some of their efforts on higher-tier cooking to ensure capacity development for the sector. In collaboration with the cookstove associations on federal and regional level, EnDev will focus on developing the businesses of higher tier cookstoves to the semi-industrial stage and will further support the few big players that have entered the higher-tier cooking sector in Ethiopia to develop and implement business plans on higher tier cooking based on demand segmentation.</p> <p>Two distinct clean cooking segments will be targeted for the upcoming EnDev implementation period in the EnDev intervention regions:</p> <ol style="list-style-type: none"> 1. Higher tier (tier 3) cookstoves (pellet burning stoves, ethanol stoves etc.) 2. ECooking stoves (Tier 5) for baking and cooking <p>As of now, Biomass Higher Tier 3 (Briquette burning stove) is clearly categorized under HTC under EnDev project. The market segment for the biomass Tier 3 cookstoves is planned to be households where briquette producing technology is promoted including in humanitarian settings like Gambella Region.</p> <p>The eCooking segment interventions will initially focus on on-grid areas and will further explore areas with off-grid connections where opportunities to promote eCooking are viable (e.g. mini-grids).</p> <p>This approach is deemed the most conducive for creating momentum and learning vital lessons/business cases for higher tier solutions, while moving forward with the sector. EnDev is planning to launch an innovation challenge fund under the HTCC associated project to get appropriate technologies. In collaboration with the applicable stakeholders and based on a minimum energy performance requirement, the selected HTC technologies will be tested and promoted under this sub-component for dissemination. Via the innovation fund, the RBF financing mechanism will be geared towards supporting higher tier technology producing companies in expanding their distribution networks. EnDev, with SNV in the lead, will promote clean cooking testing services in the public and private sector</p>
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via awareness creation, skills development, and material and technical support.

The market assessments on the potential of eCooking conducted by EnDev shows that, given the raising costs for biomass and LPG, in most grid-connected (urban) areas, electric cooking is already a cost-efficient and viable alternative. Moreover, the Government of Ethiopia is making steady plans to increase its power generation capacity to 17 GW from current 5 GW by 2030 (100% renewable electricity generation³⁷). As a result, a slow but steady increase in the use of electric stoves in urban areas can already be observed, but still lag well behind their potential to reach rural households even to those connected to the electricity grid. This is due to limited awareness creation, grid reliability and the low purchasing power of consumers.

In this sub-component, EnDev aims to reach significant number of households with higher tier cooking technologies using customised business models. Furthermore, EnDev aims to ensure that higher tier cooking is prominently featured in the upcoming national cooking energy programme MoWE is developing, and that improved testing and certification services are available for the private sector. EnDev will also advocate fitting eCooking solutions to the national mini-grid program where technically viable.

In general, the HTC activities under EnDev Programming are highly complementary with the HTCC project:

1. Stimulate the demand for HTC solutions (not covered by HTCC)

- Awareness creation and behavioural change communication
- Access to financial support for LNOB groups (selected very low-income groups) via working with local community groups and/or clean cooking advocates (through introduction of e.g. seed money/revolving fund, viable payment models) to acquire HTC

2. Supplement HTCC intervention potential areas.

- Evidence-based studies (e.g. supply chain/value chain analysis) to assess the potential of joint venture investment to promote semi-industrial level manufacturing of HTC
- Develop guidelines that can address regulation-implementation continuum impediments of Higher tier cooking technologies (stoves and fuel)
- Initiate/facilitate the development of institutional stove national standards

³⁷ [Ethiopia Africa RE SP.pdf \(irena.org\)](#)

	<p>The HTC component will include adoption of a LNOB strategy to pilot a) smoke free villages in collaboration with NBPE+ and DREAM projects and b) Clean Energy Condominiums (CEC) through promotion of HTC.</p> <p><u>Knowledge development and sharing:</u> Demand assessment in collaboration with HTCC associated projects, findings of studies and surveys as well as best practices of successful and scalable businesses will be presented and promoted to create awareness and foster resource mobilization and up-scaling. Knowledge products will be specified jointly with stakeholders to ensure alignment with existing gaps and avoid overlap.</p> <p>In addition, the project will benefit from the EnDev Learning and Innovation Agenda and will feed its experience and knowledge into the global exchange format through the delivery of findings and key surveys.</p> <p>Gender:</p> <p>Activities used to enforce a gender-transformative approach will be geared to meet the gender-transformative approach by including the four tenants of the 2022 reviewed Gender Action Plan (i.e. gender responsive energy access, enterprise development and job creation, women’s representation, voice and leadership in the sector, and strengthening institutional capacity), adapted to fit Ethiopia’s gender climate based on findings from the Gender Analysis.</p> <p>Building on gender mainstreaming efforts, addressing Gender Equality and Social Inclusion (GESI) will be cross-cutting throughout the project design and implementation. The project will benefit from the EnDev Gender strategy, its operational guidelines and experiences from previous EnDev Gender Analysis and Gender Action Plan.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. • 	<p>SNV will be the lead implementing partner for this sub-component. The approach for this sub-component is jointly developed by GIZ and SNV.</p> <p>The Ministry of Water, and Energy (MoWE) remains the main political and implementation partner for EnDev Ethiopia at the federal level. At regional level, EnDev complements and leverages activities of Cooking Associations and Regional Energy Bureaus.</p> <p>The biggest synergy is ensured via the RVO/EU co-financed HTCC project and its Energy Enterprise Coach on training activities, enabling environment and capacity building initiatives. EnDev collaborates with the Development Bank of Ethiopia (DBE) to leverage access to finance to private sector and beneficiaries. EnDev leverages joint sector approach and framework improvement measures being co-chair, on behalf of GIZ, at the Cooking energy donor sub-group under Energy Development Partners Group (EDPG).</p>

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p><u>Financial Sustainability:</u> Simplified and customized loan schemes by selected financing institutions, RBF, investment in research and innovation for lowering cost and increasing efficiency will continue to benefit both the demand and supply side as a basis for market development. Furthermore, supporting the existing endeavour of accessing the carbon market will contribute to the financial sustainability of the cooking energy market.</p> <p><u>Institutional Sustainability:</u> Anchoring the EnDev activities under the Government led National Clean Cookstove program, ownership and improved capacities from relevant public and private sector actors will ensure institutional sustainability.</p> <p><u>Technological Sustainability:</u> Training of public institutions experts, and ICS companies (industry) on the quality assurance of standard products as well as enforcing maintenance services, research and innovation, provision of testing facilities and performance certification using acknowledged national standard increases the technology sustainability.</p> <p><u>Ecological Sustainability:</u> By reducing the use of unsustainable raw materials under conventional cooking, the project contributes to the reduction of the environmental effects of forest degradation, massive charcoal production and sale, burning of firewood and reduction of CO₂ Emission. Use of renewable electricity from national grid or mini-grid for eCooking will also replace use of biomass and fossil fuel.</p> <p><u>Social Sustainability:</u> The project will avoid creating any inequality or social tension by engaging relevant stakeholders from the public and private sector, including women, in the planning, design and implementation of interventions, and strengthening their capacities where needed to meet the gender access goals outlined in the Gender Action Plan.</p> <p><u>Exit Strategy:</u> By creating a sustainable enabling framework, bringing private sector at the forefront and addressing access to finance with demonstrated success stories, EnDev plans to systematically intervene in the development of the sector. However, it will be premature for EnDev to exit from higher tier cooking within the next phase as the market is at its very early stage.</p> <p>Further scaling up will be anchored through collaboration with MoWE and the Energy Development Partners Working Group by anchoring higher tier cooking into the national cookstove program and through the development of a national clean cooking roadmap.</p>

<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p> <p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes</p>	<p>Cooking Energy Sub-Components: 2.1 + 2.2 – Deliverable Summary: Table 1³⁸</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>HTC</th> <th>LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>581,160</td> <td>51,880</td> <td>168,002</td> <td>1,870,069</td> </tr> <tr> <td>SI: Access to cooking</td> <td>12,014</td> <td>2,518</td> <td>5,020</td> <td>13,834</td> </tr> <tr> <td>PU: Access to cooking</td> <td>10,769</td> <td>46</td> <td>10,144</td> <td>17,155</td> </tr> <tr> <td>Cooperatives: Access to briquette producing Technologies</td> <td></td> <td>1</td> <td></td> <td>1</td> </tr> </tbody> </table>				Outcomes	Additional 07/2023 – 12/2025	HTC	LNOB+	Total by 12/2025	People: Access to cooking	581,160	51,880	168,002	1,870,069	SI: Access to cooking	12,014	2,518	5,020	13,834	PU: Access to cooking	10,769	46	10,144	17,155	Cooperatives: Access to briquette producing Technologies		1		1
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<p>Narrative</p> <p>The HTC sub-component will focus on creating an enabling environment for systematic adoption of higher tier cooking. It is envisaged to have more congenial policy and regulatory measures, access to finance and more capable private sector players operating in the market under leadership of the Government, resulting in a rapid expansion of higher tier cooking. However, these results are very difficult to quantify.</p>																													
<p>Approx. 18% of budget aimed for this sub-component. A grant agreement of 160,000 Euro is planned with SNV for supporting enabling environment for HTC. Exact scope will be outlined with SNV during preparation of grant agreement.</p>																													

³⁸ Based on ODM result dated 3 Feb 2023, however there is clear variation from OCS 2.0 assessment.

<p>under this component. This information will be used to contextualize the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 8.3 % of target people for access to cooking</p> <p><input type="checkbox"/> LNOB+:</p>
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<h2 style="background-color: #009688; color: white; padding: 5px;">Electricity sector</h2>	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) 	<p>Despite vast renewable energy potential and economic growth as mentioned previously, 66 million people in Ethiopia still lack electricity access. The average per capita electricity consumption (118 kWh) is one-fifth of the average consumption in Africa. Off-grid renewable energy solutions provide 11% of the population with access to electricity, the majority of whom 78%, live in rural areas.³⁹ Only 28% of the rural population have access to electricity compared to 90% of the urban population.</p> <p>In its ambition to achieve universal access by 2025, the Ethiopian government has recognized the need to promote different decentralized renewable energy solutions to meet the electricity demand of 35% of the off-grid population in collaboration with private sector.</p> <p>Solar PV solutions stand out as the major option to address the off-grid electrification, however, the Ethiopian solar market is still at an emerging stage.</p> <p>While capacity of both public and private sector is increasing, MoWE has recently undergone an institutional reform to accelerate electrification, and power sector reform is now a priority in order to introduce a competitive market. The core problems observed are:</p> <ul style="list-style-type: none"> • Limited supply and installation capacities • Low-quality products and services in combination with the absence of standards • Limited access to capital for solar companies and affordability for end-users, heavily constrained access to FOREX

³⁹ Adapted from <https://energy-utilities.com/ethiopia-making-progress-in-energy-according-to-news119566.html>

The ToC needs to be submitted in a separate excel file based on the respective template.

- Highly subsidised electricity tariffs, and insufficient policy support for a market-based transition
- Lack of awareness on productive use of renewable energy
- Insufficient sustainability measures for institutional solar PV systems and
- No option for sound and safe handling of used PV components exists for batteries and e-waste of solar PV solutions.

These factors are causing a negative impact on the acceptance of solar PV technologies and impacting negatively on the market.

Proposed EnDev measures will work at all three levels – Micro, Meso and Macro to support a sustainable scale for off-grid energy access program.

- At the **Micro-level**, EnDev will promote SHS or Pico PV for household interventions, solar Nano- and Mini-grids to electrify villages and customize the technology and the implementation model. Productive use of Energy will also be promoted.
- At the **Meso-level**, EnDev will continue its support to capacity development measures for relevant government agencies in energy, health or cooperative sectors and for private sector associations at the federal and regional level. At the **Macro-level**, EnDev will strengthen its policy advocacy and access to finance with relevant political partners and donor groups to roll out the national off-grid energy access program, strengthening framework for solar nano-/mini-grid development, enforcing quality standards of solar products and enacting regulatory measures on extended producer responsibility for battery recycling, among others.

To enhance the economic development potential from proposed EnDev interventions, EnDev will reinforce its efforts in validating its business cases to support proven 'Pay As You Go' and/or RBF measures. EnDev household-based energy access interventions will empower social development by allowing more opportunities for personal development and income generation. EnDev energy access interventions for social institutions will ensure better service delivery to the respective communities. The EnDev mini-grid will also enhance economic development of rural villages through affordable and durable energy access. Moreover, the project is expected to test the community cooperative-led mini-grid model for country rollout.

EnDev will further address LNOB+ by targeting displaced communities to provide electricity access with SHS, Pico PV or nano-/mini-grids, as well as supporting women headed businesses and households and electrify the chronically poor

	<p>low-income households identified under the national Productive Safety Net programme (PSNP).</p> <p>Furthermore, women-lead households will be encouraged to join mini-grid cooperatives so the cooperative can better represent the relevance of energy consumption to meet women’s needs as was recommended within the EnDev Gender Analysis.</p>
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Electrification: Sub-Component 3.1 – Lower Tier Electrification (Pico PV, SHS and Stand-Alone PV systems)

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>According to the National Electrification Plan 2.0, 35% of the Ethiopian population and public institutions will be electrified by 2025 with off-grid technologies, which will include systems like Pico PV, SHS and Stand-Alone PV Systems.</p> <p>This sub-component has three work packages:</p> <ul style="list-style-type: none"> • Electrification of households • Electrification of social institutions • Overarching activities in battery recycling and e-waste management. <p>EnDev interventions will continue to focus on key constraints along the standalone solar value chain for sustainable energy access, by filling the information gap on quality products and installations on both the supply and demand side, introducing and enforcing quality standards and functional warranty system for solar products. Moreover, the private sector needs linkages to access finance and reach regional and global solar market players and technologies. The project will also continue to support MoWE in strengthening policy and regulatory framework together with functional private sector lobby and will also bring other relevant government agencies including the Ministry of Industry, Health, Finance and the Environment Protection Authority (EPA) on board, among others.</p> <p><u>Work Package A - Electrification of Households (HHs)</u></p> <p>Under this work package, the large Ethiopian rural population will be provided with sustainable electricity access through supporting a functional Pico PV and SHS market. EnDev will continue to expand its engagement with the private sector, development partners and the government.</p> <p>The Ethiopian solar market is currently dominated by very small solar products of less than 1.5 Wp. If the NEP 2.0 targets are to be met, annual supplies of solar products will have to rise significantly by an average of 12%. Close to two-thirds of supply, or about 6.8 million units, will be met by Pico PV and the rest will be SHS.</p> <p>On both the demand and supply side, EnDev will continue the development of innovative financing instruments together with national financing agencies and Micro Finance Institutions</p>
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(MFIs) in order to enable people to purchase quality solar lighting products. One instrument for further elaboration is the 'pay as you go' (PAYGo) system for which GIZ/EnDev successfully conducted initial studies and will further build on the results of field assessments. Both PAYGo and RBF have not taken off in the Ethiopian market compared to neighbouring Kenya due to restrictive regulatory regimes and heavy bureaucracy. Ongoing reforms are being made by the current government for de-monopolizing the telecom sector and financial sector, which could pave the way for adopting innovative financing such as PAYGo and other RBF.

Awareness creation and orientation to sustainable use of technologies will further be continued towards targeted communities.

Work package B – Electrification of Social Institutions (SI)

In the upcoming programming phase, a more robust and sustainable approach will be facilitated to upscale social electrification and to establish a sustainable value chain. These activities will be complemented by activities of the EnDev Energising Health initiative.

EnDev will continue to equip selected rural, off-grid social facilities including health centres, health posts, schools, farmer training centres, etc with Stand Alone PV systems to provide basic electricity for lights and basic services (electrically operated medical equipment and others). However, the approach will be optimized based on experience and learnings from the current phase to promote more ownership and thereby leveraging complementary financing from the Government and private sector. EnDev will ensure that model electrification follows the sustainability framework, that is currently being developed under EnDev Ethiopia.

Training on Ethiopian Portal for Electrification of Public Institutions (EPEPI) will be provided for federal energy and IT experts (MoWE and MoH) on how to use and insert newly electrified public institutions data into the portal. This will serve as the verified progress mapping for the country in social electrification.

Overarching Activities for Work Package A and B

• Private Sector Capacity Building and Awareness Creation

Capacity development support based on renewed capacity gap assessment of the sector will be provided to the local solar retailers according to the already developed EnDev company segmentation tool. Solar retailers will be provided with advanced business development training including marketing knowledge. EnDev will support the retailers in promotion, awareness creation and demonstration of high-quality solar products, hence increased dissemination of pico-PV and SHS

through sales to rural households and institutions including the poorest (LNOB+) communities in Ethiopia.

Regional solar installation companies will be trained and engaged in the installation of the solar systems at the social facilities. This will ensure that local capacities for solar PV operation and maintenance are available. The installations shall be accompanied by awareness raising and user training activities involving the local districts and representatives of the social institutions in order to ensure ownership and sustainability. Training for the solar installers will be institutionalized into the national TVET system.

EnDev Ethiopia will focus in its new phase on relatively high performing solar enterprises (top 20%) for scaling up through facilitation of access to finance and demand driven technical support based on updated need assessments and customer segmentation. This will enable the best performing solar PV enterprises to take an increasingly bigger share of the market and accelerate market-based solar PV solutions.

• **Strengthening Solar Associations:**

EnDev will continue to support the Ethiopian Solar Energy Development Association based in Addis Ababa (ESEDA) and other regional associations to address the solar electrification agenda for off-grid areas. For the technical and organisational setup the newly developed handbook (Roadmap) will be further promoted. EnDev will strengthen regional associations in awareness building, market and demand generation and customer segmentation and monitoring for scaling up efforts. EnDev will further support formation of solar associations in the new regions.

EnDev shall continue to cooperate closely with the regional solar associations and ESEDA on ensuring that the associations have one voice with a concerted and harmonised approach towards strengthening the solar industry in Ethiopia. The establishment of a National Solar Federation that serves as an umbrella for all solar associations in Ethiopia will be fostered to develop a stronger vision and mission for the sector. Furthermore, private sector associations will be linked with the German Energy Solutions Initiative (Exportinitiative Energie by BMWK) via the 'Ethiopian German Energy Partnership' programme by BMZ to promote technology and knowledge transfer from the German private solar sector.

Work Package -3 – Recycling Used Batteries and E-waste Management

Since 2019, the Environmental Protection Authority (EPA) and GIZ EnDev Ethiopia have been working together to improve the lifecycle management of used lead acid batteries (ULAB) in Ethiopia. The major developments recorded so far include: the development of a national ULAB roadmap, support to EPA on identification and coordination of public stakeholders,

development of directives and technical standards. Licensing and certification schemes and extended producer responsibility frameworks are being finalized. In the new programming phase, this overarching activity will further be strengthened until an environmentally sound ULABs recycling capacity is in place in the private sector. EnDev will continue to target used lithium-ion batteries (ULIB) and electrical and electronic equipment waste (e-waste) mainly from off-grid solar PV systems (WEEE), and further link them to electric components in new fields of EnDev activities: eCooking, SHS/Stand Alone PV systems, nano-/mini-grids and productive use of energy.

In the current phase, with support from EnDev, a private sector led Producer Responsibility Organisation (PRO) for environmentally sound management of ULAB has been established. The PRO will be further supported to achieve its mission to collect and deliver ULABs as per the standard outlined in national legislations and technical guideline requirements.

Leave No One Behind (LNOB+): Under EnDev's electrification efforts in very remote rural areas, activities will focus on extremely poor and vulnerable households where energy access is far from being achieved. The project will also address IDP (Internally Displaced Persons), and refugee camps identified in cooperation with the GIZ ESDS project, woman headed households and low-income households as identified in PSNP.

Depending on the recently negotiated peace deal between the Ethiopian government and the TPLF, the project may include the Tigray region again, which has been left behind due to recent conflicts that have also destroyed (EnDev) electrification systems and energy infrastructure.

Gender: Mainstreaming gender in technical solar installations as well as business development training sessions will be encouraged to promote more participation by women in the energy access market. In case of selection of households, priority will be given to women led households. More women beneficiaries will be involved in introducing RBF or 'Pay as you go' system along with providing access to mobile communication. In case of electrification of social institutions, priority will be given to health posts / health centres which work on maternal and child health.

In EnDev's engagement with solar associations, the project will integrate gender-sensitive and responsive business practices, as well as will provide access to gender-sensitive training to the associations and their members.

	<p>EnDev will also highlight and promote women’s leadership by profiling and promoting women in leadership roles in the solar energy market and environment.</p> <p>In line with EnDev’s Gender Action Plan, EnDev will further organise discussions and workshops centred on identifying, and challenging barriers for women to:</p> <ul style="list-style-type: none"> • Fairly accessing electricity energy within their homes • Fairly accessing electricity energy to participate in income-building (productive use) activities • Participate fairly in the off-grid electrification sector • Develop relevant skills or capacities • Have a voice in the sector <p>Learning Transfer: Public-Private dialogues together with public research and academic institutions will be used to showcase results and learning on the benefits of electrification of households, social institutions and environmental sound management of batteries. Key outcomes will be disseminated in the form of published reports, factsheets etc.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional/ impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>MoWE will continue to be the main political partner for implementation. Further collaboration with Regional Energy, Health and Education Bureaus will be ensured through joint planning and implementation. EnDev will use its experience under Energising Health, where EnDev works more closely with the Ministry of Health and its regional substructures.</p> <p>EnDev will also use its strategic position in the Donors’ development partner group, particularly in the EnDev/GIZ chaired Off-Grid Energy Access Subgroup to highlight learnings and areas of harmonisation and scale up.</p> <p>The World Bank ADELE programme includes expanding access to electricity for an estimated 750,000 households through solar solutions. EnDev will collaborate closely with the World Bank to see more tested and harmonised approaches that address financing challenges in the sector (e.g. RBF, PAYGo) as well as complementary activities on ensuring quality products in the market and upscaling of EnDev activities. A further collaboration is expected with the World Bank, especially by using EnDev’s recently developed digital mapping platform of Solar PV electrification for social institutions that was handed over to MoWE. Links will be established with the World Bank financed lending scheme through DBE for direct lending to eligible companies in the SHS/Stand Alone PV system value chain, as well as second-tier financing of eligible MFIs to support end-consumers. A coordination system will be established under the framework of Energy Development Partners’ ‘Off grid energy access’ subgroup where EnDev (on behalf of GIZ) and World Bank are Co-Leads.</p>

	<p>The project will further collaborate with UN agencies, particularly UNHCR and UN Migration to jointly work and complement activities for the IDPs and refugees. A close cooperation is expected with the Ministry of Finance and Economic Development for implementing LNOB activities under the Productive Safety Net Program (PSNP).</p> <p>As regards battery recycling and e-waste management, EnDev will strengthen existing collaboration with EPA in fine-tuning and enacting the regulations/ guidelines developed from current project. EndeDev shall continue to play an active role with MoWE in the payment systems working group that is working on mobile financing for the energy sector.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>The development and implementation of viable financing mechanisms for access to finance (RBF, PAYGo) and the establishment of private sector driver PRO and improving the lifecycle management of lead acid and new lithium-ion batteries at the new phase will help to ensure financial and ecological sustainability.</p> <p>Capacity development of relevant government agencies, strengthening of solar associations, anchoring capacity development support with TVET institutions / universities and having the Environmental Protection Authority (EPA) as a key partner for all battery management related activities will strengthen institutional sustainability.</p> <p>EnDev’s advisory services to Government on quality assurance of products and enforcement of standards, validation with regional and global market for off-grid solar technologies will ensure technical sustainability.</p> <p>Access to electricity at household level provides access to information and PUE enhances income generating activities for families. Access to electricity for social institutions ensures better service delivery. Handover of the systems to the concerned local entities ensures ownership and social sustainability of the project.</p> <p>Further development of mature, sustainable solar markets and ownership and joint implementation with MOWE and MOH to own and manage institutional solar PV installations in the health, education and agriculture sectors will be consolidated to have a safe exit strategy. Anchoring the EnDev activities under the National off-grid electrification program and collaboration within Donor consultative group as ‘Off-grid electrification’ sub-group co-chair will support further scaling up and additional financing for the sector.</p>
<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for</p>	<p>See tables for 3.1 and 3.2 under Outcome section 3.2</p>

<p>sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component</p>	<p>Approx. 31% of total budget aimed for this sub-component</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 6.7% of target people for access to electricity</p>

contributes to the thematic budget share for LNOB+.

Electrification: Sub-Component 3.2 – Higher Tier Electrification (Nano- / Mini-Grids and Productive Use of Energy)

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target group)

Solar mini-grids play a critical role in providing electricity to off-grid homes, social institutions and businesses regardless of the high investment cost. Micro-/nano-/swarm-Grids have emerged as a new innovative solution to the Mid-Tier gap between household SHS and solar mini-grids filling the MTF-Tiers (lower) 2, 3 and (upper) 4 and should be piloted in Ethiopia as well.

According to the report by SE4ALL 2019, about 16.2 million Ethiopians would be best served by renewable technology mini-grids with an estimated market size of USD 639 million. However, the Ethiopian electrification market is still unattractive for private investors due to many challenges such as highly subsidized electricity tariffs, limited local capacity on the technologies, limited forex, and a lack of financial incentives.

This sub-component will continue supporting the sector by promoting cooperative-managed and led mini/nano-grid models in rural villages as coherent solutions and develop a model for national rollout. Moreover, productive use of energy (PUE) will be promoted for economic viability, development impact, and attractiveness of mini/nano-grids.

With the promotion of PUE, EnDev assists enterprises in the solar sector to come up with an increased and efficient provision of energy with viable business models, and marketing approaches using customized renewable energy solutions, and to support the acquisition of PUE systems for relevant stakeholders. PUE promotes higher tier energy access with a focus on sustainable economic transition in community vis-à-vis the country.

The following three work packages with detailed activities are proposed under this sub-component. In addition, this sub-component will be benefited from previous sub-component on battery recycling and e-waste management activities for its environmental impact assessment (EIA) and end-of-life management of solar PV components.

Work Package A - Mini-grid

- Based on learning and experience from the EU co-funded community-run mini-grids, piloting of one model solar mini-grid in the range of 100–200 kWp run by community cooperatives can serve as a business model. Complementary financing for the distribution network by the Government of Ethiopia will create ownership from the political partners and the communities. Real time energy

monitoring will help to better understand and communicate users' consumption patterns and facilitate the introduction of fair and transparent tariff schemes.

- EnDev will assist the private sector and community cooperatives in the development and delivery of 3rd party maintenance systems, the introduction of smart metering technologies, management of the mini/nano-grids, and energy efficient appliances (such as LED lamps, solar TV etc), to reach as many customers as possible to sustain the system.
- EnDev will follow-up on the five Eu-funded EnDev solar mini-grids that are currently under construction to ensure technical and economic sustainability. These include establishment of a coordinated monitoring scheme on technical output and business models.

Work package B – Micro-/Nano-/Swarm-grids

- EnDev plans a feasibility study for the demand and potential of micro-/nano-/swarm-grids in rural Ethiopia and potentially test two pilots with a capacity ranging between 200 W - 2kW including smart metering systems for smart tariffing.
- The concept of local SHS based swarm-grids (swarm electrification) based on integration of existing SHS will be tested in two selected sites with potentially 30-50 households (HHs) promoting a pilot peer-to-peer electricity trading network.
- Integration of existing solar home systems needs to have low voltage AC/ DC network and bi-directional smart meters integrated with ICT with the future of handling mobile payment system, customer service and remote monitoring.
- EnDev will share field experience of micro-/nano-/swarm-grids technology and business models from Asia and Africa with key stakeholders.

Work Package C - Productive Use of Energy

- EnDev will expand awareness and promotional activities for PUE technologies, development of knowledge products to support evidence-based learning
- EnDev will advise on how to initiate further upscaling of the already proven PUE systems with support from government and development partners. Updating business models based on field experience and training on business models to the suppliers, SMEs cooperatives, end-users and financial institutions and government representatives will be provided.
- Continued support to existing beneficiaries (farmer cooperatives and SMEs) on the proper use of PUE equipment they now own, aiming to ensure their prolonged service.
- Supporting research institutions to develop/reverse-engineer solar drying system/solar irrigation to be used for a large amount of agricultural produce (e.g. grain, coffee).
- Development of dynamic financing mechanisms in collaboration with and building upon EnDev SEFFA and

other GIZ agricultural projects and new financial intermediaries that work closely with the beneficiaries.

- Continuation of the already conducted PUE potential assessment that was undertaken by GBE (Green People's Energy) for the EnDev solar mini-grid sites.
- Limited equipment and maintenance support (e.g., via financing agreements with the cooperatives who own and manage the mini-grids).

Policy Intervention: The activities planned under the mini/nano-grids sub-component may substitute the heavy burden of subsidy in the newly drafted Mini-grid Framework while activating more cooperatives (and private sector) to up-scale and meet the National Electrification Plan.

Stakeholder Agreement and Training: A technology outlook for Ethiopia and the next steps will be agreed upon with political partners and key stakeholders. It will include a roadmap for finances and institutional capacity development including training for relevant mini-/nano-grids stakeholders. The component activities will strengthen partnerships with MoWE and Cooperative Agencies both at the federal and regional levels.

Market development: The project is expected to promote appropriate business cases for solar mini-grids as well as nano-grids to demonstrate the feasibility and bankability and pave the way for private sector investment in Ethiopia.

Leave No One Behind (LNOB+): Mini/nano-grids will particularly target communities that are far off the national grid and internally displaced populations (IDP), e.g. drought prone areas affected by climate change or areas within political and ethnic conflicts.

Higher Tier Cooking: The mini/nano grid activities will be linked to the use of higher tier cookstoves as part of a broader aspect of humanitarian energy access, for example using electric pressure cookers, or even efficient electric stoves for injera baking for increased economic activity in the selected villages with mini/nano-grid.

Gender: The sub-component will focus on mainstreaming women's participation in cooperative leaderships, training sessions, and workshops. The component will further emphasize women as beneficiaries of the PUE interventions and support women's advocacy NGOs to mobilize community awareness and engagement. Women headed households and businesses, will be supported to benefit from the energy access created.

Learning Transfer: Conferences and public-private dialogues together with public research and academic institutions at home and regions will be used to showcase results and

	<p>learnings on the benefits of electrification through mini/nano grids, findings and lessons learnt. Key outcomes will be disseminated in the form of published reports, factsheets etc.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing g (incl. co-financing), etc., and / or support interconnections with other sectors <p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The project activities will be implemented with MoWE as the main political partner. In sustaining the cooperative framework, the Ethiopian Cooperative Commission (ECC) is a lead policy partner. Regional Energy Bureaus, the Ethiopian Electric Utility (EEU), and agricultural agencies will be implementation partners.</p> <p>Further cooperation with solar associations, national skill agencies and MFIs are envisaged. Moreover, synergy will be established with development partners promoting off-grid electrification, such as the DREAM project (GEAPP/SNV), UNDP off-grid program, WB GOGLA and AfDB mini-grid program.</p> <p>Potential equity financing for solar power plants will be explored via World Bank’s ADELE. If the EU enters into the Multi-Annual Financial Framework 2021-2027 (MFF) with Ethiopia following the recent peace agreement, additional co-financing will be sought to upscale some mini-grid activities that will currently come to an end in 06/2023. The World Bank’s ‘Productive Use of Energy’ is also pertinent both for off-grid and mini-grid consumers under the ‘Ethiopia Power Sector Reform Program (PSRP)’.</p> <p>The approach on PUE will be based on existing German TC Project ‘Green Peoples’ Energy’ implemented in close cooperation with ongoing EnDev. The project will continue collaboration with GIZ energy projects in the energy sector and agricultural projects on the above PUE pilots (Green Innovation Centre for the Agriculture and Food Sector (GIC), Strengthening Rural Value Chains (SRVC), Avocado & Sesame).</p> <p>Other collaboration entities who can support PUE activities are the Agricultural Transformation Institute, Agricultural Research Centres, and the RE private sector associations.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is 	<p>‘Productive use for energy’ will be integrated into the business model of nano-/mini- grids to ensure financial sustainability. Successful business models will trigger complementary funding from Development Banks (e.g., WB, AfDB).</p> <p>The project will be implemented together with MoWE under the framework of national mini-grid development for off-grid electrification. The establishment of a stakeholder platform with a supportive role for the ECC (Ethiopian Cooperative Commission) as well as training manuals and guidelines hosted at MoWE to ensure institutional sustainability.</p> <p>Ecological sustainability – No fossil fuels, smart technologies and energy efficiency will avoid CO2 and reduce the amount of hardware. Sustainable battery waste and e-waste management will be addressed through EnDev overarching activities.</p>

<p>there proper handling of e-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Globally accredited technology and standard specification will be used in the project, study trips to best practices in similar countries and involvement of national research institutes will assure technological sustainability and adaptation on the ground.</p> <p>Social sustainability – site selection and formation of cooperatives with active participation of communities and local leadership will be done in a socially inclusive and gender sensitive way involving gender-based community organisations.</p> <p>Ownership and handover to the empowered MoWE and its subsidiaries, and to ECC and follow up with donors to leverage additional financing for the sector under LCG platform will be part of the exit strategy.</p>																									
<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ul style="list-style-type: none"> • the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and • the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 	<p>Electricity Sector: Sub-Components 3.1+3.2 – Table 1⁴⁰</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>285,497</td> <td>25,289</td> <td>1,108,076</td> </tr> <tr> <td>SI: Access to electricity</td> <td>7,904</td> <td>7,361</td> <td>9,004</td> </tr> <tr> <td>PU: Access to electricity</td> <td>328</td> <td>39</td> <td>1,183</td> </tr> </tbody> </table> <p>Electricity Sector: Sub-Components 3.1+3.2 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </tbody> </table> <p>Narrative</p> <p>Creating an enabling environment will be overarching for both sub-components mentioned above. An outcome expected is to have more congenial policy and regulatory measures, access to finance, successful business model and more capable private sector players operating in the market, resulting in a rapid expansion of solar electrification for HH, institutions and MSMEs and higher tier access. However, these results are very difficult to quantify.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	285,497	25,289	1,108,076	SI: Access to electricity	7,904	7,361	9,004	PU: Access to electricity	328	39	1,183	Outputs	Applicable	Details	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>		Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	
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⁴⁰ Based on ODM result dated 3 Feb 2023, however there is clear variation from OCS 2.0 assessment.

<p>2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC. indicators (if applicable)</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 37% of total budget aimed for this sub-component</p> <p><input checked="" type="checkbox"/> LNOB+: <i>included in access to electricity for households under sub-component 3.1</i></p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Solar PV technologies are environmentally benign energy solutions. However environmental and social impact assessments will be conducted before installations of mini-grid, nano-grid or larger solar PV systems for social institutions. The provision of environmentally sound disposal of solar PV batteries is included in EnDev’s intervention of ‘sustainability framework’ in order to establish a sustainable value chain.</p> <p>When establishing larger off-grid systems (e.g. mini-grids) that come with productive use of energy, there is a potential social risk of inequality due to the priority given to some consumers. This risk might also result in people doing harm to the systems which can be prevented by engaging with the community to ensure ownership (“our system”) and providing information on the extension potential to additional consumers.</p> <p>Another risk is a lack of or inefficient operation of the system. This risk shall be overcome by providing training for maintenance, linking up to local service providers and sound</p>
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	<p>operation to build trust in the reliability of the system and advantages of electricity, as well as enforcement of standard equipment and accessories.</p> <p>The Gender Analysis also highlights the risks associated with scale-up of women-led and women-owned energy businesses - i.e. that during the scale up stage, the leadership gets taken over by men. Financial institutions should thus be lobbied to design, market and implement innovative financial service packages targeting women in energy.</p> <p>While the activities in EnDev’s gender action plan highlighted may empower women energy business owners, such risks mean that campaigning of gender-centric campaigning should be with numerous actors in the business environment, and that any capacity building should be done to meet needs at a higher level of management, rather than just to fill gaps.</p>
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Budget				
<p>Please indicate your requested core budget using the table “Budget overview”.</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.</p>	<p>Final budget for project period incl. co-financing</p>			
	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
	1	Core-budget (c.f. quotation price above)	5,000,000	
	2	RVO (DGIS/EU)	1,500,000	HTCC project (01/2023-09/2025) relevant estimated share from 07/2023 – associated project = no contribution to Core outputs
	3	IKEA-Foundation	1,500,000	SEFFA regional project (01/2021-12/2023) relevant estimated share for Ethiopia from 07/2023 – earmarked funding = contribution to Core outputs
	4	EU	tbc	Cost-neutral extension until 12/2023, estimated share
		Total estimated budget	8,000,000	

8. Kenya

Acronyms

AMFI	Association of Micro-finance Institutions
AfDB	African Development Bank
BDS	Business Development Training
CCAK	Clean Cooking Alliance of Kenya
Chamas	Informal co-operative society
EnDev/GCF	Green Climate Fund co-financed project
EPRA	Energy Regulatory Commission of Kenya
ESDS	GIZ project Energy Solutions for Displacement Settings
GoK	Government of Kenya
HH	Households
HTC	Higher Tier Cooking
ICS	Improved Cookstoves
ISAK	Improved Stoves Association of Kenya
KEBS	Kenya Bureau of Standards
KEREA	Kenya Renewable Energy Association
KIRDI	Kenya Industrial Research and Development Institute
KNBS	Kenya National Bureau of Statistics
KNCCS	Kenya National Clean Cooking Strategy
KNES	Kenya National Electrification Strategy
KOSAP	Kenya off-grid Solar Access Programme
KPLC	Kenya Power and Lighting Company
LME	Last mile Entrepreneur
LNOB	Leave no one behind
MECS	Modern Energy Cooking Service
MFI	Micro-finance Institutions
MoEP	Ministry of Energy and Petroleum
MSME	Mico-small and medium sized Enterprises
NITA	National Industrial Training Authority
PU(E)	Productive Use (of Energy)
RBF	Result based financing
SASRA	SACCO Societies Regulatory Authority
SEFFA	IKEA co-funded project Sustainable Energy for smallholder farmers
SI	Social Institution
VSLA	Village Savings and Loan Association
WISEe	Women in Sustainable Energy and Entrepreneurship

Summary and key data

Promoted technologies		Pico-PV, SHS, eCooking, improved cookstoves	
Type of Energy		Solar, biomass	
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Interventions by EnDev Kenya contribute to the strategic impact areas, in particular Energising Lives and Energising Opportunities, contributing to energy access for HH, SI and MSMEs, including job creation. The promotion of renewable energy/climate-friendly technologies (incl. HTC) result in reduced GHG emission, thus Energising Climate.</p> <p>The overall objectives of EnDev are moving the cooking sector towards HTC (eCooking and ethanol), scaling up PUE and providing access for particular vulnerable groups (LNOB+).</p> <p><u>Key interventions:</u></p> <p>Cooking and Solar for PU and SI Establishment of training opportunities for LME’s (with specific focus on female entrepreneurs), systematic demand and awareness creation. Further interventions are access to finance mechanisms, such as performance-based Result based Financing (RBF), focussing on PUE and SI and linking distributors/suppliers with financial intermediaries and the support to CCAK and MoE in developing policies and standards for cooking PU and SI.</p> <p>The focus in HTC is the development of access to finance models for suppliers and end-users to increase last mile distribution channels and support affordability of appliances. Further support is giving to the Ministry of Energy and Petroleum (MoEP) supporting with the eCooking strategy.</p> <p>The humanitarian component focuses on the promotion of supply, distribution and use of improved and HTC solutions and solar appliances among HH, SI and MSMEs through a mix of market based and social approaches, combined with research and studies to foster an enabling regulatory and legal environment.</p> <p>EnDev cooperates with strategic partners from the GoK, NGOs and international partners, e.g. (MoEP), Kenya Power, Women in Sustainable Energy and Entrepreneurship (WISEe), Modern Energy Cooking Service (MECS).</p>		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 3,200,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	20%	22%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	16,166 people	N/A	16,166	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Cooking / thermal energy for households	1,042,066 people	69,150	38,774	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for social infrastructure	93 SIs	0	0	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for productive use / income generation	7,165 MSMEs	0	203	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>31% of the Kenyan population live in urban areas while the national access rate for improved cooking stands at 35%, and the electrification rate is estimated at 75%. In 2021, the GoK via the Energy Compacts re-affirmed its commitment to universal access to modern energy services (clean cooking and electricity) by 2030 as part of its development agenda. The National Energy Policy (2018), the Kenya National Electrification Strategy (KNES) and the Bioenergy Strategy (2020) complement the Energy Compacts as the principal policy and strategy instruments for promoting access to modern energy services. In addition, the Kenya National Clean Cooking (KNCCS) and eCooking strategies are currently under development.</p> <p>Kenya through KNES has identified off-grid options such as mini-grids and stand-alone solar systems as least-cost electrification options to complement grid extension and intensification and estimates to do 2.94 million more connections by 2030⁴¹. In its updated NDC, the GoK committed to reduce GHG emission by 32% (42.9 MtCO₂e) by 2030, with the electricity and cooking sub-sectors identified as priority areas for contributing to these targets. In its Clean Cooking Compact 2021, the GoK committed to transition all public institutions by 2025 as well as all MSMEs by 2028 to higher tier cooking solutions.</p> <p>EnDev is aligned with the GoK's goal of achieving universal energy access. The objective being to contribute to transformation of the energy sector by developing and strengthening the value chain (supply, demand) of ICS for institutions and MSMEs, HTC (ethanol and eCooking for HH use) and off grid PU solutions. The focus of the project interventions will be on enhancing income generation and productivity improvement potential of cooking (ICS and HTC) and</p>
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⁴¹ Kenya Clean Cooking Energy Compact

	<p>electricity solutions, support energy access interventions especially in vulnerable settings and social structures.</p> <p>EnDev is implemented in collaboration with partners and projects such as Government ministries, tertiary institutions, Clean Cooking Alliance of Kenya (CCAK), Kenya Renewable Energy Association (KERE), SACCO Societies Regulatory Authority (SASRA), MECS, Kenya Off-grid Solar Access Programme (KOSAP) and complements the Green Climate Fund co-financed project (EnDev/GCF) targeting a country wide adoption of ICS Kenya and Senegal.</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate Excel file based on the respective template.</p>	<p>a. While the cooking sector in Kenya is progressing in general terms, e.g., with EnDev/GCF and KOSAP being implemented, market development is rather slow for ICS for SI and MSMEs and higher tier cooking market segments a scenario that is more pronounced in humanitarian settings. The enabling environment (policies and regulation) is weak on enforcement or still in development stages, and sector data and target groups are not readily available to be considered in existing strategies.</p> <p>The distribution structure for ICS for SI and PU cooking is characterized by informal entrepreneurs with limited business skills and low participation of women. On the demand side the adoption is still low, partly due to limited awareness and ability to pay. For HTC solutions (eCooking, ethanol), penetration is still low, due to inadequate distribution channels, high infrastructure investment costs for distributors and high upfront acquisition costs for customers. Additionally, the sector lacks proven business cases and funding opportunities. However, several actors, some of them women led, are engaged in local production and distribution of bio ethanol devices and fuels.</p> <p>For humanitarian settings, there are a range of biomass stoves available which are locally produced by the private sector (including those produced by the local artisans/producers and those produced in a formal industrial set-up) with high variety in quality and production capacity. The availability of HTC solutions (EPCs, pellet and other higher performing biomass stoves) is low, and uptake is limited due to refugees being restricted to accessing formal financial services. There is awareness among communities on the benefits of improved cooking, however, knowledge on stove quality assessment and operation and maintenance is limited.</p> <p>b. EnDev interventions focus on market development by supporting enhancement of market structures for ICS for SI and PU, as well as HTC including in humanitarian contexts. BDS and a respective curriculum, in collaboration with NITA, shall be adopted in cooperation with TVET centers. Incubation hubs for skill development and awareness raising shall be supported to conduct trainings, with a focus on women led enterprises to increase their share in the market. EnDev will also facilitate demand and awareness creation. Linkages to</p>

	<p>financial intermediaries shall bridge access to finance gap for end-users. Within the humanitarian sector, special attention will be given to informally organised financial service providers such as VSLAs and Chamas as refugee-ID holders cannot access formally organised financial services.</p> <p>In collaboration with the GoK, MECS, UKAID, AFD and EnDev/GCF, EnDev will facilitate introduction ICS for SI and PU into the National Clean Cooking Strategy and support its implementation and coordinated data collection including ethanol and eCooking.</p> <p>EnDev will promote ICS in productive use applications among MSMEs in food vending and hotels therefore contributing to economic development. It will also promote ICS in social institutions contributing to social development while continued market support in the refugee settings contributes to poverty alleviation.</p>
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<h2 style="color: #00A68F; margin: 0;">Cooking sector: Component 2.1 – Improved Cooking in HH, SIs and MSMEs</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>In order to contribute to the Clean Cooking Compact, EnDev Kenya activities will be aimed at contributing to the GoK goal of transitioning over 20,000 plus public institutions (boarding school, hospitals, TVET institutions, prisons etc) as well as MSMEs (food kiosks, restaurants, bakeries etc) to higher tier cooking solutions by 2025/2028 by addressing barriers both on the supply and demand side. On the supply side, MSMES are limited by the ability to secure the investment required to scale up ICS production and sales, whereas the demand for ICS for institutional and productive uses remains concentrated in a few institutions, mostly in areas with better informed consumer groups.</p> <p>On ICS supply side, EnDev will support a transformation of the ICS sector from one dominated by informal sector players into formalised (legalised) business entities with a sufficient technological basis, business management capacities, access to financial markets and ability to secure investment needed to accelerate growth and sustain high level of ICS uptake among SI and MSMEs.</p> <p>The project will collaborate with the GCF project (which focuses on stoves for household uses) in building the capacity of the existing ICS producers to diversify into producing stoves for SIs and MSMEs. In collaboration with NITA, EnDev will seek to institutionalize trainings at formal training institutions (youth polytechnics and Vocational Training Centres (VTC) by developing a curriculum for capacity building on ICS matters and establish incubation hubs as centers of excellence for ICS-related topics.</p> <p>There will be a specific focus on female entrepreneurs to establish their business through incubation hubs in collaboration with WISEe. Awareness raising activities will support women to establish their business creating best practices to change the negative perception on the capability of women in the sector.</p> <p>Linkages to financial intermediaries to provide access to finance through Kenya Women Finance Trust and other funds like Spark Plus</p>

	<p>and government loans and grants platform (for both SI and MSMEs) to reduce the affordability gap and increase the number of customers (at least 30% women-led enterprises). The access to finance support will be done in conjunction with financial institutions and directed towards the participating individual entrepreneurs as well as MSMEs and will be provided as capacity building to engage proactively with the financial sector to obtain financing for investments to sustain the growth path after the end of project.</p> <p>The project will identify and engage Financial Intermediaries (SACCOs, MFIs and banks) some who are already supporting women led enterprises, and those interested in providing financing to the sector actors and end users. In addition, the project will facilitate dialogue, capacity building for and with relevant financial providers on the potential of the ICS market and the entrepreneurs. As a result, the sector will have the ability to deliver better quality products to a wider range of consumers across both the rural and urban divide, and particularly in vulnerable population groups.</p> <p>Leveraging on the already developed BCC strategy, the project in collaboration with other players such as MoH, MoEP and County Governments, sector associations such as Improved Stoves Association of Kenya (ISAK), CCAK will embark on national, regional and county level as well as grassroots awareness campaigns to create awareness and readiness for ICS adoption among social institutions and MSMEs across both the rural and urban areas. In addition, targeted awareness will be carried out for focus groups e.g. Kenya Primary and Secondary Head Teachers Associations, big consumers of biomass e.g. tea factories under the Kenya Tea Development Authority factories. County Public Health officers will be supported to create awareness amongst productive users of biomass to adopt clean cooking. The project will also explore collaboration with the sustainable Energy Technical Assistance Project to provide institutional capacity development support for implementation of energy projects.</p> <p>In creating an enabling environment for the transformation of the ICS sector, EnDev will support both the finalization of the KNCCS and eCooking strategy as well the operationalization of the Energy Compact in collaboration with other stakeholders such as MoEP, MECS, etc. The development of regulations for ICS for SI and MSMEs market will also be initiated following the recommendations from the ongoing needs assessment for the energy sector being conducted under the EnDev/GCF project.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 	<p>EnDev will collaborate with:</p> <p>MoE: Support to Clean Cooking Strategy and collaborating with MOE's on operationalizing the Behavior Change Campaign Strategy and the Bioenergy Strategy</p> <p>EnDev will support civil and private sector organizations to engage in energy planning through the Integrated National Energy Planning framework and County Integrated Development Plans (energy planning)</p>

<p>3. support interconnections with other sectors.</p>	<p>EnDev will contribute to the implementation of new energy strategies (bioenergy, energy efficiency and conservation, clean cooking strategy, electrification, gender in energy) as well as the Rapid Response Facility. Others: The project will collaborate with institutions such as REREC (hubs at energy centers), NITA (curriculum development), KIRDI (Testing), KEBS (HTC standardization) and EPRA (Regulations) sector associations (CCAK and ISAK) for sector coordination, and Financial Institutions (SACCOs etc.) on access to finance.</p>										
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<p>contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<table border="1"> <tr> <td>People: Access to cooking</td> <td>972,916</td> <td>0</td> <td>0</td> <td>6,925,606⁴²</td> </tr> <tr> <td>SI: Access to cooking</td> <td>93</td> <td>0</td> <td>0</td> <td>1,248</td> </tr> <tr> <td>PU: Access to cooking</td> <td>2,712</td> <td>0</td> <td>0</td> <td>1,842</td> </tr> </table>	People: Access to cooking	972,916	0	0	6,925,606 ⁴²	SI: Access to cooking	93	0	0	1,248	PU: Access to cooking	2,712	0	0	1,842			
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⁴² The calculation is based on the fact that EnDev serves as baseline for the GCF, hence a growing baseline of 5% annual growth is not accounted to the EnDev/GCF, but EnDev.

	<p>Enabling Environment: support MoE (data collection), and CCAK (sector coordination) enabling a conducive regulated business environment, encouraging investments and innovative business models and quality products.</p> <p>Employment in the sector and agriculture (energy for value addition), manufacturing (materials) and social-economic (women’s economic welfare)</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 17% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input type="checkbox"/> HTC: 0%</p> <p><input checked="" type="checkbox"/> LNOB+: 0%</p>

<h3 style="color: #00A651;">Cooking sector: Component 2.2 – Higher Tier Cooking</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention</p>	<p>Overall, EnDev will seek to contribute to the NDC goal for distributing over 1,4 million electric stoves by 2030 as well as the operationalization of Ethanol for Cooking Master Plan via a market-based approach aimed at responding to the issues facing the HTC value chain.</p> <p>In the last phase, EnDev identified electricity and bioethanol as viable and sustainable higher tier cooking (HTC) fuel alternatives to the common biomass fuel used in households, MSMEs and social institutions. To establish market viability, EnDev supported a market development intervention for eCooking through Results Based Financing (RBF) pilot project implemented in collaboration with CLASP. The objective being to utilize the results and outcome of the pilot to advise potential support for scaling. Based on learnings from this pilot, EnDev will seek to enhance the HTC market by implementing the following demand and affordability enhancing support to the eCooking (on-grid) and ethanol, markets segments to achieve increased uptake:</p> <p>RBF mechanisms for suppliers and distributors of ethanol stoves and eCooking (EPCs) solutions to address the underdeveloped distribution infrastructure, limited last mile demand creation networks and low</p>

<p>areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>penetration of the technologies in the market. The companies will be expected to utilize the RBF incentives to among other things, offset costs of extending distribution infrastructure (for ethanol), enhancing last mile promotion and marketing (HTC) and motivate and train existing LMEs further to adopt HTC technologies as part of their income generating line of products/portfolio. EnDev will promote local production of bioethanol to ensure fuel supply and empower local business.</p> <p>Close collaboration with MECS as a leading global programme in eCooking, is envisaged with the objective of complementing the awareness creation, enterprise capacity building and sector coordination initiatives that MECS are already implementing. Even though MECS has set up eCooking hubs in four counties: Kisumu, Kitui, Makueni, Nakuru, the EnDev project will seek to collaborate with MECS to scale the success of these hubs to the four EnDev clusters, enhance awareness creation activities and enhance last mile distribution to increase the number of end-users and MSMEs using solutions. EnDev will also support capacity building and business skills training for LMEs and support capacity building for supply side actors. Where possible, the project activities in relation to these interventions will be linked to energy centres structures ran by the Ministry of Energy (MoE) and other stakeholders. MECS and KPLC run 4 hubs for awareness and education purposes. EnDev will collaborate with them, to create and increase awareness, anchoring this to the GCF and MOEP BCC, and training activities for LMEs. EnDev will also leverage on AfDB and World Bank plans to pilot 100,000 HH using electricity for cooking, and support suppliers e.g. Sayona Brands to improve further their supplier chains and technical after sales services.</p> <p>EnDev will identify, engage and support value chain interventions that enhance promotion and access to ethanol stoves and fuel infrastructure. The project will explore supply side actors which are already pioneering local production and distribution of the fuel and burners such as Koko networks, Consumer Choice Ltd, e-moto fuels, Tech Limited, Leocom Limited, Green Development, Giraffe BioEnergy, Blue Frame Stoves among others and who meet the Kenya Bureau of Standards Ethanol fueled cooking appliances specification KS 2759:2018 developed with the support of EnDev⁴³. for targeted business development support, capacity building and last mile networks enhancement. This will include capacity building for LMEs currently working with EnDev in promoting other energy technologies to enhance entrepreneurship skills and knowledge of ethanol stoves and fuel.</p> <p>Foster linkages of end users and MSMEs with relevant financial intermediaries. The project will utilize an RBF design serving as an incentive for financial intermediaries interested to provide consumer</p>
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⁴³ The specifications cover among others: Emissions (not exceed a volumetric ration of 1:0.03), surface temperature (not exceed 60 degrees centigrade), combustion performance (heat 5 litres of water from 25 degrees to 90 degrees in less than 20 minutes minimum and shall boil in 30 minutes), power output (at least 1.4 kW at 45%).

	<p>financing models, such as PAYGO technology companies, HTC technology distributing companies such as Bidha Sasa, HotPoint, Burn, Scode etc.), banks, Savings and Co-operative societies (SACCOs) and Microfinance Institutions (MFIs). The RBF incentive be designed to be performance based and can be utilised to de-risk end users, adopt innovative (digital) credit products and reduce last mile distribution costs. In addition, the RBF can be utilised to support financial product development initiatives, capacity building for financial intermediaries, matchmaking forums with supplier of HTC technologies and last mile promotion initiatives for consumer financing products and services. This will be achieved by engagement and collaboration with Kenya Bankers Association (KBA) the coordinating association for commercial banks, the Association of MFIs (AMFI) and Sacco Societies Regulatory Authority.</p> <p>Exploring opportunities in the climate impact space by aligning eCooking with mitigation and resilience building. Kenya's predominantly renewable electricity supply offers a new and largely untapped opportunity for climate change mitigating and adaptation, however in order to make the case for further funding, there is a need for more evidence of the climate impact of eCooking. EnDev, together with MECS propose collaborating on a baseline study to determine the impact of e-cookers on Climate Change Mitigation and Adaptation. The results could open access to Climate Change Funds (such as GCF) and development of eCooking emission reduction standards. There are ideas (first discussions with MECS and AfDB) to link this study to carbon finance (establishing speculative carbon credits) for laying the groundwork (pipeline project) for developing carbon assets in the eCooking sector.</p> <p>On the enabling environment front, EnDev will contribute to the finalization of the eCooking Strategy being developed under the leadership of the Ministry of Energy with support from the MECS program. In addition, together with EnDev/GCF, EnDev will support MoE in developing, establishing and rolling out the cooking sub-sector data collection and reporting system/framework. The system will enable tracking of the energy sector progress and the related GHG mitigation achievements for NDC reporting. The system is expected to consolidate progress from the various sub-sectors which include cooking. EnDev will support the set-up of the system focusing on the cooking sub-sector which will support data collection, knowledge aggregation and dissemination to the wider energy sector system that then reports to the national MRV framework.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 	<p>MECS as a strategic partner in HTC will collaborate with EnDev in consultation with CLASP to scale the success of the eCooking hubs concept to all four EnDev clusters.</p> <p>Kenya Power Lighting Company (KPLC): The electricity utility company serving 8 M customers in Kenya. EnDev seeks to collaborate in promotion of eCooking technologies.</p> <p>HTC Manufacturers and Distributors, such as KOKO Networks and other actors, who build and deploy networks of ethanol fuel dispensing infrastructure (e.g. KOKO points) for cooking and stoves in peri-urban</p>

<p>3. support interconnections with other sectors.</p> <p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 3. support interconnections with other sectors. 	<p>and rural areas. EnDev supports interventions addressing affordability, awareness and income generation.</p> <p>EnDev/GCF: EnDev seeks to collaborate with the project to build capacity of LMEs to widen their product portfolio to include both ethanol and eCooking solutions. Further collaboration in supporting MoE in the eCooking strategy.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial: Support to private sector through a market-based approach and promote commercially viable products/distribution models. Capacity building through sensitisation/training of financial services providers.</p> <p>Institutional: Enhanced capacity for energy enterprises will ensure compliance standards and guide investments on HTC distribution systems.</p> <p>Technological and Ecological: e-appliances pose a risk regarding management at waste. However, existing regulations on e-waste management provide general guidance and EnDev supports MECS in improving after sales services and return of faulty appliances to the manufacturer. A paper from MECS and Strathmore university is being developed to address quality standards for eCooking which will be aligned with EnDev’s work.</p> <p>Social: EnDev focuses on consumer finance options to increase affordability. Ethanol is introduced as an alternative HTC solution and replacement for kerosene which is more affordable and specifically used in the informal settlements (LNOB+).</p> <p>Exit: Focusing on market development by building a strong private sector and improving distribution channels in the eCooking/ethanol market will build a sustainable and self-sustaining market.</p>

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

- i. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
- ii. the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Cooking sector: Component 2.2 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	67,230	67,230	0	6,925,606

Cooking sector: Component 2.2. – Table 2

Outputs	Applicable	Details
Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	Support consumer finance through establishment of linkages to financial institutions and offer performance-based RBF to financial institutions and companies offering PAYGo options
Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Market development support to enhance supply and demand for HTC.
Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Support the National Clean Cooking Strategy which will assess the evidence baseline studies, setting out the strategic direction for the clean cooking sector and the eCooking strategy for accelerating the uptake of eCooking in Kenya.

Cooking sector: Component 2.2 – Table 3

Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
Indicator 1:				

Narrative

Support increasing purchasing power of customers through consumer finance options. Linking end-users with financial intermediaries to increase affordability.

Regarding the enabling environment, EnDev will support research on the linkages between usage of e-Cookers and Climate Change mitigation to establish eCooking climate emission reduction and climate resilience.

<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes. Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 22% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 100%</p> <p><input type="checkbox"/> LNOB+: %</p>
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<h3 style="color: #00A68F; margin: 0;">Cooking sector: Component 2.3 – Humanitarian Context</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity</p>	<p>The humanitarian energy component will focus on Kakuma refugee camp, Kalobeyei integrated settlement and host communities and will promote supply, distribution and use of improved and high tier cooking solutions among households, SMEs and institutions through a mix of market based and social approaches as follows:</p> <p>Provision of market development support through provision of technical assistance to support to improved and high tier cooking manufacturers and suppliers to enter the market, develop last mile distribution networks for ICS/HTC technologies, raise awareness, adopt appropriate payment models and partner with financial service providers to promote improved and high tier stoves for household, SME and institutional use.</p> <p>The technology focus will prioritize biomass stoves, but in addition support the promotion of Electric Pressure Cookers, but only after thorough supply chain assessments to ensure the sustainable supply of the stoves and the fuels and clear reverse logistics.</p> <p>EnDev offers technical assistance to local stove production units to enhance technical capacity to produce, install and provide after sales services in the refugee setting. There will be a focus on provision of technical installation, O&M, and repair services and building the capacity of local stove producers to improve the quality and efficiency of the stoves to higher tier levels including the introduction of certified efficient stoves developed by EnDev/GCF.</p> <p>In line with the overall focus of EnDev Kenya, access to finance will be enhanced through sensitization and training of relevant formally and informally organised financial service providers with focus on VSLAs</p>

<p>contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>and Chamas on how to offer services to their members to uptake high tier cook stoves.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 3. support interconnections with other sectors. <p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 3. support interconnections with other sectors. 	<p>The component will be implemented in collaboration with the following stakeholders. The focal areas outline the different stakeholders that will complement our interventions.</p> <ul style="list-style-type: none"> • EnDev/ GCF project regarding building capacities of local stove production units • UNHCR and WFP – enabling environment in the Refugee camp • Lutheran World Federation, Danish Refugee Council, African Action Help International to provide access to VSLAs • Clean Cooking Alliance (CCA) – knowledge development, networking, enhancing consumer demand and strengthening the enabling environment • Modern Energy Cooking Solutions (MECS) to support institutional cooking pilots as knowledge partner • Local communication service providers including radio stations, and FilmAid • SNV initiatives such as the Kenya off-grid solar access programme (KOSAP).
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? 	<p>Financial: Support to enterprises to formalize operations and institutionalize viable distribution models resulting in market-based approach for supplying improved cooking technologies.</p> <p>Institutional: Building on the capacity of suppliers in order to enhance certification and general compliance to the existing policies and standards leading to sustainable energy business.</p> <p>Ecological: Promote reduced use of biomass to limit impact of cooking on the environment.</p> <p>Technological: Focus on supporting actors to distribute quality products and provide warranty by enhancing access to testing services and support local institutions to provide the service.</p> <p>Social: Promotion of ICS technologies will result in improved health, reduced air pollution, time savings and increased income for MSMEs and institutions.</p>

<ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? • What is the exit strategy and/or ideas for follow-up financing? 																																	
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 	<p>Cooking sector: Component 2.3 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB +</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>38,774</td> <td>1,920</td> <td>38,774</td> <td>6,925,606</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.3 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Appli cable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input checked="" type="checkbox"/></td> <td>Market development support to enhance supply and demand for ICS including HTC.</td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>Capacity building for the local stove production units to include production of HTC.</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input checked="" type="checkbox"/></td> <td>Enhanced last mile distribution networks for the ICS producers and distributors.</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.3 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Jobs created along the ICS value chain:</td> <td>41</td> <td>0</td> <td>41</td> <td>41</td> </tr> </tbody> </table> <p>Narrative</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB +	Total by 12/2025	People: Access to cooking	38,774	1,920	38,774	6,925,606	Outputs	Appli cable	Details	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Market development support to enhance supply and demand for ICS including HTC.	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Capacity building for the local stove production units to include production of HTC.	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	Enhanced last mile distribution networks for the ICS producers and distributors.	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	Jobs created along the ICS value chain:	41	0	41	41
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<p>– 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Capacity building to support market entry, strengthen last-mile distribution networks, enhance technical capacities, and professionalize operations, enhance the supply and market penetration of quality technologies.</p> <p>Awareness creation campaigns stimulate demand and enhance the adoption of technologies for use in the vulnerable setting.</p> <p>Financial linkages to facilitate partnerships, develop innovative finance mechanisms, and create awareness of lending services, enhances the uptake of HTC.</p> <p>Market development support will contribute to jobs along the value chains.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 11% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 20%</p> <p>LNOB+: 80%</p>

Electricity sector

<p>Please briefly describe</p> <ol style="list-style-type: none"> 0. the current state of the market based on the ToC for the electricity sector, highlighting key barriers 1. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways: 	<p>a. Kenya’s electricity access rate is estimated at 75% mainly contributed by the grid and complemented by small solar systems with a penetration rate of over 30% (KNBS, 2019). Electricity is mainly used for HH lighting and other basic services like phone charging. Even though KNES reports that the GoK is well on its way to achieve universal electricity access before 2030, productive use of electricity is seen as low forming the next frontier for development of the sector and its application and growth potential in agricultural production, processing and transport, especially in off-grid rural and remote areas.</p> <p>The market for solar PU and e-mobility technologies is still nascent characterised by limited and informal last mile networks as well as low participation of women in demand creation. There is also very low awareness and limited access to consumer finance for MSMEs. Viable</p>
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<p>a. Market development (developing a market for energy access technologies – mainly relating to household access)</p> <p>b. Economic development / productive use</p> <p>c. Social Development</p> <p>d. Poverty alleviation (leaving no one behind and including access in refugee settings)</p> <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>business cases for PUE are particularly lacking for PUE while data and knowledge related to the market and sector is difficult to access. Existing policies and regulations are inadequate, especially for PUE technologies market. There is limited coordination in the sector inhibiting advocacy capacity and influence on policy development and regulation enforcement. In humanitarian settings, there is low penetration of on-grid and off-grid energy technologies for use in HH, SI and PU. The main barriers include low awareness, underdeveloped distribution networks and restrictive regulations limiting economic activities, especially in refugee settlements.</p> <p>b. Key interventions by EnDev will focus on market development interventions which support enhancement of last mile distribution networks and capacitation of end users to invest in PUE solutions. Initiatives such as RBF, behaviour change campaigns and capacity building targeting to supply side actors (with interest in involvement of economically disadvantaged women) and financial intermediaries to enhance business models that are commercially viable and address economic development needs of end users (e.g. productivity improvement, income generation, reduction in operating costs and job creation). Interventions targeting social structures and vulnerable settings will be aimed at improving livelihoods to achieve social development and poverty alleviation such as in refugee settings.</p>
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Electricity sector: Component 3.1 – Electrification for Productive Use

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Results of EnDev’s interventions in the previous project phase indicated a high market potential for the PUE market segment especially in electrification of MSMEs in informal businesses as well as in agricultural value chains with key technologies being solar powered irrigation and solar drying and solar drying.</p> <p>Inputs from the Innovation Fund Technical assistance project and Sustainable Energy for small holder project (SEFFA) being implemented in Kenya, Ethiopia and Uganda has demonstrated the income generation potential for PUE technologies and the positive effect access to consumer financing has on affordability and uptake.</p> <p>In this phase, the electrification component will focus on productive use of electricity with a focus on interventions that will lead to adoption (for economic use) of off-grid technologies powered by Solar with productive use application in agricultural production, processing and other informal sectors as well as off-grids and grid-tie transport i.e., electric mobility. Key interventions and activities include:</p> <p>Strengthening last mile distribution of PUE technologies by supporting suppliers and last mile entrepreneurs to establish sustainable business models and utilizing RBF to cover distribution costs and overheads of scaling networks to rural settings. Other activities in this intervention will include capacity building and formalization of LMEs especially targeting economically disadvantaged women to stimulate their</p>
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<p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>participation in promotion of PUEs and be equipped with skills and confidence to compete with male counterparts.</p> <p>Creating sustainable demand by supporting awareness creation, behavior change campaigns and capacity building initiatives for end users. These initiatives will be aimed at enabling end users to learn about existing PUE technologies both solar and e-mobility and to be capacitated to make investment decisions on adoption of PUE technologies.</p> <p>Cross-sector partnerships and collaboration in designing and bringing to market, PUE solutions will be enhanced to encourage development of bundled products that are more suited to address end user needs. For example, bundling of solar irrigation with drip irrigation to achieve efficient water use (natural resource) and GAPs training to achieve better productivity and incomes in agricultural production along with use of a renewable energy source, solar.</p> <p>Establishing linkages to consumer financing providers to enable low-income end users to afford especially larger and higher value PUE systems. This involves a performance-based RBF for financial intermediaries and solar companies with innovative models for consumer financing to facilitate de-risking interventions for low-income end users and high-risk sectors. The RBF can also be utilized to offset costs associated with financial literacy, product development, and promotional activities. The project will also support match making initiatives with solar PU distributors, dissemination of market intelligence and showcasing of successful business cases for consumer financing among supply side and financial sector actors.</p> <p>Facilitate a responsive enabling environment by supporting forums and platforms for coordinating interactions and discussions on policies and regulations, facilitating deep dive studies and acquisition market intelligence/insights and organization of support forums for sector wide interaction and collaboration. Further focus on coordination of advocacy activities to advice on policy and regulations, development and enforcement of that enhance private sector investment, develop sector actors' capacities and enable end user access and affordability.</p> <p>EnDev support will also include business case evaluation and collaboration with PUE projects such the Solar e-Cycles (Try.ke) project supported by the Smart Communities Coalition Innovation Fund (SCCIF) to pilot a solar e-mobility pilot project in the humanitarian context. The project is in inception phase and aims to establish a viable business model of leasing electric tricycles and electric motorbikes in Kakuma-Kalobeyei area in Kenya. A positive outcome of the pilot will advise EnDev's goal of scaling the intervention of the project to reach more households and MSMEs (LNOB+).</p>
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<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 3. support interconnections with other sectors. 	<p>The project implementation will be led by GIZ and SNV (humanitarian settings) in collaboration and cooperation with:</p> <ul style="list-style-type: none"> • Government through Min. of Energy and Min. of Transport and Kenya Power and Lighting Company to coordinate initiatives relating to enabling environment and energy access in underserved counties • WISEe: For advocacy and capacity building to enhance participation of women in energy sector (gender transformative approach) • Other GIZ/SNV projects (i.e., Advancing Transport Climate Strategies (TraCS) project) to align with initiatives in e-mobility and transport sector efforts to achieving NDC • Solar e-cycles project to evaluate business model of e-mobility in refugee settings and determine EnDev support. • Other actors include Higher education and research institutions (UoN, DeKUT and Strathmore University) and sector associations like GOGLA, KERIA
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project 	<p>Financial sustainability: Support to private sector to adopt viable business models for distribution of PUE technologies</p> <p>Institutional: Enhance certification and general compliance to existing policies, standards and regulations through actor association</p> <p>Ecological: Promote technologies that reduce the impact of MSMEs on environment and contribute to achievement of NDC targets.</p> <p>Technological: Promote PUE technologies that meet quality standards including certification by KEBS or VERASOL, at least 1-year warranty and local after-sales service</p> <p>Social: Promote PUE technologies that will contribute to livelihoods improvement (cost savings and income generation), enhanced social services (better health) MSMEs, and institutions</p> <p>Exit: Support transition of the sector towards market-led interventions that promote access and adoption of PUE technologies</p>

<p>ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																					
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<p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<ul style="list-style-type: none"> • Relevant sector policies and regulations for PUE technologies as a result of the project support for coordinated and data driven advocacy. • Enhanced coordination and collaboration among actors in vulnerable HH settings including Government and Humanitarian actors.
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 39% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 0%</p>

<h3>Electricity sector: Component 3.2 – Humanitarian Context</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development 	<p>The humanitarian component in the electricity sector focuses on interventions on electricity access in the Kakuma refugee camp, Kalobeyei integrated settlement and host communities. The interventions will include:</p> <p>Awareness creation with a technology focus on solar lanterns (pico), solar home systems (SHS) and PUE technologies. This will be implemented through a Technical Assistance (TA) facility and targeting to achieve adoption by households (HH) and Micro, Small and Medium Enterprises.</p> <p>Continuous identification and capacity building of supply side actors such as suppliers and LMEs to acquire technical skills, entrepreneurial capacity so they can better promote solar and PUE technologies. Capacity building support to solar and PUE technology companies including market entry support into refugee settings, market development support to establish and strengthen distribution channels.</p>

<ul style="list-style-type: none"> • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).</p>	<p>Sensitization and training of formally and informally organised financial service providers to enable promotion and access to finance for HH solar and PUE technologies.</p> <p>Contribute to data-driven/evidence-based research and studies to foster an enabling regulatory and legal environment. This will be done by supporting frequent market information and insights gathering, advocacy action by actors in humanitarian settings and production and dissemination of findings, publications in forums at both at macro and micro levels</p> <p>Enhance interaction and collaboration of stakeholders. This will be aimed at addressing common refugee market issues with specific focus on lack of access to consumer finance and indebtedness. The stakeholders will include government, private sectors and humanitarian agencies with an objective to overcome restrictive regulation sector challenges. In this intervention, TA support will be given for facilitation of forums and platforms where coordination and collaboration of humanitarian agencies, private sector and regulatory bodies can happen to foster joint interventions and to avoidance of market distortion practices.</p> <p>There is potential and high interest from the Netherlands Embassy in Nairobi (financed through the Private Sector Development Toolkit Programme which is run by RVO) for up-scaling EnDev’s activities in the humanitarian context to expand implementation to Somalia. Considered interventions are aiming at developing a sustainable (business) model for the supply of renewable energy that (also) benefits (M)SME’s, households, or social institutions. EnDev has the knowledge and infrastructure (through the Somalia Portfolio) and the buy-in of the Country Office to implement in Somalia in close cooperation with the existing projects. However, the feasibility of this project still needs to be explored with all involved parties.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ol style="list-style-type: none"> 1. implement or complement activities, 2. leverage additional impacts, financing (incl. co-financing), etc., and / or 3. support interconnections with other sectors. 	<p>EnDev will collaborate with:</p> <ul style="list-style-type: none"> • Energy Solutions for Displacement settings (ESDS) by GIZ and Solar e-cycles projects implemented in the refugee settings • Kenya Renewable Energy Association (KEREAA) for sector coordination, knowledge development and enhancing advocacy for policy and regulations. • Rennevia for information and data on electricity access in Kalobeyei integrated settlement and Kalobeyei town • United Nations High Commissioner for Refugees (UNHCR) and World Food Programme (WFP) to coordinate energy access and enabling environment for refugee settings • Actors in Access to Finance such as the Lutheran World Federation, Danish Refugee Council etc. Targeting refugees and persons living with disabilities • Rural Electrification and Renewable Energy Corporation (REREC) and Turkana County Government for interventions targeting host communities

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial: Enhanced capacity of supply side actors and adoption of viable businesses will enable market-led energy distribution</p> <p>Institutional: Supply side actors institutionalize last mile distribution, adhere to policies and regulations resulting in sustainable enterprises</p> <p>Ecological: Promote technologies that reduce impact on the environment and effectively contribute to achievement of NDC targets</p> <p>Technological: Promote quality products certified by KEBS or VERASOL, at least 1-year warranty and presence of localized after-sales services including maintenance and repairs</p> <p>Social: Promote solar and PUE technologies that reduce cost savings and generate income, reduce air pollution for HHs, SMEs, and Institutions</p> <p>Exit: Support transition of the energy sector towards market-led energy access by stimulating viable business models that attract investments</p>												
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p>	<p>Electricity sector: Component 3.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>16,166</td> <td>16,166</td> <td>469,044</td> </tr> <tr> <td>SI: Access to electricity</td> <td>0</td> <td>0</td> <td>72</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	16,166	16,166	469,044	SI: Access to electricity	0	0	72
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<p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<table border="1"> <tr> <td>PU: Access to electricity</td> <td>33</td> <td>33</td> <td>11,188</td> </tr> </table>	PU: Access to electricity	33	33	11,188																			
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<p>Narrative</p> <ul style="list-style-type: none"> • PUE companies institutionalizing last mile marketing, promotion and demand creation strategies for PUE systems especially in rural settings. • End users are aware and capacitated to make investment decisions • Enhanced market intelligence and sector knowledge acquisition, improved coordination of activities and collaboration among sector actors as a result of supporting relevant activities of sector associations. 																								

	<ul style="list-style-type: none"> • Relevant sector policies and regulations for PUE technologies as a result of the project support for coordinated and data driven advocacy. • Enhanced coordination and collaboration among actors in vulnerable HH settings including Government and Humanitarian actors.
<p><input type="checkbox"/> Budget share</p> <p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+</p>	<p>Approx. 11% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 100%</p> <p>Building on the past work done by EnDev in the refugee settings in Kenya with a specific focus on the Kakuma refugee camp, the Kalobeyei settlement camp and the host communities, this component will also focus on increasing the market share for the higher tier technologies through a focus on the larger SHS, component-based solar systems and PUE appliances for use in the refugee settings.</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Social risks</p> <p>As women have higher barriers to participate in trainings and become successful entrepreneurs, the project focuses on gender transformative approaches. With a strong strategic partner (WISEe) to be mentors for female led-business, training women as solar and stove installers and creating awareness to reduce socio-cultural barriers that hinder women establishing/scaling up their business.</p> <p>EnDev is addressing interventions specifically to vulnerable people (strong focus on LNOB+) to be part and beneficiaries of all interventions looking at de-risking factors to be able to gain access to finance (incl. HTC), trainings and awareness raising to leave no one behind.</p> <p>Environmental risks</p> <p>Stove production: high firewood consumption and mining of soils for bricks degrades good soils for crops and vegetation. EnDev cooperates with Kenya Forestry Services to guide brick producers on planting woodlots and land reclamations measures.</p> <p>Existing regulations on e-waste management provide a basis upon which waste will be managed and EnDev supports MECS in their efforts improving after sales services and return of faulty appliances to the manufacturer.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	3,200,000	
2	SEFFA	1,200,000	The project supports MSMEs in agricultural value-chains in accessing and using solar PU systems to improve their livelihoods and increase their resilience to climate change. It expects to increase the productivity and economic competitiveness of MSMEs and other actors along the dairy and horticultural value chains in Kenya by identifying viable PUE business cases and innovations which will be ready for larger scaling up at the end of the three years of project implementation.
3	SCCIF	17,000	Solar e-Cycles (Try.ke) was selected by to implement their project on solar PU in the humanitarian context. Solar e-Cycles will launch an e-mobility solution in the Kakuma-Kalobeyei area in Kenya using solar-powered electric tricycles and electric motorbikes.
4	RVO/ABC	4,905,000	The ABC component aims to achieve a sustainable, stable and growing market for biodigesters that significantly contributes to achieving national energy access and climate targets. Through a result-based finance facility and a de-risking mechanism, it supports the installation of more than 20,000 domestic and 250 commercial biodigesters.
	Total estimated budget	9,322,000	

9. Laos PDR

Acronyms

BCC	Behavioural Change Communication
CCS	Clean Cookstove
CQC	C-Quest Capital
EAMD	Energy Access Market Development
e-cookstove	Electric Cookstove
EDL	Electricite du Laos
GoL	Government of Laos
HH	Household
ICS	Improved Cookstove
IEC	Information, Education, and Communication
ITAC	Independent Technical Advisory Committee
LWU	Lao Women Union
LYU	Lao Youth Union
NAMA	Nationally Appropriate Mitigation Action
MoEM	Ministry of Energy and Mines
MoNRE	Ministry of Natural Resources and Environment
MSME	Micro, Small and Medium Enterprises
NDC	Nationally Determined Contribution
OHS	Occupational Health and Safety
QA/QC	Quality Assurance/Quality Control
RIEM	Research Institute of Energy and Mines
SFV	Smoke-Free Village
SI	Social Institution
ToC	Theory of Change
WASH	Water, Sanitation and Hygiene

Summary and key data

Promoted technologies	 	Improved cookstoves, eCooking
Type of Energy		Biomass
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>The EnDev ICS project has successfully contributed to the establishment of an Improved Cook Stoves value chain in Laos over the past years with 457,656 ICSs disseminated under the current phase (July 2019 – December 2022). However, there have been challenges to increase its reach to geographically marginalized areas and people at the bottom of the socio-economic pyramid. The effort and progress on shifting to higher-tier cookstove (HTC) solution are not significant. eCooking sector still in early market stages (pioneering stage) as per EAMD scorecard.</p> <p>The project targets to improve its impact on livelihoods of the people at the bottom of the socio-economic pyramid through affordable and efficient ICSs as well as introduce HTC (eCooking) through piloting the Smoke Free Village (SFV) concept to move towards modern cooking solution</p> <p>Key Interventions:</p> <ol style="list-style-type: none"> Strengthen and expand the ICS supply chain network by providing specific capacity-building services to new entrants (producers, distributors and retailers) and need-based refresher training to existing businesses. Project will provide financial incentives to new producers to establish the businesses and to last-mile distributors to serve communities in the hard-to-reach areas. Furthermore, supply chain businesses and consumers can access to credit through revolving fund created using carbon revenue. RBF mechanism will be implemented to catalyze the market for eCooking. Project will work with Research Institute of Energy & Mines (RIEM), University of Laos and professional experts in R&D to develop more efficient, convenient, and safer cookstoves. An eCooking pilot project following the smoke-free village (SFV) concept being practised in Cambodia will be implemented in 10 villages. Project will initiate to develop a clean cooking forum to provide the platform for learning-sharing. Project will work with relevant ministries such as Ministry of Energy & Mines (MoEM), Ministry of Natural Resources and Environment (MoNRE) in formulation of favourable policy, strategy for the promotion of improved/modern cookstove and capacitate the provincial/local government to promote and implement them to achieve SDG7. Develop partnership with Lao Women Union (LWU) and Lao Youth Union (LYU) for promotion and Behavioural Change Communication (BMC), Lao Disable People’s Association to support vulnerable populations within the LNOB+ framework, provincial and local government to create enabling environment for project implementation. The project will create synergies and align with school meal program of WFP and CRS; SNV sectoral projects on WASH and Agriculture (e.g. SDC funded ENUFF project); and 	

	ongoing C-Quest Capital (CQC) funded ICS project managed by SNV.		
	f. Design IEC materials to disseminate the information about improved/modern cookstoves via awareness campaign, radio, television, social media, etc. Mobilizing LWU, LYU, Schools and health posts to organize the awareness events.		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 1,423,950
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	14%	18%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	240,510	12,600	77,248	
Electricity and/or cooking / thermal energy for social infrastructure	140	0	0	At least 2160 schools and 540 monasteries with feeding programs running will install institutional ICS.
Electricity and/or cooking / thermal energy for productive use / income generation	846	450	0	At least 2700 restaurants will adopt institutional ICS or eCooking for productive application.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<ol style="list-style-type: none"> With an estimated population of 7.5M inhabitants in 2022, access to electricity is close to 100% in Lao PDR (WB, 2022). Firewood and charcoal remain the predominant fuel for domestic use in rural areas. At least 87.9% of rural households use firewood and another 8.5% use charcoal. In urban areas, this ratio of firewood and charcoal is at 45.4% and 36.1% respectively, for cooking. (The 4th Population and Housing Census 2015). As part of the Paris Agreement, Laos has set multiple objectives in its 2021 NDC targets, including the introduction of 50,000 energy-efficient cook stoves annually across the country. The Lao government includes forestry as one of the pillars contributing to poverty reduction in the country for which ICS plays its role to reduce the need for charcoal and firewood. The 2011–25 roadmap of the Renewable Energy Development Strategy identifies improved cookstoves (ICS) as a specific area for promotion and development. <ol style="list-style-type: none"> EnDev helps in Laos to set up a sustainable production and market chain for a range of ICS through a threefold approach: (i) strengthening the supply chain, (ii) enhancing consumer awareness and (iii) market growth by increased geographical outreach. The project aims to increase the number of cookstoves producers, distributors and retailers to reach untapped geographical areas and improve the overall quality
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	<p>of the cookstoves by introducing more efficient cookstoves and facilities for testing/certifying the stoves. Vulnerable communities are targeted with a LNOB+ approach in collaboration with other development partners including Association for Rural Mobilisation and Improvement (ARMI).</p> <p>2. EnDev project collaborates with two government ministries in Laos: the Ministry of Natural Resources and Environment (MoNRE) and the Ministry of Energy and Mines (MoEM). Regular exchanges and joint activities with the ministries at national and sub-national levels have helped the project align with the existing policies of Laos and improve institutional stakeholders' capacities. Collaboration with Lao Women Union is instrumental in scaling women's integration by supporting women entrepreneurs and women-led businesses and helps develop Behavioural Change Communication (BCC) and household dialogue approaches. Lao Youth Union (LYU) supports the project to strengthen the distribution network by mobilising its countrywide network.</p>
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<h2 style="background-color: #009688; color: white; padding: 5px;">Cooking sector</h2>	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>• The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p><i>a. Current state of the market</i></p> <p>The CCS market in Laos is growing through the current EnDev project, The market is dominated by low-tier ceramic ICS. The project covers all the provinces in Lao PDR and is still developing naturally in areas connected to the road network and closer to urban and semi-urban locations. Remote areas are more challenging due to difficult logistics and lack of awareness reasons.</p> <p>The energy access market scorecard illustrates areas of particular focus, such as market intelligence, access to technology, access to finance, enhancement of entrepreneurial skills of the supply side actors, productive use of energy, and strengthening the enabling environment.</p> <p><i>b. Key interventions to overcome barriers</i></p> <p><u>Market development:</u></p> <p>The supply side of clean cookstoves in Laos consist of mainly two segments: low-tier biomass ICS and high-tier eCooking. The ICS market is growing but the eCooking market is in early stage. Project will target to strengthen both markets to serve the people at different levels of socio-economic ladder.</p> <p>The project will support new entrants (3 producers, 4 distributors, 300+ retailers) from remote areas to help the ICS market's natural growth in blind spots. Existing stakeholders will still be supported through training and capacity building to tap the improvement already identified. Project core targets are to continue with present models of ICS and introduce the eCooking solution through piloting SFV concept supported by RBF model at least in 10 villages from five different provinces.</p>

	<p>A marketing strategy will be established in partnership with behaviour change and communication experts to address the lack of awareness of the hidden costs of low-quality, inefficient cookstoves.</p> <p><u>Economic development:</u> Clean cooking market can transform the livelihood of people by creating economic opportunities. Supply of raw materials, production of stoves and distribution channel offers benefits to the local economy by creating jobs in supply chain, while saving costs for fuels, costs for re-purchasing poor quality baseline stoves and save time for cooking and fuel preparations. It has been expected that eCooking could contribute to economy of the country by replacing LPG which is imported in foreign currency. The revenues generated through the ICS (231800 ICS sold @US\$3.5) activities combined with the energy savings contribute to sustainably injecting money into the local economical ecosystem.</p> <p><u>Social development:</u> The project has excellent working relationships MoEM, MoNRE, RIEM, the Lao Women Union and the Lao Youth Union, and will continue working with them to create enabling environment to develop policies and planning to enhance clean cooking on a national scale. Project will work with other organizations to create a national clean cooking forum to provide the opportunity for collaboration and coordination among the like-minded organization working in clean cooking sector.</p> <p><u>Poverty alleviation:</u> In addition to the support of market development in the poorest areas, the project plans to develop special partnerships with local associations helping left-behind populations such as the deaf-mute community, and socio-economically disadvantaged women (in partnership with LWU). People from LNOB+ group will get the opportunity of employment at least in 50% of the new jobs created in supply chain. The money and time saved due to use of clean cookstove will be linked with kitchen gardening with the support from relevant sector stakeholders, The monitoring system disaggregates poorest of the poor, women-led households/MSMEs, people with disability, etc. to keeps the track of inclusion.</p>
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<h2 style="text-align: center; color: #00A68F;">Cooking sector: Component 2.1 – Clean Cook Stove (CCS)</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation 	<p>Clean Cookstove market in Laos consist of mainly two segments: low-tier biomass ceramic ICS and higher-tier eCooking. ICS market is being upscaled successfully under regular (non-RBF) EnDev funding, but HTC (eCooking) market is in pioneering phase. There is no specific policy or programme for the promotion of eCooking except ad hoc activities introduced by international agencies.</p> <p>This project will build the ICS market on the successful model established and pursue market growth by providing stakeholders with tailor-made support in capacity building, in-kind or financial support, networking, and promotional activities. The implication of local civil and institutional organisations will continue developing. The project envisages increasing the number of producers to 36 (from 33 in 2022),</p>

<ul style="list-style-type: none"> • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>distributors to 15 (from 11 in 2022), and retailers to 3,000 (from 2,700 in 2022).</p> <p>This project aims to lay the groundwork for eCooking to be included in the government’s policy and program as key driver of SDG success. Project will generate the evidence by implementing SFV concept at least in 10 villages from five provinces.</p> <p><u>Training:</u> The project will provide the following training to stakeholders:</p> <ul style="list-style-type: none"> • Technical production and quality control training to new producers to help them master the ICS fabrication processes with the most up-to-date techniques. • Refresher R&D and improvement trainings to all to upgrade the ICS towards more efficient stoves • Marketing training and communication tools to the distributors and retailers, following the national marketing framework. • Management and business administration training, to help reinforce the companies' economic sustainability. • Behavioural change communications related to the productive use of cooking energy and eCooking. • Provide repair-maintenance training to service providers to implement effective after-sale service system <p>Producers including all the value chain actors will be trained on QA/QC and OHS</p> <p><u>Access to Finance:</u> The project will set financing mechanisms to help informal businesses establish and grow sustainably:</p> <ul style="list-style-type: none"> • Seed Money: The project will provide financial incentives to new producers to invest on equipment such as a clay mixer, kiln construction, a set of moulds for each cook stove design, etc. Based on need assessment, existing producers can also be supported by small investment to encourage them to adopt more efficient and effective tools and equipment. • Revolving Fund: All ICS businesses (producers, distributors and retailers), eCooking vendors/suppliers and MSMEs for PUE will receive mainly expertise from the project staff, but they can access to credit (max 50% of their investment plan) to improve their businesses on clean cooking through a revolving fund. This revolving fund has been created using the carbon revenue received under the separate ICS project being implemented by ARMI/SNV under the gold standard • Distribution Incentive: No financial support will be provided to distributors and retailers, but free promotional tools are given along with the trainings. However, financial incentives will be provided to last-mile distributors to serve communities in hard-to-reach areas. • End-User Finance: No direct financial support is provided to the end users. Prices are regularly negotiated by the project staff. This increases the sustainability of the market by avoiding market disruption. • RBF: In case of eCooking, RBF mechanism will be implemented to catalyze the market. <p><u>Evidence, learning transfer, and innovation:</u></p>
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The project in collaboration with RIEM and ARMI will pursue efforts to increase the efficiency of the household and institutional improved cookstoves produced. The research findings will continue to be shared among producers nationwide through training and quality control activities.

An Assessment of Modern Energy Cooking Solutions is currently underway and will be followed by lessons from Cambodia's Smoke Free Village approach in a pilot project covering ten villages. The topic seems particularly promising as access to electricity is close to 100% in Laos, and many local dishes can be cooked with electric cooking devices. Furthermore, modern electric cooking solutions will have even better impacts than ICS and potentially develop higher technology in local industries.

An exposure visit will be organized for eCooking promoters/implementors to learn the best practices from successful eCooking initiatives.

Policy, advice and capacity development:

The project collaborates with the Ministry of Energy and Mines (MoEM) for optimisation of local production of ICS and market sustainability (quality assurance/labelling, R&D). It will pursue its efforts to sustain the ICS market over the years and help institutional stakeholders develop their skills in that matter. The topic of certification and labelling in Laos is in the maturation stage with the trademark finalised and designs agreed upon.

Evidence generated from SFV pilot project will be used to influence the government stakeholders and work with relevant ministries: MoEM and MoNRE to formulate eCooking policy and strategy for the promotion of clean cookstoves and capacitate the provincial/local government to promote and implement them to achieve SDG7. Such opportunities to successfully support a whole value chain in its quality improvement can positively impact other sectors, such as agriculture products or other manufactured goods. The project will strive for the establishment and enforcement of national cooking standards.

Partnerships and alliances:

SNV and ARMI are partners in C-Quest Capital's carbon-financed ICS project in Laos. The project currently is leveraging opportunities from this project to strengthen the capacity of producers and increase sales revenue, which will continue in the subsequent phase. Furthermore, the project will continue to leverage the carbon revenue received under the separate ICS project being implemented by ARMI/SNV under the gold standard to provide loans to ICS producers willing to improve their production capacity and diversify products.

The project will create synergies and align with school meal program of WFP and CRS; SNV sectoral projects on WASH and Agriculture (e.g. SDC funded ENUFF project); and ongoing CQC funded ICS project managed by SNV.

Awareness raising:

Awareness of the negative impacts of traditional cooking and the costs/benefit of switching to ICS is still needed to be raised among the targeted populations in remote areas. It will be addressed explicitly within the established national marketing strategy mentioned earlier

	<p>based on modern marketing and behaviour change expertise. This strategy will help increase awareness of the advantages of ICS and use modern communication tools such as social media to reach Laos's young and already connected population. Project will work with LWU, LYU, Schools, Health posts to create the awareness and organize the awareness campaign.</p> <p><u>LNOB+</u>: The project makes it best to have ICS available in all areas and at a price affordable to all. Project will collaborate with the local associations such as Lao Disable People's Association, LWU, etc. for helping left-behind populations. Project will create an environment to ensure that 50% of the total new jobs created in supply chain markets benefits to people from LNOB group. The project plans to develop a production and training centre in the Deaf and Mute Community Center in Luangprabang, which currently provides vocational education to 80 deaf and mute students to help them become self-sufficient. The project will incentivize last-mile distributors to serve communities in the hard-to-reach area. Project will collaborate with SNV sectoral projects on WASH and Agriculture to reach the ultra poor people through voucher schemes. SNV and ARMI are partners in C-Quest Capital's carbon-financed ICS project in Laos and resources will be leveraged from this project to serve ultra poor people. Project will also seek to collaborate with other like-minded organizations to reach to unreached area with incentives.</p> <p>Revolving fund created using the carbon revenue received under the separate ICS project being implemented by ARMI/SNV under the gold standard will be mobilized through cooperatives, micro-finance institutions and women's group and provide soft loan to women entrepreneurs, women-led businesses (supply chain or PUE) as well as to those poor people who did not receive voucher scheme.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<ul style="list-style-type: none"> • Cooperation with Ministries and local organizations help strengthen quality assurance, R&D, distribution and production improvements. • Collaboration with LWU helps reach the vulnerable populations targeted in the LNOB+ framework and provides helpful Behavioural Change Communication (BCC) insights. • Joint programmes with ARMI and CQuest capital help leverage additional resources to improve value chain sustainability by increasing production volumes and margins for stakeholders. • Collaboration with Oxfam to disseminate ICS to cassava farming families helps bring additional support to enhance the production and distribution of ICS. • Collaboration with Lao Youth Union helps strengthen the distribution network in remote areas. • Collaboration with sectoral projects on WASH and Agriculture will help to reach the marginalised people through voucher schemes. • Collaboration with WFP and CRS in their school program to disseminate institutional stoves.

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<ul style="list-style-type: none"> • The ICS market is showing good financial sustainability: sales are currently increasing, and the companies are profitable and growing. Financial support to new businesses and limited support to existing ones prevents market disruption while helping them realise a good profit margin through stoves sales at an affordable price. It is expected that natural growth of demand, access to financial resources, equipped with qualified technical workforce and business skill will make these businesses financial sustainable. • Institutional stability will be ensured through the participation of government agencies under the framework of the Government's energy action agenda and investment prospectus. The project will also support stakeholders to exchange ideas and knowledge about their businesses. • Ecological sustainability will be ensured through the increased performance of ICSs, resulting in fewer emissions and preservation of the forest resources. Supporting producers to make their processes clean and efficient, and implementing the reuse and safe disposal of production wastes will help safeguard the environment. E-waste management plan will be developed to manage the waste products of eCooking. • Technical Sustainability will be ensured through design optimisation of stoves, capacity strengthening of producers and distributors, compliance of quality standards and quality control, user satisfaction, and enforcement and compliance of after-sales services. • Social sustainability will be achieved through effective behavioural change communication, compliance with a quality assurance protocol, creating demonstration effects, and collaboration with local authorities and partners. Diversified products (stoves at different tier levels) will be made available to meet the needs of the people at different levels of socio-economic ladder and dissemination of affordable and low-cost ICS will be continued to cater to the needs of people with lower affordability. Preference will be given to poor and marginalized people to be benefited from jobs created in supply chain. • The key to exit will be the realisation of a profitable clean cooking sector. Favourable policy and strategy will be in place and private sectors are capacitated to implement the program. National framework for clean cooking will contribute to create synergies and collaboration among the stakeholders working in clean cooking sector. Institutional capacity will be strengthened to regulate the sector ensuring QA/QC system in place. Develop financial instrument with Finance institutions to mobilize the credit through micro-finance institutions (MFI), cooperatives, women groups, etc. Develop retailers to act as one-stop shop to deliver the multiple services such as information, technology, credit, after-sale service, etc. Customers can access to all the services via one-stop shop in post project phase.

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

- 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
- 2) the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Cooking sector: Component 2.1 – Table 1

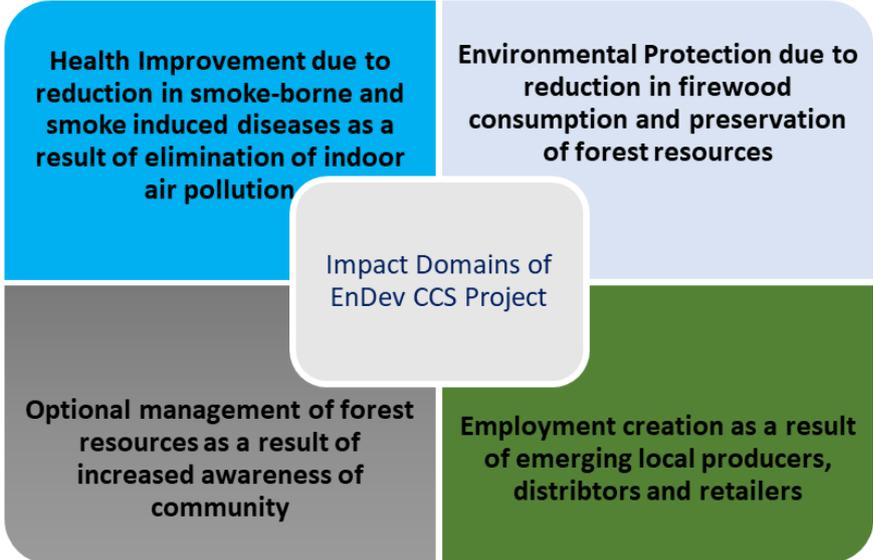
Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	240,510	12,600	77,248	240,510
SI: Access to cooking	140	0	0	140
PU: Access to cooking	846	450	0	846

Cooking sector: Component 2.1 – Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	At least 600,000 people will be reached through cooking demos and community awareness initiatives, to meet the target of 235,800 units sold.
Indicator 1.2: +25% customers reached by fin. products	<input type="checkbox"/>	The customer will pay the full price of cookstove. They will not be provided with direct financial incentives. However, they will be linked with other development initiatives and credit providers to enhance their affordability. Similarly, RBF mechanism will be implemented to catalyse the market for eCooking.
Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	By the end of the project, 36 ICS production companies and 10 eCooking vendors/suppliers will be active in the sector producing/supplying 231,800 ICS and 4000 e-cookstoves till the end of 2025.
Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	At least 10 ICS production companies will manufacture and sell 4,900 ICS for institutional/productive uses.
Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	The project will strengthen the capacities of Government and non-government actors in quality assurance, testing, R&D and behavioural change communication.
Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	Cookstove stakeholders will integrate cookstove into their routine activities, for example, LWU will use their funds for demand activation and behavioural change communication.

Narrative

The project ensures a self-propelling ICS market allowing affordable access to products and services through strengthened enterprises, with a capacity to deliver quality products, and understand the market. Communities will adopt sustainable practices to reduce smoke-borne diseases. The Government realises the need to support communities

	<p>with clean cooking solutions, develop a conducive regulatory environment, and enforce legislation. The water boiling tests for ICS carried out in April 2019 by REMI indicate that stoves will save up to 51% of the firewood in comparison to the commonly used baseline Tripod Stove.</p> 
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes. Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 100% of the total budget</p> <p>Approx. contribution to thematic budget for:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> HTC: 14% <input checked="" type="checkbox"/> LNOB+: 18%

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>The project activities will not have significant environmental and social risks. During the firing process of ICS, carbon-based impurities burn out and carbonates and sulfates begin to decompose. The impact is different for different kiln types. The amount of CO2 emission in the firing phase of the ceramic ICS will be slightly higher for open-fired kilns than for closed kilns. Keeping this in view, the project has started supporting the producers to replace open kilns with closed ones in the current phase. Improvements in kilns will continue in the subsequent phase. These kilns use less fuel and emit less smoke. The life cycle assessment is essential to calculate the environmental impact of the production phase of the ICS.</p>
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	<p>The project will consider occupational safety and health (OSH) of the workforce in the ICS production, house wiring and repair-maintenance of e-cookstoves. This is an important area and sensitises the producers/service providers to anticipate, recognise, evaluate and control hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. E-cookstove users will be trained about the safety measures to be considered while using and maintaining the e=cookstove.</p> <p>The project will ensure that the producers do not hire child labours.</p>
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Budget														
<p>Please indicate your requested core budget using the table "Budget overview".</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".</p>	Final budget for project period incl. co-financing													
	<table border="1"> <thead> <tr> <th>#</th> <th>Donor</th> <th>EUR</th> <th>Brief description of co-financing (max. 200 characters w/o spaces)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Core-budget (c.f. quotation price above)</td> <td>1,423,950</td> <td></td> </tr> <tr> <td colspan="2">Total estimated budget</td> <td>1,423,950</td> <td></td> </tr> </tbody> </table>	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)	1	Core-budget (c.f. quotation price above)	1,423,950		Total estimated budget		1,423,950		
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10. Liberia

Acronyms

AECF	African Enterprise Challenge Fund
CCA	Clean Cooking Alliance
DSS	Demand-Side Subsidies
EPA	Environmental Protection Agency
HTC	Higher Tier Cooking
ICS	Improved Cookstove
GoL	Government of Liberia
LEAP	Liberia Energy Access Practitioners (private sector association)
LESSAP	Liberia Electricity Sector Strengthening and Access Project
LNOB	Leave No One Behind
MME	Ministry of Mines and Energy
MoH	Ministry of Health
NDC	Nationally Determined Contribution
NES	National Electrification Strategy
NGO	Non-governmental Organization
OGS	Off-grid solar
PAYG	Pay-As-You-Go
RBF	Results-based Financing
REASL	Renewable Energy Association in Sierra Leone
RESMAP	The Renewable Energy Strategy and Master Plan
RREA	The Rural and Renewable Energy Agency
SHS	Solar Home Systems
WB	The World Bank
WIRE	Women in Renewable Energy

Summary and key data

Promoted technologies			Improved cookstoves, eCooking, SHS	
Type of Energy			Solar, biomass	
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev's interventions in Liberia aim to increase access to modern and affordable energy services by creating momentum and providing support for the still nascent clean cooking and off-grid solar sectors. In this programming period, interventions will focus on supporting the market development for clean cooking. Within the electricity component, EnDev's interventions will complement the implementation of the DSS pilot in Liberia, thus also contributing to programme's Leave No One Behind (LNOB) agenda.</p> <p>At the centre of the cooking component, a results-based financing (RBF) facility will provide improved cook stove (ICS) producers with the necessary financial resources to scale their production, thus reaching 19,000 people. Further interventions will help build a supportive enabling environment for the cooking sector, thus laying the foundation for the successful implementation of the RBF facility and the overall sector development. These include trainings and capacity building activities for ICS producers, and awareness raising activities to boost demand for high-quality products. Additionally, policy advisory interventions aim at entrenching clean cooking capacities with the respective regulatory authorities, and promote clean cooking as a priority area for energy policy making in Liberia. Within the electricity component, EnDev's will promote the enabling environment, building capacities for government and private sector alike, and support awareness raising. As a cross-cutting topic, EnDev will continue its support and capacity development for Liberia's private sector association Liberia Energy Access Practitioners (LEAP).</p> <p>EnDev's interventions prioritize sustainability, with financial, institutional, ecological, technological, and social sustainability in mind. Safeguarding elements will also be implemented, including gender-sensitive awareness raising campaigns and requirements for the prevention of child labour, discrimination, sexual harassment, trafficking, and environmental protection.</p>			
Programming period	01.07.2023-31.12.2025	Indicative core budget	EUR 1,100,000	
	Higher tier cooking (HTC)		Leave no one behind (LNOB+)	
Approx. thematic budget shares	4%		50%	
Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators

Energy for lighting / electrical appliances in households	10,005 people	N/A	5,025	N/A
Cooking / thermal energy for households	23,927 people	1,180	11,261	N/A
Electricity and/or cooking / thermal energy for social infrastructure	98 SIs	N/A	50	N/A
Electricity and/or cooking / thermal energy for productive use / income generation	5 MSMEs	N/A	0	N/A

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> 1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) 2. EnDev's overarching objectives in the markets being supported 3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Liberia is one of the poorest countries in the world, with more than 52% of its 5.2 million inhabitants living in poverty. Inadequate access to healthcare, education, and basic utilities is a major challenge facing the country.</p> <p>Despite steady growth in the last decade, electricity access in Liberia remains at a low 27.5% nationwide (World Bank, 2023), with rural areas disproportionately affected (> 5%) compared to urban areas (20%). Off-grid solutions, such as mini-grids and solar lights, are the primary means of electricity access, accounting for approximately 21% of the population, while the national grid accounts for only 7%.</p> <p>Nearly 95% of the population relies on firewood and charcoal for cooking, posing significant health risks and contributing to deforestation (-3.6% net loss from 2010 to 2020). Clean cooking access non-existent at 0%. Cooking gas is expensive and only available in Monrovia and a few major county urban areas.</p> <p>Energy is a priority for the Government of Liberia (GoL). The National Electrification Strategy (NES) provides a roadmap for achieving universal access to electricity by 2030, with the national grid serving 70% of the population, mini-grids serving 11%, and off-grid solar (OGS) products serving 19%. The Renewable Energy Strategy and Master Plan (RESMAP), published by the Rural and Renewable Energy Agency (RREA), aims to provide access to 250,000 solar lamps and 250,000 improved cookstoves (ICS) by 2030. The country's Nationally Determined Contribution (NDC) aims to reduce greenhouse gas emissions by 64% below projected business-as-usual levels by 2030, with a 40.6% reduction in GHG emissions from the energy sector.</p> <p>In line with the priorities of the GoL, EnDev's overarching objectives in Liberia are to improve the enabling environment for the cooking energy and OGS sectors, improve business capabilities and support market expansion through trainings and a results-based financing (RBF) facility, and conduct awareness raising activities to boost</p>
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	<p>demand for quality products. EnDev coordinates and aligns its activities closely with its political partners, the Ministry of Mines and Energy (MME) and RREA. To further the Leave No One Behind (LNOB) agenda, the co-financed Demand-Side Subsidy (DSS) component, implemented in cooperation with the World Bank's Liberia Electricity Sector Strengthening and Access Project (LESSAP), will establish a subsidy facility to target the poorest and most vulnerable communities.</p>
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Cooking sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>The cooking sector in Liberia is still extremely nascent. Cookstove producers are primarily artisanal and lack business models providing a clear pathway to scale and commercial viability in the near term. Most ICS found on the market are metal charcoal coal-pots and improved wood stoves. There is no data available on the use of HTC and clean fuels, such as bioethanol or biogas.</p> <p>Over 95% of households in Liberia rely on biomass for cooking, with charcoal used predominantly in urban areas and firewood in rural areas. This highlights the potential market for improved stoves and other bioenergy solutions. However, initiatives to incentivize people to switch to cleaner solutions have been mostly ineffective due to the high cost compared to the use of biomass, limited access to these solutions, ample forest areas providing a ready supply of fuel, lack of effective policy instruments to cultivate the private sector, and low public awareness.</p> <p>EnDev's interventions in the cooking sector aim to address several key barriers and contribute to sector transformation. EnDev will conduct a market assessment to address the information and knowledge gaps in Liberia's ICS and HTC sector. The results of this baseline study will further help to provide targeted interventions strengthening market development for ICS products. Specifically, EnDev will focus on strengthening cookstove producers by providing training and helping companies to identify and overcome manufacturing bottlenecks. A supply side RBF will further help to scale ICS companies and contribute to providing clean and affordable energy access to consumers by providing the necessary financial resources to scale production, thus reaching 19,000 people. In support of the enabling environment, EnDev will launch a stakeholder dialogue to initiate policy action and strategic planning for the sector and build capacities for testing laboratories and standardization authorities, continue its support to the LEAP network, and conduct awareness raising campaigns amongst others. For HTC, EnDev will work with the LEAP network to promote adequate import tax regulations with the GoL and furthermore raise awareness for HTC solutions with customers.</p> <p>Through these interventions, EnDev aims to increase access to improved and affordable cookstoves for both rural and urban</p>
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	inhabitants, promote economic growth, improve the health of women and children, and leave no one behind in the transition to clean cooking.
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Cooking sector component	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>Building on an initial market assessment and baseline study to address the sector’s information gaps, EnDev will implement targeted interventions and activities to create a sustainable market for ICS in Liberia. The proposed interventions centre around capacity building for private sector and government, promoting the enabling environment, implementing a supply side RBF to provide access to finance and thus scale ICS producers, and awareness raising activities.</p> <p>Trainings are a critical component of EnDev. EnDev will support existing ICS producers to identify and overcome production bottlenecks, thus cutting down on stove prices and leading to a higher affordability of ICS. Trainings will also help targeted companies to build capacities for and conduct awareness raising campaigns (s. awareness raising below). To overcome the lack of capacities on ICS efficiency testing, EnDev will support the government or a private company to set-up and build capacities for the operation of an ICS testing facility. This intervention will be further accompanied by capacity building activities on ICS standardization for the GoL, thus enabling the government to enact ICS standards, regulations and policies to allow for a high-quality development of the cooking market.</p> <p>Access to finance is another significant intervention area. Currently, ICS producers face significant challenges to economically operate distribution chains targeting rural and remote communities. Thus, EnDev will set-up an RBF facility to financially support ICS producers to provide high-quality ICS to rural and remote communities. This will help ICS producers to sustainably scale their business operations, and make access to clean cooking more affordable and more widely available in Liberia.</p> <p>EnDev will provide advisory services to the GoL through the RREA to support access to cleaner and improved cooking energy, coordinate stakeholders in the cooking energy sector, and advice on standardization policies for ICS, and tax regulations for imported HTC products. This will help support the market development for HTC products. EnDev will also build the capacity of producers to upgrade ICS technologies and manufacturing (s. training above), and support RREA to establish ICS testing facilities. These interventions will further create a favourable environment for the development of Liberia’s ICS market.</p> <p>EnDev will strengthen partnerships and alliances with RREA, the LEAP network, and other local/international partners in the clean cooking sector to create a supportive environment for the development of the ICS market in Liberia. Most significantly, EnDev will initiate and support a stakeholder dialogue, hosted at RREA, to bring together relevant players from government, the international community, private</p>

	<p>sector and academia and shape the policy framework for clean cooking. This will help the GoL to build capacities for clean cooking and provide a supportive enabling environment for the development of the sector.</p> <p>To overcome the lack of knowledge on ICS and clean cooking observed with both urban and rural customers, awareness raising is another important intervention area. Thus, EnDev will, in cooperation with partners such as RREA and the LEAP network, support ICS producers to carry out awareness campaigns in both rural and urban communities where access to and knowledge of ICS is limited. The campaigns will promote the benefits of ICS and increase demand for the products.</p> <p>EnDev seeks to promote gender-equality with its interventions. Thus, EnDev will ensure a share of at least 30% female participants in trainings and capacity building activities. The cooperation with the Women in Renewable Energy (WIRE) network and the Rural Women’s Association will ensure a gender-sensitive design of trainings and awareness raising campaigns.</p> <p>In conclusion, the EnDev project's key interventions and activities aim to create a sustainable market for ICS in Liberia, increase access to improved and affordable cookstoves for both rural and urban households, promote economic growth, and thus also contribute to improving the health of women and children through the adoption of clean cooking technology.</p> <p>Roughly the half of EnDev targeted HHs in Liberia’s rural areas can definitively be considered as members of the “poorest of the poor” LNOB+ target group. In fact, according to WB, Liberia is on of the poorest country in the world, with its GDP of 676 (current) USD per capita in 2021 (1,564 USD, PPP => 4,28 USD per capita per day, PPP).</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev’s cooperation with the GoL, represented by RREA, MME, the Ministry of Health (MoH) and the Environmental Protection Agency (EPA), will help build capacities and create ownership for joint interventions in the sector. The cooperation with LEAP will enable the association to conduct targeted support activities for its member companies and strengthen the ICS sector. Working with local NGOs, such as the Rural Women’s Association, will help to better determine the needs and requirements of users and entrench capacities for kitchen design and promote behavioural change in local communities. The cooperation with the WIRE network will facilitate access of female technicians and businesspersons to training and capacity building activities. Finally, EnDev will seek to build partnerships and align with intl. stakeholders such as the EU, the Swedish Embassy, the African Enterprise Challenge Fund (AECF), and Mary’s Meals, to leverage additional impacts.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking</p>	<p>EnDev Liberia’s interventions achieve sustainability through multiple dimensions. In terms of financial sustainability, the proposed RBF-facility will help ICS producers to reach economies of scale, thus building a viable business model in the mid-term. Institutional sustainability is ensured through the cooperation with governmental</p>

into account the following sustainability dimensions:

- Financial – is there a viable business case in the absence of the project, or sustained alternative funding?
- Institutional – is there an enabling environment with supportive institutions?
- Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?
- Technological – is technology and know-how for replacement and repair available?
- Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?

What is the exit strategy and/or ideas for follow-up financing?

partners and the private sector that will strengthen the enabling environment and entrench capacities and ownership for interventions. EnDev’s interventions in the cooking sector promote ecologically sustainable solutions that reduce deforestation and contribute to Liberia's NDC targets. Technological sustainability is achieved through the promotion of high-quality ICS technologies. Trainings and awareness raising activities will foster knowledge and build capacities for ensuring proper maintenance and servicing of products. Finally, social sustainability is ensured through the participation of rural and vulnerable urban communities in EnDev's activities. The proposed interventions will help contribute to building an adequate enabling environment and grow and mature the still very nascent cooking market. In the mid- to long-term, this will allow for an exit of the programme.

Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

Cooking sector component 2.1 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	23,927	1,180	11,261	23,927
SI: Access to cooking	49	0	25	49

Cooking sector component 2.1 – Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Awareness raising campaigns for end-users will empower them to make informed decisions and choose high-quality products
Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	RBF-facility will help ICS producers to scale their business, and increase their market share
Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Interventions on standardization policies,

<p>For each indicator, please provide</p> <p>1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p> <p>2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	Indicator 3.2: added value of support given to stakeholder networks		stakeholder dialogue and policy advise on clean cooking for GoL
		<input checked="" type="checkbox"/>	Capacity building and operational support for private sector association (LEAP)
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 80% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 5%</p> <p><input checked="" type="checkbox"/> LNOB+: 40%</p>		

Electricity sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions /</p>	<p>The electricity sector in Liberia is in dire need of development to achieve universal access to electricity. Only 7% of households are connected to the grid, with 21% connected to off-grid sources. Rural households suffer from low electrification rates, with less than 5% connected. Liberia has plenty of renewable energy resources, with hydro potential of about 2,300 MW, some biomass, and about 1,712</p>

<p>components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>kWh/m2/year of solar potential across the country. To achieve universal electricity access by 2030, the National Electrification Strategy (NES) proposes 70% grid expansion and densification, 11% mini-grids, and 19% stand-alone solar systems/SHS.</p> <p>The main barriers to the development of the electricity sector include the lack of effective regulatory and policy support from the GoL, affordability barriers of rural populations, insufficient utilization of token-based pay-as-you-go (PAYG) payment systems, lack of existing and insufficient enforcement of product standards and quality regulations, lack of consumer awareness for high-quality products, lack of human and technical capacity, weak organization of private sector organizations, and lack of access to finance. The OGS sector is mostly characterized by small, unsophisticated companies which are mainly hand-to-mouth product resellers supported by NGO or donor-funded programmes. Most are still at the early stage of business development despite several years of operations. Few regional companies have entered the market.</p> <p>EnDev interventions will focus on market development interventions to support the development of product quality regulations and standards, government capacities to enforce such standards, and respective tax regulations for importing solar products. Building on EnDev’s past support for LEAP, EnDev will continue to strengthen the private sector organization by offering capacity building for its secretariat and providing operational subsidies. These interventions will also help strengthen the OGS sector, thus also contributing to economic development. Contributing to poverty alleviation and in-line with LNOB, EnDev pilots Demand Side Subsidies in Liberia (2022-2025) to reach the poorest and most vulnerable communities facing particular energy access challenges. In close coordination with the WB, this RBF facility will further increase accessibility to OGS products in hard-to-reach and remote areas, such as Liberia’s south-eastern region.</p>
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<h2 style="color: #00A68F;">Electricity sector component</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation 	<p>The electricity sector component of EnDev’s work in Liberia builds upon previous efforts to create a sustainable market for OGS products. The focus of this phase will be on improving the enabling environment to complement the implementation of the DSS pilot in Liberia. The key interventions and activities under this component include capacity building, awareness raising, policy advice, and strengthening of partnerships and alliances.</p> <p>In this phase, EnDev will focus on building the capacity of both the private sector and government institutions to support the development of the OGS market. To achieve this, EnDev will provide training and business development support (BDS) to the LEAP network to help them better serve their members and clients. Specifically, EnDev will provide operational subsidies to the secretariat by providing office</p>

<ul style="list-style-type: none"> • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>space and meeting venues for member meetings, and conduct capacity training measures for the secretariat. The latter will comprise an exchange and training for secretariat staff at the established Renewable Energy Association in Sierra Leone (REASL). The training will include topics such as quality assurance, business management, and marketing. This will enable LEAP to unify the Liberian OGS sector vis-à-vis government institutions and suppliers, and help build a sustainable market for quality-certified products.</p> <p>EnDev will conduct awareness raising campaigns and activities in close cooperation with LEAP, RREA, and other national/international actors in the field, such as the World Bank. These campaigns will specifically target rural communities, where access to reliable and affordable electricity is still limited. Through these campaigns, EnDev will raise awareness about the benefits of OGS and promote the use of quality-certified products. This will build demand for OGS products and pave the way for the implementation of the DSS pilot.</p> <p>Furthermore, EnDev will provide policy advice to GoL, specifically to RREA, to develop quality assurance regulations and standards for OGS products, as well as respective tax regulations (e.g., prolonging the current tax waiver beyond mid-2023). This will support the market development for high-quality products and enforce quality regulations. EnDev will also build the capacity of RREA to develop and enforce these regulations effectively.</p> <p>The key interventions and activities under the electricity sector component of EnDev’s work in Liberia are designed to create a sustainable market for OGS products, build the capacity of government institutions and the private sector, and raise awareness about the benefits of OGS. By doing so, EnDev aims to increase access to reliable and affordable electricity for rural communities, promote economic growth, and improve health and educational outcomes. The activities under this component contribute to the LNOB approach by targeting rural communities and promoting inclusive and sustainable development, and supporting the implementation of the DSS pilot.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>GIZ will implement its activities in the electricity sector in cooperation and collaboration with different national and international stakeholders. Foremost, and to leverage additional impacts in the field of electricity access for vulnerable communities (LNOB+), EnDev’s interventions will closely align with and support the implementation of the co-financed DSS pilot in Liberia. The DSS pilot is implemented in close cooperation with the World Bank, and RREA. Additionally, the cooperation with the GoL, represented by RREA and MME, will extend capacities on the OGS sector and enabling environment with the respective agencies and create ownership for joint interventions in the sector. As described under the cooking sector component, EnDev will continue its cooperation with the LEAP network thus strengthening private companies active in the energy access sector. EnDev will</p>

	<p>further reach out and liaise with international and local stakeholders to leverage additional impact and complement activities.</p>								
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>EnDev's supports market-led interventions for the OGS sector in Liberia. A gradual phase-out of the operational subsidies for the LEAP network will ensure financial sustainability of this intervention. The institutional sustainability will be ensured through capacity building and policy advice for government actors and the private sector. Ecological sustainability is promoted by supporting only Verasol-certified products, and discussing e-waste handling as part of training activities and awareness campaigns. To safeguard the project's social sustainability, activities will target and ensure the participation of rural and vulnerable communities, e.g., in awareness raising campaigns.</p> <p>The activities aim to improve and strengthen the enabling environment in Liberia, supporting a transition towards market-led interventions that promote access to OGS products and services, ensuring sustainability beyond the exit of the project.</p> <p>Roughly half of EnDev's interventions in Liberia can be considered as targeting members of the "poorest of the poor" LNOB+ group. In fact, according to WB, Liberia is one of the poorest countries in the world, with its GDP of 676 (current) USD per capita in 2021 (1,564 USD, PPP => 4,28 USD per capita per day, PPP).</p>								
<p>Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for</p>	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>10,005</td> <td>5,025</td> <td>10,005</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	10,005	5,025	10,005
Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025						
People: Access to electricity	10,005	5,025	10,005						

sustainability, attribution, and additionality).	SI: Access to electricity	49	25	49												
	PU: Access to electricity	5	0	5												
<p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Electricity sector component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input checked="" type="checkbox"/></td> <td>Awareness raising campaigns for end-users will empower them to make informed decisions and choose high-quality products</td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>Policy advice on quality standards, regulations and tax policies</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input checked="" type="checkbox"/></td> <td>Capacity building and operational support for private sector association (LEAP)</td> </tr> </tbody> </table>				Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Awareness raising campaigns for end-users will empower them to make informed decisions and choose high-quality products	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Policy advice on quality standards, regulations and tax policies	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	Capacity building and operational support for private sector association (LEAP)
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Please also highlight whether this component contributes to the thematic budget share for LNOB+.

Safeguards and risks

Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?

EnDev has identified several environmental and social risks that may arise as a result of project activities during project implementation. One risk is the potential for increased carbon emissions resulting from the adoption of new technologies, such as improved cookstoves. To mitigate this risk, EnDev will promote the use of technologies that are certified as having a positive impact on the environment, such as Verasol-certification.

Another risk is the potential for increased waste, particularly electronic waste, resulting from the electrification of rural areas. To address this, EnDev will implement proper e-waste management practices in collaboration with relevant stakeholders.

EnDev also recognizes the importance of gender equality and has committed to increasing the decision-making power and control of resources for advancing female leadership as socially accepted business owners and technicians. To achieve this, EnDev will ensure the participation of at least 30% of female participants in trainings and will implement gender-sensitive awareness raising campaigns.

In addition to these measures, EnDev will introduce safeguarding elements, such as requirements for the prevention of child labour, discrimination, sexual harassment, and trafficking, during training and capacity building activities where applicable. These measures aim to strengthen safeguards capacities with institutions and businesses.

Budget

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	1,100,122,75	
2	DGIS	3,600,000.00	DSS for solar
	Total estimated budget	4,700,122.75	

11. Madagascar

Acronyms

HTC	Higher Tier Cooking
ICS	Improved Cookstoves
LDC	Least Developed Country
LNOB	Leave No-One Behind
LTC	Lower Tier Cooking
NDC	Nationally Determined Contribution
PU	Productive Use of Energy
SI	Social Institution

Summary and key data

Promoted technologies	 	ECooking, improved cookstoves	
Type of Energy	 	Biomass, solar	
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev in Madagascar implemented by ADES contributes to further market development by continuing expanding and improving (i) its local ICS production capacities through a new kiln for the clay production and upgrading of the clay treatment equipment; (ii) finalizing the testing and scale up production for a new stove allowing a dual fuel use (wood, coal); (iii) starting cooperation investigations into the development of electricity-based cookstoves (e-cooker) together with energy storage for individual households; (iv) setting aside production capacities for solar cookers and parabolic cookers.</p> <p>As a result, 100 000 ICS will be deployed until 12/2023, 120 000 until 12/2024, and at least 120 000 are planned in 2025, depending on the success of production expansion and the development of a new stove model. ADES expects the market launch of the new dual stove in late 2023, replacing some of the current products. The launch of the e-Cooker prototyped in the first half of the project period is expected for 2025. This cooker will also allow a certain electrification of the living space of its inhabitants.</p> <p>These activities will be complemented by further increasing and empowering the ADES network of (mostly female) retailers, to distribute its stoves and the continued testing and development of new, innovative stoves. New scaling-up approaches including the development of innovative pricing and financing models to reach vulnerable groups and the poorest of the poor to expand the market more rapidly and to leave no one behind will be developed and introduced.</p>		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 540,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	53.5%	40%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	486,009 people	6,489	389,565	
Electricity and/or cooking / thermal energy for social infrastructure	1 school	0	0	
Electricity and/or cooking / thermal energy for productive use	23	0	0	

Country context

- Please briefly outline
1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
 2. EnDev's overarching objectives in the markets being supported
 3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

0. Country Context

Country facts	
Population	27,7 million
HDI	164 ↑ Total (0.53)
UN Classification	LDC
Access clean cooking	2% (urban) 0% (rural)
Access electricity	79% (urban) - (rural)

NDC Targets: the NDC targets that Madagascar has set for 2030 regarding cookstoves is that by 2030 50% of Malagasy households should have access to improved cookstoves.

To achieve this, the market would have to produce 340 000 – 700 000 cookstoves every year for these eight years. With neither a big importer nor a large producer in Madagascar producing cookstoves with an alternative fuel, this will be only achievable with mainly LTC stoves. ADES is still committed to focus on LTC and is planning to be able to produce up to 160 000 LTC stoves annually by 2030.

EnDev's Objectives

By focusing on LTC and HTC, by offering a special price mechanism for cookstoves in precarious regions of the country, by offering a modular package of cleaner cooking and environmental education in schools, by empowering female resellers, ADES is contributing to EnDev's goals of Leave No One Behind (LNOB+) and Gender Equality, while overall covering the SDGs 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 15 and 17.

1. EnDev's Alignment

- The proposed interventions are in line with the national energy and climate policies (La nouvelle Politique de l'Énergie 2015-2030/NDCs; target of 70% access to energy-efficient cookstoves until 2030).
- Inefficient usage of charcoal (urban and peri-urban areas) and wood (rural areas) endangers severely health and environment (deforestation). The proposed interventions allow a much more efficient use of these fuels (reducing the deforestation effect) plus an improvement of smoke emissions (health benefits).
- Due to high population growth, affordability constraints, and artisanal production, clean cooking access remains a major challenge. ADES was able to expand its production capacities over the past years which enables the NGO to sell stoves in high numbers and at affordable price levels,

	<ul style="list-style-type: none"> • Especially high relevance of EnDev in the development of a semi-industrial sector of ICS (focus: ICS for wood and charcoal; solar cookers as complement) which is still at a nascent stage. • High relevance of the commercial approach of ADES through which ICS production capacities are developed.
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>a. Cookstove market</p> <p>Madagascar has an extremely low access to clean cooking with less than 1 percent of the population using clean fuels and technologies for meeting their cooking needs. At the current rate of progress, the country will have 36 million people without access to clean cooking in 2030. This is a result of population growth outpacing the rate of access to clean cooking.</p> <p>Most households in Madagascar have more than one cookstove at their disposal, therefore the cookstove market is significantly bigger than the number of households. In urban areas with access to the electricity grid, one can find electric stoves, charcoals stoves and wood stoves in more affluent households, while poorer households and more rural areas boast only wood and charcoal cookstoves. According to the latest report of “Sustainable Energy for All”, 99% of the population have no access to clean cooking. Cookstoves used are mainly the traditional 3-stoneCooking with an estimated 97% of the total population. 60% of the population uses firewood for cooking. Electric or gas-cooking in their estimation thus is available to only 1 % of households.</p> <p>Supply Side: The sector is dominated by mainly artisanal producers who are not able to produce in high numbers and reach certain quality standards. In addition, there is a small number of semi-industrial producers including ADES with a country-wide outreach. Supply of higher-tier cookstoves such as ethanol and electric cookstove is only available in urban areas.</p> <p>Demand Side: ADES has an estimated market share of about 4-5% of the total cookstove market. While 89% of the rural population has no access to the grid, the potential market for on-grid electric cooking is very low and without off-grid solutions, the potential for eCooking in Madagascar will remain low.</p> <p>The willingness to pay for ICS is relatively high given the low-income levels of many households. Even first-time customers realize that they can save a lot of money by investing into a quality ICS. However, for the population in the Southern districts, regions that in the past extremely suffered from natural disasters and famines, the affordability of ICS is very limited.</p> <p>Key barriers to access to modern cooking solutions are</p> <ul style="list-style-type: none"> • low electrification rates in rural areas, • the reliability and affordability of electricity for cooking in urban areas and • The availability of affordable cooking technologies both for higher and lower tiers. • low purchasing power, especially in the South of Madagascar.

- bad infrastructure (roads, railway)
- import and transportation limitations

b. Overcoming barriers

With this proposal, ADES is tackling these barriers:

- Electrification and reliability: development of an off-grid e-cooker
- LTC: expanding production capacities to 160'000 per year.
- HTC: expanding the production and sales of solar cookers and e-cookers
- Infrastructure: further expanding sales network; this explicitly includes a majority of female resellers.

With the continuation and expansion of its product portfolio (biomass-based and solar cookstoves), ADES will safeguard and enable employment both in production and sales. With these measures, ADES will contribute significantly to economic and social development of the country. With the availability of more efficient cookstoves, as well as the proven and successful model of training and empowerment for re-sellers, the projects also contribute to poverty alleviation.

Vulnerability Index

ADES will target both urban and rural areas of the entire country. The southern part of Madagascar is in a precarious situation, with drought and starvation. From the start of ADES' operations in Madagascar, the South has been identified as the region where help is needed the most. This is still valid today, and the Southern regions qualify as LNOB+. ADES has split the Malagasy market into three income categories, based on World Bank data and information from public offices in Madagascar:



• QUANTITE (Unité)

	VENTE DIRECTE			VENTE INDIRECTE		
Box	293	152	122	0	0	0
Box GM	3	2	2	0	0	0
OLI-45b	110	56	4 000	270	143	6 000
OLI-45c	386	204	163	842	497	386
OLI-60b	132	70	55	325	169	137
OLI-60c	63	34	27	154	81	65
OLI-b	1 363	728	580	3 368	1 772	1 411
OLI-c	11 786	8 831	7 034	25 326	10 959	11 573
Parabole	98	52	41	0	0	0
TOTAL	14 259	10 129	12 024	30 385	13 821	19 582

• STRUCTURE DE PRIX (Ariary)

	VENTE DIRECTE			VENTE INDIRECTE		
Box	60 000	60 000	60 000			
Box GM	144 000	144 000	144 000			
OLI-45b	35 000	30 000	25 000	31 000	26 000	21 000
OLI-45c	48 000	48 000	48 000	44 000	44 000	44 000
OLI-60b	72 000	72 000	72 000	68 000	68 000	68 000
OLI-60c	96 000	96 000	96 000	92 000	92 000	92 000
OLI-b	12 500	12 500	12 500	9 000	9 000	9 000
OLI-c	24 000	23 000	21 500	20 000	19 000	17 500
Parabole	180 000	180 000	180 000			

• CHIFFRE D'AFFAIRE (Ariary)

	VENTE DIRECTE			VENTE INDIRECTE		
Box	17 580 000	9 120 000	7 320 000	0	0	0
Box GM	1 152 000	288 000	288 000	0	0	0
OLI-45b	3 850 000	1 680 000	100 000 000	8 370 000	3 718 000	126 000 000
OLI-45c	18 528 000	9 792 000	7 824 000	41 448 000	21 868 000	17 424 000
OLI-60b	9 504 000	5 040 000	3 960 000	22 100 000	11 492 000	9 316 000
OLI-60c	9 048 000	3 264 000	2 592 000	14 168 000	7 452 000	5 980 000
OLI-b	17 287 500	9 100 000	7 250 000	30 312 000	15 948 000	12 699 000
OLI-c	282 964 000	203 113 000	151 231 000	506 520 000	208 221 000	202 527 500
Parabole	17 640 000	9 360 000	7 380 000	0	0	0
TOTAL	374 453 500	250 757 000	287 845 000	622 918 000	288 699 000	373 946 500

The southern and Southwestern regions according to these data is very low income and will serve as an indication of LNOB+ customers.

Cooking sector: Component 2.1 – Capacity Extension and Expansion

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change

Given the ambitious goals of the Malagasy government concerning access to ICS ADES will have to invest into the current production processes in order to be able to increase production capacity from 80'000 to 120'000 products annually by 2025 and to at least 160'000 products annually by 2030.

<p>campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>This will be achieved by increasing production, distribution and sales capacity at ADES, Production capacity is to be increased with the remodelling of the kilns that ADES uses for its clay form production and the replacement of the extruder that has reached its lifetime limits; the selling and distribution investments will cover an increase of its reseller-base and their capacity to stock cookstoves.</p> <p>Many of ADES' customers today own more than one stove for cooking (stacking), to be able to adapt to the availability of fuel. To address this ADES has begun to develop a dual-fuel stove that will allow the use of charcoal and firewood on the same stove. Once the prototype is finalized, ADES will produce 1,000 units to be introduced and tested on selected markets, including a designated part to be distributed to LNOB+ communities in the South.</p> <p>As ADES is mainly selling its products via re-sellers, ADES is focusing especially on empowering female re-sellers by providing technical, marketing, and business training; this is an activity where ADES can show a specific gender responsiveness.</p> <p>ADES has developed a special pro-poor targeting. A new pricing scheme has been introduced based on a vulnerability index to provide access to modern cooking solutions to the poorest of the poor (LNOB+ regions as explained above). In the LNOB+ regions, customers can partially pay off the price in kind, by helping in reforestation and agroforestry activities (stove for work).</p> <p>Transformation By integrating suppliers and the indirect reseller network, ADES helps to transform the Malagasy cooker market and selected industrial activities. Currently, some 50% of the clay forms used in the production is sourced with local partners in Fianarantsoa and Antananarivo. ADES currently, however, will not be able to offer access to financial aid – with more than 80'000 customers per year the risks of not getting paid at all is way too big. As an alternative, ADES is working with very high subsidies on all its products, so that most potential customers can afford cookstoves. In the LNOB+ regions ADES is working in, customers can partially pay off the price in kind, by helping in reforestation and agroforestry activities.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Partnerships ADES is encouraged locally to engage in business associations and with regular meetings and workshops with the current suppliers. Further cooperation with universities in stove process design and prototype development is foreseen.</p> <p>As soon as there is a proof of concept for the dual-use cookstoves ADES will reach out to the main producers of ICS and HTC all around Africa to give them access to this technology.</p> <p>ADES makes sure that know-how is flowing freely, learning opportunities are shared and the effect is perpetuated. ADES currently has co-operation programs with:</p>

- Ministry of Education in Madagascar
- Swiss Embassy
- Several NGO and community partners in the reforestation efforts
- Power-Blox AG
- CEAS and other Swiss NGOs active in Madagascar
- International foundations that are working in similar areas in different countries
- International Clean Cooking Activities

Financial Sustainability

Price sensitivity in Madagascar is very high – the business model of ADES foresees a substantial subsidy of production cost with carbon certificates. This allows ADES to price the ICS on an acceptable level. As long as the world economy in total is not carbon neutral, ADES assumes that there is going to be a carbon certificate market, thus generating income to ADES cookstove production.

Institutional Sustainability

The project is borne by ADES with more than 20 years of experience in exactly this kind of institutional situation. The stability can therefore be guaranteed.

Environmental Sustainability

While still burning wood or charcoal, the fact that 50-85% less biomass is used for the cookers (as measured and verified by Gold Standard), ICS help reduce the pressure on forests in Madagascar and is therefore environmentally more sustainable as any of the alternatives. The clay ADES is using for its cookstoves is taken from agricultural soil where the farmers want their land to be lower due to irrigation issues.

Broken cookstoves are replaced during the warranty period of three years. ADES is using broken clay forms in their production, as the clay mix even asks for added materials before being burnt. Once with the customers, the clay part of the cooker will stay with them even when broken, but poses no danger to the environment. The metal sheeting usually is being re-used in some other form by the customers.

Technological Sustainability

With the raw materials used and production locally, ADES can also safely guarantee that the technological sustainability is granted.

Social Sustainability

ADES works socially sustainable on three levels:

i. Direct staff

By offering job opportunities with fair working conditions, access to training, equal opportunities and even financing the school fees of their staff, ADES is one of the most attractive employers in the country.

ii. Indirect staff and supplier staff

By offering job opportunities with fair working conditions, access to training, equal opportunities to resellers of ADES products that are, currently, primarily women, ADES is making sure that as many people as possible can profit from our activities.

	<p>iii. Customers</p> <p>By offering cookstoves on different technologies in affordable price categories ADES contributes to 13 of the SDGs, of which 10 are currently certified by Gold Standard. The poverty pricing model of ADES will make sure that the bigger cookstoves run by wood (OLI-45b) will be available at the OLI-28 prices in the defined poor regions. The bigger cookstoves are necessary as the average family size in these LNOB+ regions is closer to 10 than to 6 as in the other regions.</p>																																																													
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 47 % of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 30%</p>

Cooking sector: Component 2.2 – Higher Tier Cooking

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the</p>	<p>As of today, Madagascar is not an obvious place for electric cooking: A vast country without a reliable of an electrical grid even in the urban areas, it is challenged, additionally, with a non-existing long-distance electricity grid, therefore the rural population are without any perspective to being electrified for many years. Without off-grid solutions the potential for eCooking in Madagascar will remain low.</p> <p>With the availability of small-scale, off-grid and decentralized solutions for electricity production and storage, this could, however, change. ADES will invest into the prototyping of such an e-cooker and into a first series used for acceptability testing and feasibility of local production.</p> <p>The criteria for a successful e-cooker are:</p> <p>a) Affordability The components of such a cooker will have to be either sourced locally or imported from sources with a low price. This will have a consequence on longevity, as usually quality goes hand in hand with price. The more value can be added in Madagascar, the cheaper the product is going to be. With ADES' experience in raising funds and generating carbon certificates, the market price can be subsidized to a level where affordability is higher.</p> <p>b) In-line with traditions Users must be able to stick to their used cooking habits in order to adapt a new technology. Changing everything together, technology, cooking times and the way to prepare food, will most probably not work in any culture. Therefore, ADES is convinced that the approach</p>
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<p>promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>of developing an off-grid e-cooker is much more promising than the introduction of e.g. pressure cookers. Pressure cookers may not be suitable for use in developing countries due to a lack of proper training and education on their usage, as well as a lack of access to replacement parts in case of malfunction. The risks of burn hazards and explosions are very big. A pressure-less e-cooker should be a more viable option as it would be simpler to operate and less prone to breakdowns. This would make it a more sustainable and reliable cooking solution for households in Madagascar.</p> <p>c) Value added in Madagascar In order to achieve ADES's goal of creating employment in Madagascar together with EnDev's goals of energy access, it is aimed at adding as much value added as possible in Madagascar. With this ADES will be able to continue to work on EnDev's goal of LNOB+, offering stable working conditions to direct and indirect staff.</p> <p>d) Solar-powered The e-cooker will be driven by electricity generated by solar power. Given that the Malagasy people typically cook warm food three times a day with only one meal prepared during daylight, the prototype will have to include efficient, cost-effective heat storage and battery technology.</p> <p>The program foresees these steps:</p> <ul style="list-style-type: none"> • Develop 3 working prototypes (by developer in Switzerland): 12/2023 • Develop a first series of 220-300 e-cookers, already taking into regard local production possibilities: 12/2024. These will have to be able to cope with the temperatures required for cooking in a traditional way, with transport issues and availability issues (imported raw materials, machinery and tools). • Testing 200 e-cookers in an urban environment and at least 20 in a LNOB+ community: 12/2025 <p>During 2025 the scale-up of production capacity will be implemented with a target production capacity of around 10-20'000 e-cookers for 2026. In this year the carbon certification will be finalized so that these first batches can be calculated into the income stream that will start some 3 years later, in 2028.</p> <p>Solar Cookers ADES has been offering solar cookers (parabolic cookers and solar cooking boxes) from its start in 2001. The demand for solar cookers and for parabolic cookers has grown quite dramatically in 2022, although still on a low level. ADES is continuing with the strategic procurement as well as the awareness raising and trainings that ADES is offering in target markets.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p>	<p>ADES will cooperate with Power-Blox, a company with huge know-how and experience in various African countries. Power-Blox has developed a stand-alone and nano-grid solution for power generation and conservation that we can use to further develop an e-cooker prototype that Power-Blox already has established in a concept.</p>

<ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Parallel to this first development work ADES will conduct a market study for e-cookers that fulfil the requirements of ADES to make sure that ADES is not missing an opportunity outside of the current partnership with Power-Blox.</p> <p>Once the technology is shown to be working ADES will be able to expand its usage to other areas in Madagascar that need electricity generation and conservation, i.e. decentralized food processing in general, but also current areas of activities like institutional kitchens, especially in schools, with this increasing the modular value proposition ADES is already offering today.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial Sustainability Price sensitivity in Madagascar is very high – the business model of ADES foresees a substantial subsidy of production cost by registering the e-cookers for carbon certificates. This will allow ADES to price the e-cookers on an acceptable level.</p> <p>Institutional Sustainability The project will be borne by ADES with more than 20 years of experience in exactly this kind of institutional situation. The stability can therefore be guaranteed.</p> <p>Environmental Sustainability The e-cooker prototype will most probably work with a Lithium-based battery. This per se might be regarded as not being highly environmentally sustainable, but our development partner Power-Blox currently already has access to second-life battery technology and is investing into the development of alternative battery technologies (not covered by this proposal). Therefore, the proposal qualifies as environmentally sustainable, given the potential to completely replace biomass burning cookers.</p> <p>Technological Sustainability With the raw materials used and production locally, ADES can also safely assume that the technological sustainability is granted.</p> <p>Social Sustainability ADES works socially sustainable on three levels:</p> <ol style="list-style-type: none"> i. Direct staff By offering job opportunities with fair working conditions, access to training, equal opportunities and even financing the school fees of their staff, ADES is one of the most attractive employers in the country. ii. Indirect staff and supplier staff By offering job opportunities with fair working conditions, access to training, equal opportunities to resellers of ADES products that are, currently, primarily women, ADES is making sure that as many people as possible can profit from our activities. iii. Customers By offering cook stoves on different technologies in affordable price categories ADES contributes to 13 of the SDGs, of which 10 are currently certified by Gold Standard. ADES intends to introduce a

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Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Business Model Risks</p> <p>As ADES not only has a long and successful experience with projects and even industrial activities, the overall risks to the projects are minimal. ADES knows how to operate within the legal, social and environmental rules and regulations in Madagascar, its staff and partners are all well-trained in the values that an international NGO and international financing partners would expect.</p> <p>Financial Risks</p> <p>Given today's financing model with a) sales, b) fundraising and c) carbon credits, the risks from a financial perspective are limited. ADES has been working with an equilibrium of these income streams for several years now and is able to adapt its cost base within a few months if needed.</p> <p>There are risks for financial fraud, however: in the economic development community ADES representatives are often confronted with the notion that the recipients of the activities are prone to abuse available funds. While ADES has experienced this on a small scale as well, ADES has introduced internal regulations and controls that limit the possibilities of fraud and the amounts that could be defrauded. In 2023 ADES is set to re-publish its financial fraud prevention program internally.</p> <p>Operational Risks</p> <p>One of the suppliers of ADES has been confronted with a major risk in late 2022, when their factory burned down in a fire. This has shown that ADES must make sure to have more than one supplier in critical areas and that there is a similar risk for ADES' operations as well. For this risk, ADES in Switzerland has a designated emergency fund that will cover for immediate losses and can cover initial investments in case of a major breakdown.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	540,000	
	Total estimated budget	540,000	

12. Malawi

Acronyms

AgFin	GIZ Agricultural Finance
ATVET4W	GIZ Agricultural Technical Vocational Education and Training for Women
BAU	Business as usual
BDS	Business Development Support
CCC	Cleaner Cooking Camp
CM	Chitetezo Mbaula
DGIS	Directorate-General for International Cooperation
DSS	Demand Side Subsidies
EEC	Energy Enterprise Coach
EnDev	Energising Development
EU	European Union
EUR	Euro
EYA	GIZ Empowering Youth in Agribusiness
GEAPP	Global Energy Alliance for People and Planet
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoM	Government of Malawi
HH	Household
HLDE	High Level Dialogue on Energy
HTC	Higher-tier Cooking
ICS	Improved Cookstove
IEP	Integrated Energy Planning
KCJ	Kenyan Ceramic Jiko
LDC	Least Developed Country
LNOB	Leaving no one behind
LNOB+	Focused LNOB activities for a specific marginalized group
LPO	Local Purchase Orders
m	million
MEAP	Malawi Energy Access Project
MMCT	Mulanje Mountain Conservation Trust
MoE	Ministry of Energy
MSMEs	Micro, Small and Medium Enterprises
NCSC	National Cookstoves Steering Committee
NDC	Nationally Determined Contributions
NEP	National Energy Policy
NGO	Non-governmental Organisation
ODA	Official Development Aid
PAYGO	Pay-as-you-go
PAYW	Pay-as-you-want
PU	Productive Use
REIAMA	Renewable Energy Industry Association of Malawi
RVO	Netherlands Enterprise Agency
SAEP	Southern African Energy Programme
SCTP	Social Cash Transfer Programme
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All
SHS	Solar Home System
SI	Social Infrastructure

SPG	Stove Production Group
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USB	Universal Serial Bus
VAT	Value Added Tax
WASH	Water, Sanitation and Health
WB	World Bank
ZIPO	Zipolopolo ICS

Summary and key data

Promoted technologies	 	Improved cookstoves, SHS	
	 	Biomass, solar	
Type of Energy			
Summary of proposed intervention(s)	<p>Improved Cookstoves (ICS):</p> <ul style="list-style-type: none"> To overcome access barriers for HH, EnDev will focus on market development, specifically BDS along the ICS value chain and strengthening of distribution systems. As HTC interventions, EnDev will promote a new pellet burning gasifier stove in refugee settings (serving LNOB+) and urban areas as well as pilot eCooking in one mini-grid. EnDev will support the Ministry of Energy in the implementation and monitoring of the Energy Compact through and via the National Cookstove Steering Committee (NCSC). <p>Electrification:</p> <ul style="list-style-type: none"> EnDev's interventions are tailored to be complementary to co-financing projects for PU (under GEAPP and EU KoFi), electrifying SI (under EnergIce and Energising Health KoFi) and DSS. Focus on tailored BDS for solar companies, providing capacity building via expert pool and facilitating access to finance. EnDev is supporting the national e-waste policy development 		
Please describe your impact, the overall objective, and the key interventions i.e.:			
<ul style="list-style-type: none"> Training, BDS Access to Finance Evidence, learning transfer, innovation Policy advice and capacity development Partnerships and alliances Awareness Raising 			
Programming period	01.07.2023 – 31.12.2025	Indicative core budget	EUR 2,400,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	11.5%	11.4%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	29,918 people	N/A	0	New business plans, access to finance through BDS
Cooking / thermal energy for households	421,825 people	21,385	14,100	HTC stove promoted for access in displacement settings
Electricity and/or cooking / thermal energy for social infrastructure	2 SIs	0	0	
Electricity and/or cooking / thermal energy for productive use / income generation	180 MSMEs	0	0	50% of reached fish processors are women.

Country context

Please briefly outline	Overall, 98.8% of all HHs use solid fuels as their main cooking fuel (79.1% firewood, 18.5% charcoal). In rural areas even 90.9% of HH
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<ol style="list-style-type: none"> 1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) 2. EnDev's overarching objectives in the markets being supported 3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>depend on firewood, mainly use with 3-stone-fire. Accessibility and affordability of higher tier cooking solutions (HTC) remain limited to urban areas. LPG and electric cooking is available to some extent: 0.2% LPG and 1.2% usage of electricity for cooking. Biomass remains predominant also in urban areas with 18.9% firewood and 74.5% charcoal.</p> <p>Malawi has one of the lowest electrification rates in the world, with only about 12.4% of the population having access to the grid. In rural areas, with 86% of the population, the electrification rate is only 4%.</p> <p>Malawi has an ambitious long-term development plan to achieve upper middle-income status by 2063 (Malawi Vision 2063). A clean, reliable and sustainable energy supply is a key element in achieving this goal. The SDG 7 target of universal access to energy is refined and further disaggregated in the National Energy Policy (NEP). The NEP envisages 70% of new electricity connections being achieved through off-grid renewable energy solutions. The policy framework is convincing, but operationalisation is lagging.</p> <p>In 2021, Malawi was the only LDC to become a Global Champion for Energy Access at the UN High Level Dialogue on Energy (HLDE). EnDev supported GoM to develop Malawi's SDG 7 Cleaner Cooking Compact, which sets ambitious targets to ensure universal access to cleaner cooking for 25m people with 5m ICS by 2030. This will make a significant contribution to the NDC targets (6% GHG reduction to BAU, 45% of conditional targets by 2040) and to reducing deforestation.</p> <p>With a strong focus on poor, rural households and the principle of LNOB, EnDev and its implementing partners continue to play a key role in building the market for the best-selling ICS in Malawi, the Chitetezo Mbaula (CM). EnDev has contributed up to 45% of the 2m ICS achievement in 2020. A new, locally produced, affordable pellet ICS, will be added to EnDev's portfolio to pilot HTC in Malawi's biggest refugee settlement.</p> <p>As one of the three coordinating members of the multi-stakeholder National Cookstoves Steering Committee (NCSC), EnDev coordinates its activities with all relevant actors in the ICS sector and, together with them, contributes to the enabling environment for ICS in Malawi.</p> <p>EnDev's core interventions are tailored to be complementary to co-financed projects, such as GEAPP "AgEnergy" in selected PUE value chains, EU co-financed "Putting (electric) Energy to Work", Iceland "EnergICE" in Mangochi & Nkhotakota for ICS & OGS, BMZ "Energising Health" and the Dutch-co-funded "Demand Side Subsidy" (DSS) project for ICS and OGS for HH.</p>
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Cooking sector	
<p>Please briefly describe</p> <ol style="list-style-type: none"> a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers 	<p>Market development: EnDev in cooperation with UP and MAEVE will support the ICS value chain and provide professionalization and BDS capacity via trainings, which benefit all actors along the value chain. BDS training includes marketing training and cost-reflective price setting, to make ICS production, trading, and sales more profitable and attractive to the private sector partners and create wider outreach and make ICS widely available in the country. EnDev aims at</p>

<p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>strengthening the value chain, to increase resilience and contribute to a private sector driven market. Thus, EnDev sees the market for CM in transition from the pioneer to the expansion phase.</p> <p>In addition a new locally developed pellet burning HTC stove , the Zipolopolo stove (ZIPO), is being piloted. Production skills and most materials are widely available. Currently, EnDev has supported research and testing (results expected by beginning of March 2023). A second HTC pilot will start in collaboration with MMCT, who are managing a mini-grid in Mulanje. EnDev will explore eCooking opportunities in this mini-grid.</p> <p>Economic development: EnDev's main ICS PU intervention is implemented in the framework of co-financing with Iceland, complemented by core-funded actions. The promotion of the Chitofu 3-in-1, a fish processing stove for efficient parboiling, frying and smoking of fish, will be further promoted in the districts of Mangochi and Nkhotakota. The Chitofu will be communicated as one of several efficient alternatives in the EnDev core awareness raising activities.</p> <p>Social development: Access to cleaner cooking in SI is mainly achieved by leveraging interventions of other donors (e.g KfW, WFP or Mary's Meals) and GoM (e.g. school feeding programmes). Two institutional stoves are promoted: Mayanko and Institutional Rocket stove. The producers of Mayankho stoves are trained regularly to maintain quality. The cooperation with Malawi's largest producer of institutional rocket stoves is foreseen.</p> <p>Poverty alleviation: With a strong focus on poor rural households and the LNOB principle, EnDev's overall approach contributes to poverty alleviation by improving livelihoods in a country, where 50% of population lives below the poverty line). The CM is still the most cost-effective, pro-poor, entry-level technology. The ZIPO, to be promoted in Malawi's biggest refugee settlement, hosting >52,000 refugees, has a price of EUR 6. Exploding prices for charcoal and the lack of firewood in the camp make this an affordable alternative.</p>
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<h2 style="text-align: center; color: #00A651;">Cooking sector: Component 2.1 – Improved Cookstoves</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation 	<p>Training, BDS: With professionalization and BDC training, EnDev will strengthen the ICS value chain and provide business capacity to all players along the value chain: SPGs, transporters, warehouseers and sales agents. SPGs will learn more about quality, production capacity, cost-price-relation, finding customers. Some progress has been made in including transporters and warehouseers into the value chain, to provide storage and explore outsourcing to private logistics companies. Finally the sales agents are identified by EnDev's implementing partners in the targeted communities. They are the last-mile entrepreneurs supposed to reach the end-customer. Together with NCSC, EnDev will introduce good sector-wide business practices to gradually reduce donor-dependency (exit strategy). Local Purchase Orders (LPO), formalised financial procedures, quality standards, consistent serial numbering, cost-reflective price setting of the CM will form part of the practices. Good business practices will</p>

<ul style="list-style-type: none"> • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>also include the profitability of CM along the value chain. BDS training will also support/encourage the SPG to vertically integrate more segments of the value chain, such as (initial) product aggregation, warehousing and/or retailing.</p> <p>EnDev will map all value chain actors, in order to structure and orient the support and training</p> <p>With a special focus on Gender, EnDev in collaboration with the GIZ project Agricultural Technical Vocational Education and Training for Women (ATVET4W) will provide the award-winning Gender Makes Business Sense training to ICS value chain, especially to SPGs, which are 90% women.</p> <p>Access to Finance: BDS training shall lead to more business and financial literacy and access to basic finance. Aspects of the training is promoting a saving and investment culture among SPGs to be better prepared for external shocks and to invest in the necessary quality assurance tools. This will be combined with links to microfinance institutions to provide bank accounts and enable the use of mobile money for payments. Other initiatives, such as the Energy Enterprise Coach (EEC) or the GIZ Agricultural Finance (AGFin) can contribute to access to finance for business scale enterprises.</p> <p>Also the increasing number of (voluntary) carbon projects in Malawi, if following certain quality standards, could have potential to add demand and business to the enterprises established under EnDev. E.g. SPGs could become suppliers for carbon projects and other actors, aiming to acquire additional sources of finance. EnDev aims at capacitating the SPGs and other players, to become competent businesses, to respond to carbon projects and understand the rules, and distinguish between good and bad projects, thus to benefit from such interventions rather than lose their business if ICS markets are disrupted by uncoordinated carbon interventions and free handouts. This will be reflected in the BDS training.</p> <p>Awareness Raising EnDev's efforts to create demand, raise awareness and contribute to behaviour change will continue. There is currently a large and growing network of agents in more than 15 of the 28 districts with direct access to customers. Marketing activities and promotion of certain technologies (ICS, ZIPO or even eCooking) will be supported by EnDev.</p> <p>Awareness creation will also refer to the Cleaner Cooking Compact's universal access goal. Beyond classical awareness raising (incl. targeting community structures, organised groups, church structures, traditional authorities and community radios), EnDev aims to introduce a behaviour change campaign called "open fire free zones", an approach similar to the "open defecation free zones" of GIZ WASH projects. In these zones, cooking on open fires will be treated as a community problem ("your smoke is my smoke"). 100% adoption of at least ICS is the objective in these zones.</p> <p>Evidence, learning transfer, innovation EnDev aims to explore two HTC innovative approaches: promotion of the ZIPO and eCooking in a mini-grid.</p>
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	<p>The ZIPO was developed and designed as locally produced pellet stove, based on the KCJ design. It is a top-lit, forced-draft, batch-fed gasifier stove produced by a Malawian enterprise. It is sold for ~ EUR 6, affordable for the target groups. The pellet value chain is based on groundnut shells and wood industry residues, currently taking off in Malawi. Pellet prices are competitive with charcoal. ZIPO and respective pellet distribution chains are combined. After a first HH study on usage and performance, the next step is supporting wider market entry, particularly in the Dzaleka refugee camp (LNOB+), where the pellet-burning ZIPOs are a solution for fuel shortages. Also in Lilongwe, end-user sales shall be realised. Specific awareness campaigns, including cooking demonstrations will create demand. Further eCooking, based on a 220 KW mini-grid, will be explored with the future implementing partner MMCT.</p> <p>Policy advice and capacity development EnDev addresses enabling environment, including supporting the GoM to implement the Cleaner Cooking Compact, which was adopted in 2021 and sets the vision for universal access to clean cooking by 2030. EnDev will continue to influence the GoM by building the capacity of the Ministry of Energy (MoE) to coordinate the implementation of the Compact and cooperate with SEforALL on monitoring progress through their Integrated Energy Plan for Malawi.</p> <p>Partnerships and alliances Together with NCSC, EnDev will support the implementation of the commitments and support the NCSC to be the exchange platform for all sector players.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev supports and strengthens NCSC, which is chaired by the MoE. NCSC works with all relevant players in the sector (incl. “Modern Cooking for Healthy Forests” (FCDO and USAID) and Irish Aid and in future UNDP). NCSC aims at including carbon projects as well, which is followed by some, but not all carbon projects.</p> <p>Building on the Energy Compact and in strategic partnership with SEforAll, EnDev has contributed to the Integrated Energy Planning (IEP) for Malawi and will explore cooperation with MECS, when backstopping the eCooking pilot.</p> <p>Together with WB, EnDev is preparing a DSS intervention (through a co-finance agreement with DGIS) for ICS and solar products. DSS is complementing EnDev’s BDS and awareness raising activities.</p> <p>GIZ will be working with 5 implementing partners, i.e. local NGOs: MAEVE, MMCT, Sunfire Social and international NGOs: United Purpose/Self-Help Africa and Welthungerhilfe.</p> <p>Since 2013, EnDev organises the annual nation-wide Cleaner Cooking Camp (CCC) led by the NCSC.</p> <p>EnDev will explore complementarity and synergies with other GIZ projects, such as AgFin or EYA.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and</p>	<p>Financial sustainability is the objective of the BDS and access to finance efforts.</p>

sustainable way taking into account the following sustainability dimensions:

- Financial – is there a viable business case in the absence of the project, or sustained alternative funding?
- Institutional – is there an enabling environment with supportive institutions?
- Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?
- Technological – is technology and know-how for replacement and repair available?
- Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?

What is the exit strategy and/or ideas for follow-up financing?

Institutionally, EnDev will focus on enhancing the MoE's capability to directly work with provate sector (e.g., through the NCSC) and to take ownership in the Energy Compact implementation.

The **ecological** footprint of CM production (1.6-3 kg of firewood for firing per ICS) is compensated after 1-2 days of use. Further, EnDev encourages SPGs to refill clay pits and plant woodlots. ZIPO stove uses pellets from agricultural residues.

Socially, the CM is known all over Malawi and demand remains high. EnDev will learn from WASH approaches and broaden the social behaviour change campaign, targeting “open fire free zones”. Targeting both refugees and host community HH will avoid social unrest.

Technologically, CM has to be replaced typically after~ 3 years. ZIPO and the institutional stoves can be repaired as part of the after sales services.

Market development, political commitment and a robust NCSC, as well as cooperation of EnDev’s implementing partners with incoming carbon financed projects are key exit strategies.

Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be

Cooking sector: Component 2.1 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	421,825	21,385	14,100	2,033,367
SI: Access to cooking	2	0	0	26
PU: Access to cooking	180	0	0	273

Cooking sector: Component 2.1 – Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Continue awareness rising and behavioral change campaigns (including targeting community structures and organized groups, church structures, traditional authorities, community radios and introduction of “open fire free zones”)

<p>added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Indicator 2.1: +25% market share for scalable companies</p>	☒	<p>Encourage good financial practices (including financial literacy trainings, linkages to micro-finance institutions, usage of bank accounts and mobile money for payments)</p> <p>Recommendations for business development towards formalized business structures</p>																
	<p>Indicator 2.2: suppliers with new business plans for PUE systems</p>	☒	<p>EnDev will support CFFP who produce Chitofu 3-in-1 (fish processing stove) with BDS. As a relatively new company, they will be supported to draw up business plans and organisational set up.</p>																
	<p>Indicator 3.1: improved framework conditions</p>	☒	<p>EnDev supported the MoE to develop the Malawi Clean Cooking Energy Compact and now plans to offer capacity development to the Ministry officials in coordinating its implementation</p>																
	<p>Indicator 3.2: added value of support given to stakeholder networks</p>	☒	<p>EnDev co-coordinates the NCSC</p>																
<p>Cooking sector: Component 2.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>BDS provided to SPG</td> <td>30</td> <td>N/A</td> <td>N/A</td> <td>30</td> </tr> <tr> <td>Awareness rising and behavioural change campaigns for ICS</td> <td>200</td> <td>25</td> <td>25</td> <td>10</td> </tr> </tbody> </table>					Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	BDS provided to SPG	30	N/A	N/A	30	Awareness rising and behavioural change campaigns for ICS	200	25	25	10
Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025															
BDS provided to SPG	30	N/A	N/A	30															
Awareness rising and behavioural change campaigns for ICS	200	25	25	10															
<p>Narrative</p> <ul style="list-style-type: none"> • At least 5 SPG have new and/or formalised business structures and at least 5 SPG have vertically integrated further steps along the value chain • At least 15 SPG have received Gender Makes Business trainings • At least 10 SPG have linkages to micro finance institutions and/or use formalised banking procedures • At least 5 SPG have increased their production by 25% (O2.1) • At least for 10 SPG data on alternative clay sources is available • All SPG connected to EnDev have received quality assurance trainings and quality has improved 																			

	<ul style="list-style-type: none"> • Awareness about CM is increased and effects on behavioural change are visible. • Awareness for HTC ICS is increased (e.g., through cooking demonstrations). • Awareness and retailing structure for pellet fuel is developed in refugee camps.
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 86.2% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 11.5%</p> <p><input checked="" type="checkbox"/> LNOB+: 11.4%</p>

Electricity sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development 	<p>Market development</p> <p>Solar technologies have played an increasingly important role for energy access in Malawi. Market development of off-grid solar (OGS) technologies has taken up during and as a result of EnDev’s support:</p> <ul style="list-style-type: none"> • EnDev’s marketing and awareness campaigns for picoPV and SHS companies stimulated demand. • These interventions paved the way for increased donor cooperation, with USAID-funded Southern African Energy Program (SAEP) project and World Bank Malawi Energy Access Project (MEAP). • Ongoing improvements are being made to the enabling environment, including the removal of VAT and import duty on solar products, the reinvigoration of the national industry association and investigations into a strengthened approach on quality and standards. <p>However, much remains to be done to reach market maturity. Companies are diversifying their approaches and products (often not yet formalised in a business plan). They have expanded their sales agent networks, but continue to face challenges in terms of access to finance, availability of stock and the low ability to pay of many customers. Malawi’s low level of electrification means that significant needs for off-grid electrification remain. Those living in extreme poverty in remote communities face higher energy access challenges. Tailored BDS was launched in 2022 under a service contract with regional consultants (Finaltus) and is currently reaching 16 solar enterprises.</p>
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<ul style="list-style-type: none"> • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>The Renewable Energy Industry Association of Malawi (REIAMA) has grown significantly to re-establish itself under a new board. Paid membership has grown impressively, with significant further potential. However, strengthening REIAMA, in particular a functioning secretariat and fundraising capacity is still required.</p> <p>Malawi's formal waste management systems are limited and overstretched, with no provision for e-waste management. A national e-waste policy has been drafted. EnDev has been involved in this process and recently received the action plan to support MoE and solar companies with the implementation of the policy.</p> <p>Productive use (economic development) is covered under co-financed components such as GEAPP "AgEnergy" in selected PUE value chains, EU co-financed "Putting (electric) Energy to Work", as well as Iceland "EnergICE" in Mangochi & Nkhotakota for ICS & OGS. Social development and electrification of social institutions is covered under BMZ "Energising Health" and EnergICE.</p> <p>Poverty alleviation is addressed under the Dutch-co-funded "Demand Side Subsidy" (DSS) project for ICS and OGS for HH. These specific target groups are therefore not directly addressed by EnDev core.</p>
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<h2 style="color: #00A651;">Electricity sector: Component 3.1 – Solar</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity</p>	<p>Training, BDS</p> <p>Tailored BDS will be continued and expanded to reach more companies, in response to the diversified needs of companies and growing awareness following the first rounds of support. It will focus on strengthening companies' business capacity and ability to respond to market needs. Support will be provided by a roster of experts, targeted in response to an initial needs assessment of each company. BDS will be strengthened by complementary support of RVO's Energy Enterprise Coach (EEC).</p> <p>A well-functioning agent network is key to the company's success in Malawi and to serving hard-to-reach markets. EnDev will train agents through the local implementing partner, MAEVE, the BDS consultants or EEC, building on previous sales force development training developed with SAEP or EEC and specifically targeting women. This will meet demand from companies, allowing them to focus on other areas of growth and sustainability. It will also improve the sustainability of agent networks and increase income security for female agents, thereby improving job creation and retention, often in underserved, low employment areas. BDS will also support more companies to introduce consumer finance products, such as PAYGO, making products more accessible to consumers with low ability to pay.</p> <p>Access to Finance</p> <p>Central to this support will be the role of access to finance, which remains a major barrier to business development and their ability to bring sufficient stock to market at an affordable price for consumers. EnDev will explore partnerships with global providers such as GET.invest, as well as local and regional partners offering similar services, building on BDS to expand work on investment readiness and access to finance. To date, GET.invest has had limited</p>

<p>contributes LNOB+ (incl. the target group)</p>	<p>involvement in Malawi, but current market developments create an opportunity, particularly for the development of investment pipelines, readiness and, potentially, financing products. The World Bank's efforts to stimulate local financing will be supported to increase the availability of locally tailored products. The WB MEAP and EnDev will pursue different DSS designs to gain the most insights onto which approach is more successful for upscaling. EnDev will also coordinate with MEAP on other finance needs and interventions to address them. Under the EU co-financed project RBF will be used to provide consumer financing for stand-alone PUE appliances. The GIZ-implemented Agricultural Finance Project (AgFin) will help to get direct access to banks and MFIs to check if customer financing products for solar/ICS can be made available.</p> <p>Partnerships and alliances</p> <p>Capacity building to improve the enabling environment will focus on REIAMA. EnDev will support membership fees for its collaborating companies, strengthening links and appreciation of the value added by the association. This will also support REIAMA's financial planning, contribute to the recruitment of secretariat staff and build resource mobilisation capacity for sustainable, longer-term funding. This will also relieve the pressure on the Board to fulfil its leadership and oversight functions, and allow REIAMA to fulfil its advocacy role, pushing for full implementation of tax relief and quality standards, and knowledge management. The association has successfully developed experience in organising industry events and will be supported in further industry events and business exchange forums. REIAMA can also play a role in access to finance by providing knowledge and promoting opportunities through member networks. Organisational development will be promoted through strategy support, BDS, collaboration with international associations and increasing the representation of women from the current low base. Training will be introduced to reduce the barriers that prevent women from engaging in the sector. It is expected that once REIAMA is a fully functional organisation and members are experiencing and appreciating the benefits of their services, they will be able to collect membership fees from their members directly.</p> <p>Evidence, learning transfer, innovation</p> <p>Solar companies rely on a repair or return approach for faulty products, where possible resolving issues through in-house repair services, but otherwise relying on returning products to the international supplier. Strengthening and consolidation of repair is being explored. Informal e-waste management exists but is uncertified, with the potential for pollution and unsafe handling of hazardous materials.</p> <p>Policy advice and capacity development</p> <p>EnDev will require the companies it supports to develop their own e-waste policies, with guidance from BDS consultants where necessary. In addition, elements of the national e-waste policy action plan will be supported to stimulate the implementation process and preparation of the solar sector. EnDev will research e-waste in the solar/renewable energy sector and develop data collection models that can be</p>
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	<p>extended for application across e-waste categories and also serve as a useful reference point for business interventions. The results will be shared through a stakeholder workshop.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev interventions are aligned with Government priorities.</p> <p>EnDev engages in regular coordination with GoM, local and international actors (World Bank, USAID, UNDP, EU, GEAPP) to maintain this alignment, ensure complementarity of interventions, gap-filling and provision for under-supported technologies (i.e., picoPV).</p> <p>EnDev is implementing a co-financing project with EU, which is the core of its PU intervention, a GEAPP project on the agriculture/energy nexus, and a DSS pilot financed by DGIS. The EU and GEAPP projects interconnect energy and agriculture, DGIS on LNOB.</p> <p>Energising Health and the co-finance agreement with the Icelandic Embassy link to health and education. Support to REIAMA will also be coordinated, and leverage and multiply impact through strengthening sectoral business support.</p> <p>EnDev is engaging actors on e-waste.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) 	<p>Financial sustainability and exit strategy: Improving investment readiness and financial products through BDS will facilitate businesses’ financial sustainability after EnDev phase out. An agent network is key to many companies’ business models, and agent training will support improved income generation and reduce PAYGO default by increasing the presence of companies on the ground.</p> <p>Institutional: REIAMA’s further development will lead to active sector representation, convening, knowledge management, support services and institutionalisation of EnDev interventions.</p> <p>Ecological: EnDev will ensure businesses’ proactivity on e-waste, investigating the consolidation of repair services. Strengthening company approaches will prevent commercial impacts from an e-waste policy introduction. EnDev will support implementation of the policy, mitigating ecological harm from electrification projects.</p> <p>Technological: Strengthening and consolidation of repair capacities among solar companies and suppliers is being explored.</p> <p>The solar component is implemented on a market basis. However social justice is reflected in the complementary DSS approach, which targets the social cash transfer project (SCTP) target groups.</p>

<p>inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																												
<p>Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the "Programming 2023 – 2025" features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>29,918</td> <td>0</td> <td>144,159</td> </tr> <tr> <td>SI: Access to electricity</td> <td>0</td> <td>0</td> <td>5</td> </tr> <tr> <td>PU: Access to electricity</td> <td>0</td> <td>0</td> <td>163</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td><input checked="" type="checkbox"/></td> <td>Support of PAYGO solutions under the BDS</td> </tr> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input checked="" type="checkbox"/></td> <td>Solar companies supported under BDS increase their market share by 25%</td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>BDS companies to venture into PU and to diversify their portfolio</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input checked="" type="checkbox"/></td> <td>BDS and financial support for RIEAMA</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Companies receiving BDS support:</td> <td>7</td> <td>N/A</td> <td>23</td> </tr> <tr> <td>Companies with new access to finance</td> <td>5</td> <td>N/A</td> <td>5</td> </tr> </tbody> </table> <p>Narrative</p> <p>EnDev will also support market intelligence through REIAMA, to monitor impact of support to the association on its membership, and develop knowledge management infrastructure.</p> <p>Non-sales impact of BDS will be monitored, i.e., development of business plans, access to finance, job creation.</p> <p>Agent retention and size of network will be monitored.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	29,918	0	144,159	SI: Access to electricity	0	0	5	PU: Access to electricity	0	0	163	Outputs	Applicable	Details	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	Support of PAYGO solutions under the BDS	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Solar companies supported under BDS increase their market share by 25%	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	BDS companies to venture into PU and to diversify their portfolio	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	BDS and financial support for RIEAMA	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	Companies receiving BDS support:	7	N/A	23	Companies with new access to finance	5	N/A	5
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	<p>An individual report will be created on solar e-waste and company and wider e-waste developments will be tracked.</p> <p>Further outputs are detailed in the Theory of Change.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 13.8% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input type="checkbox"/> LNOB+: %</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>The social and economic context in Malawi is now challenging, increasing risk of social unrest. EnDev interventions provide tailored support, helping adapt as necessary and continue delivery. Many interventions can be conducted remotely. Support to agent networks strengthens trust within communities.</p> <p>Malawi's women suffer socially and economically. EnDev will empower women in financial decision-making, while improving employment, income generation and representation within the value chains of the promoted technologies.</p> <p>After 1-2 days of use, potential firewood savings from the ICS outweigh the input to produce it. EnDev will encourage SPGs to refill clay pits at mining sites and look into community woodlots to further cut use of fuel from forests.</p> <p>EnDev will support the introduction of an e-waste policy to mitigate future environmental harms.</p> <p>Support to REIAMA's development and sustainability will provide a strong industry voice, aiding responses to challenges.</p> <p>LNOB interventions, particularly for refugees, will be implemented through accepted UNHCR policies of targeting both refugees and host communities, to avoid unrest among those in surrounding communities.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f quotation price above)	2,400,000	
2	EU Delegation Malawi	3,700,000	Market development for stand-alone PU solutions
3	Global Energy Alliance for People and Planet (GEAPP)	3,200,000	Catalyse investments for PU solutions in the agricultural economy
4	DGIS	3,900,000	DSS for ICS and solar
5	Icelandic Embassy Lilongwe	700,000	Energising SI and promotion of Chitofu 3in1
	Total estimated budget	13,900,000	

13. Mali

Acronyms

ADES	African Development Solutions
AER	Renewable energy agency
AFD	French Development Agency
AMADER	Agency for the development of rural electrification
ANADEB	Agency for the Development of Biofuels
AVSI	Association of Volunteers for International Services
ASACO	Association de santé communautaire
BDS	Business Development Services
DNE	National Directorate for Energy (Mali)
DP	Development Partner
EAMD	Energy Markets Scorecard
EnDev	Energising Development
EU	European Union
FENASCOM	National Federation of Community Health Associations
FIETS	Financial, Institutional, Ecological, Technological, Social
GERES	La solidarité climatique en action
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für international Zusammenarbeit
HTC	Higher Tier Cooking
ICS	Improved Cookstove
IDP	Internally Displaced People
ITAC	International Technical Advisory Committee
LNOB	Leave no one behind
M-ACC	Malian Alliance Clean Cooking
NDC	Nationally determined contributions
NIS	Nordic International Support Foundation
PANER	Plan d'action nation d'énergies renouvelables
PAPSE	Renforcement de la participation socio-économique des déplacés internes, des réfugiés et des communautés hôtes vulnérables au Mali
PUE	Productive use of energy
PV	Photovoltaics
RBF	Results-based financing
RVO	Netherlands Enterprise Agency
SDG	Sustainable Development Goals
SHS	Solar Home System
SI	Social Institution
SME	Small and Medium Enterprises
SNV	Netherlands Development Organisation
TEI	Team Europe Initiative
UNDP	United Nations Development Programme

Summary and key data

<p>Promoted technologies</p>		<p>SHS, mini-grids, improved cookstoves, pico-PV</p>
<p>Type of Energy</p>		<p>Solar, biomass</p>
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Mali aims at stabilizing and increasing resilience of communities by fostering social and economic development through access to clean energy for people, social institutions and companies. By supporting the development of the clean cooking sector, EnDev is also supporting the fight against deforestation and mitigating climate change impacts, which are exacerbating the current conflict.</p> <p>Rural electrification</p> <p><u>Facilitating access to solar based upon demand</u></p> <ul style="list-style-type: none"> • Identifying needs and potential for different solar technologies on community level • Capacity development for local solar companies (Pico PV and PUE) • Facilitation between microfinance institutions and solar companies • Creation of rural distribution chains and promotion of PUE through RBFs • Establishment of repair and recycling points <p><u>Awareness raising on the potential of quality PV products</u></p> <ul style="list-style-type: none"> • Awareness raising events with local energy committees and private sector • Pilots on PUE systems <p><u>Facilitating access to solar energy in conflict and displacement settings</u></p> <ul style="list-style-type: none"> • Technical and financial assistance for health post electrification • Demand-based access support in conflict areas and IDP settlements (Pico PV, SHS, PUE, Nano Grids) <p>Clean cooking</p> <ul style="list-style-type: none"> • Increasing availability of PUE through BDS and RBF mechanisms • Strengthening the supply chain by focusing on resellers, especially targeting women in rural areas • Promotion of quality products through sensitization of private sector regarding GWA+ quality label and BDS • Awareness raising on quality products targeting potential clients • Continuous support of the clean cooking alliance to strengthen institutional sustainability • Exploration of carbon markets as an alternate funding source 	

	<ul style="list-style-type: none"> Assessment of market for HTC and development of business cases 		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 4,500,000
	Higher tier cooking (HTC)		Leave no one behind (LNOB+)
Approx. thematic budget shares	2,5%		32%

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	12,374	N/A	1,937	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Cooking / thermal energy for households	127,753	22,920	0	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for social infrastructure	106	0	44	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for productive use / income generation	164 electrification 90 cooking Total: 254	0	56 electrification	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Access to electricity in Mali is limited. While electricity access is at 94% in urban areas, only 17% of the rural population are connected to an electricity source. Mali's population also largely relies on wood for cooking, which has resulted in wood demand outpacing supply. The low population density underlines the need for decentralized, off-grid solutions but also poses a challenge for market development. Additional context-specific barriers include the volatile context with high political instability and a dynamic conflict, leading to constantly changing conditions for partnerships (politically motivated budget blockades; bans on certain activities) and intervention zones (esp. expansion of conflict parties and regions). The security situation has steadily deteriorated since the beginning of 2022, leading to declining investments by the private sector and development partners.</p> <p>Despite these challenges, the national plan for renewable energies (PANER) aims at 1) providing access to off-grid renewable energies to 66,64% of the population in rural areas and 2) ensuring universal access to improved cookstoves by 2030. The political importance of access to sustainable energy is also underlined by Mali's Nationally Determined Contribution (NDC), which aims to reduce greenhouse gas (GHG) emissions in the energy sector by 30% by 2030.</p> <p>In line with these political documents as well as SDG 7 and the Paris Agreement. EnDev Mali aims at stabilizing and increasing</p>
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	<p>resilience of communities by fostering social and economic development through access to clean energy for people, social institutions and companies. By supporting the development of the clean cooking sector, EnDev is also supporting the fight against deforestation and mitigating climate change impacts, which are exacerbating the current conflict.</p> <p>To reach these objectives, ensure alignment and long-term sustainability, EnDev closely cooperates with the following key national partners:</p> <ul style="list-style-type: none"> • Ministry of Mines, Energy and Water • Agency for the development of rural electrification (AMADER) • Agency for the Development of Biofuels (ANADEB) • Renewable energy agency (AER) • Malian cooking alliance (M-ACC) <p>Beyond this, EnDev exchanges on and coordinates with key development partners in the energy access space (i.e. UNDP and GERES) bilaterally as well as through the Team Europe Initiative (TEI) on environment. Partnerships with other DPs are facilitated whenever possible, but potential is limited due to the current political situation. During the last 1 ½ years the engagement of different DPs has changed repeatedly (incl. blocking and unblocking of funding, complete withdraws) due to political conflicts with the Malian government. In order to mitigate associated implementation risks, partnerships are diversified and managed flexibly.</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) 	<p>Each year more wood is used for cooking than can currently be produced or gathered making it more difficult to find sufficient fuel for cooking. This increases the need for ICS, although willingness to pay is still limited, given that purchase prices define decision-making and an abundance of cheap lower tier products. The increasing prevalence of stoves with the GWA+ quality label (22 products labeled Tier 2+ since 2021) in urban and peri-urban areas is enabling customers to make informed purchase decisions. Yet overall awareness of benefits is still limited.</p> <p>Despite positive developments since GWA+ was launched, there are still several barriers that block market development. While production capacity, distribution chains as well as awareness regarding GWA+ labeled stoves has improved, local testing capacity to confirm the quality of ICS is limited and has long lead-times. Access to high(er) tier ICS is also still limited, even in the capital, and framework conditions for HTC are poor. Currently, only one GWA+ certified ethanol stove exceeds tier 2. Similarly, there is a lack of PUE solutions.</p> <p>With the establishment of the GWA+ label, EnDev initiated a solid foundation for sustainable market development. Over the coming years, EnDev will accelerate market development by continuing to implement RBF schemes focused on increasing ICS access in</p>

<ul style="list-style-type: none"> • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>secondary cities and rural areas. Moreover, suitable HTC and PUE technologies will be identified and introduced based on market studies to capitalize on health and environmental benefits as well as encourage economic development. EnDev together with M-ACC will explore the potential of carbon markets as an additional source of financing to attract investments, add further value to the GWA+ label and move towards a sustainable market. These supply-side activities will be complemented by joint EnDev - M-ACC awareness raising campaigns to promote GWA+ quality products targeting potential customers.</p> <p>To overcome testing limitations, move to scale and ensure complementary support for M-ACC and GWA+, EnDev will explore cooperation with other development actors (Energy Sahel, GERES Biostar).</p>
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Cooking sector: Component 2.1 – Strengthening the market development for ICS including HTC

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier</p>	<p>Background</p> <p>Since the launch of the GWA+ label in mid-2021, several promotional campaigns and an RBF have been launched to create awareness as well as stimulate the production of and demand for GWA+ certified quality stoves. This resulted in new production facilities and greater availability of Tier 2+ stoves in secondary towns. An increase in consumer interest and sales was noted by the three companies that first participated in the labelling process and the RBF, while new companies and ICS continue to join. EnDev is currently collaborating with 7 production companies and one micro-credit structure that deliver labelled stoves. The amount of production companies is meant to grow to 15-20, while reinforcing resellers at the same time.</p> <p>Although the number of GWA+ certified stoves continues to increase, challenges remain due to</p> <ul style="list-style-type: none"> • limited testing capacities • limited knowledge among companies and resellers regarding the advantages of promoting certified products, especially in secondary cities and rural areas • limited consumer awareness of the GWA+ label and the advantages of quality products, leading them to choose widely available and cheaper lower-tier stoves. <p>Beyond this, the new market facilitating organization, M-ACC, still lacks know-how and capacities to promote and further develop the clean cooking sector.</p> <p>Modalities & activities</p> <p>In view of these remaining barriers, EnDev will continue to</p> <ul style="list-style-type: none"> • promote the label vis-a-vis companies and clients, • strengthen the M-ACC,
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cooking and LNOB+ (incl. the target group).

- Provide **technical assistance** to (production companies) to reinforce their operations, and
- **Expand the market for Tier 2+ products** through the existing **RBF** scheme (see section 3 below for further information).

To build on past achievements and complement the activities described above, EnDev will add new measures to 1) identify and **promote HTC**, 2) identify and **introduce PUE products**, 3) **strengthen distribution chains** in rural areas and secondary cities where the availability of ICS is still minimal, 4) explore opportunities for companies and end users to **access financing**, and 5) **enhance testing capabilities**.

1) HTC: Given the limited availability of HTC to date, EnDev will **collect and share information on the market potential for existing and new HTC solutions** with companies and other relevant actors to encourage investments. This will be accompanied by dedicated support, incl. an **RBF to facilitate the introduction of HTC solutions**. EnDev will also support relevant suppliers in lobbying for local fuel production to make HTC (ethanol and pellets) solutions, which currently rely on fuel imports, more viable. Once HTC products receive a GWA+ label, specific promotional campaigns will be defined to educate potential clients and stimulate demand. Together these measures will make the high(er) tier cooking market more attractive for companies and encourage new investments.

2) PUE (indicator 1.1): For productive use, results from past activities show a lack of PUE solutions and limited data on stoves sold to productive users (e.g. restaurants). Given the contribution PUE solutions can make to economic development and relieving pressure on charcoal and wood resources, EnDev will further study PUE demand to identify and promote relevant solutions. Specific support measures (incl. trainings, testing, etc.) will be further defined based on the results of the survey. After the study has been conducted and supply measures have been defined, EnDev will develop a **supply-side RBF to further incentivise companies to move into the PUE market**.

3) Strengthening distribution chains (indicator 1.1 and 2.1): To reach potential clients that do not have access to ICS yet and strengthen distribution chains, **RBF windows offering incentives for 1) sales in rural areas and secondary cities and 2) (female) resellers** in those areas will be implemented. **Female resellers** will also receive specific **trainings to strengthen their sales technique and technical knowledge**. Besides opening up new markets and offering solutions in line with rural demand, these measures aim **to increase the number of female resellers**, improve the registration of GWA+ stoves, increase the volume of GWA+ certified stoves, and improve profit margins through better-organized distribution chains. Improved ICS access in rural areas also aims to positively impact women who spend a growing amount of time on searching wood.

4) Explore opportunities for access to finance: A crucial barrier for market development is limited access to finance. EnDev will seek to identify opportunities for both company and consumer finance. For

	<p>larger scale supply-side investments, EnDev will work with M-ACC to explore the possibility of capitalizing on carbon markets through the GWA+ label (indicator 3). Access to carbon credits via GWA+ could not only improve access to finance and accelerate market development, but also increase the value of the label itself. Based upon the results of an analyses next steps for accessing carbon markets will be defined with M-ACC and other relevant actors.</p> <p>For potential customers, EnDev will work with credit providers i.e. cooperatives and microcredit institutions to sensitize them on ICS in general as well as opportunities related to credit products for ICS. New credit products could accelerate market development by making products more affordable.</p> <p>5) Enhance testing capabilities: Enhancing testing capacities allows more technologies to be tested and certified locally. EnDev will support M-ACC through capacity building and will assist in leveraging funds to expand the quality and speed of testing.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>SNV is implementing the cooking energy component on behalf of EnDev. EnDev will also seek to coordinate with SNV on the associated African Biodigester Component to promote HTC in a complementary manner.</p> <p>An additional, crucial partner is M-ACC, who is mandated to support the development of the ICS sector and manages the GWA+ label. EnDev will continue to work closely with M-ACC on the promotion of the label, build M-ACC’s institutional capacity and support M-ACC in leveraging funding from new projects (i.e. Energy Sahel and GERES Biostar). Close coordination with new projects will also be crucial for EnDev to realize potential synergies, avoid duplication and strengthen the label.</p> <p>Beyond this, carbon and micro-finance institutions will be crucial for leveraging and enabling access to finance. The potential for partners in financing will be further explored.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling 	<p>By working on the GWA+ quality label, enhancing testing capabilities and strengthening M-ACC, EnDev is laying the institutional foundation for a strong market beyond its interventions. GWA+ is also set to be integrated in the new National Energy Policy.</p> <p>Financially, EnDev is helping to improve the business case by supporting companies in expanding distribution chains to benefit from economies of scale. This process is being complemented by EnDev’s work on carbon and microfinance options.</p> <p>By improving the accessibility of stoves in line with the demand in (secondary) cities and remote areas, EnDev is also contributing to social equality, reduced tension over limited resources (wood) and mitigating GHG emissions. The promotion of alternate PUE and HTC solutions may lead to technological innovations on the Malian market.</p>

<p>of e-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																															
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	<p>Indicator 2: M-ACC established 2 new partnerships</p>	2			3
	<p>Indicator 3: 75% of additional revenues have been created for M-ACC</p>	+75%			30,000EUR annually
	<p>Indicator 4: 50% of all resellers trained are women</p>	50%			50%
	<p>Indicator 5.: 10 new paying M-ACC members</p>	10			30
	<p>Narrative</p> <p>The support of distribution chains in rural areas and secondary cities, especially in areas where access to wood is very limited, will improve living conditions as women have to spend less time and money on organizing wood for cooking.</p> <p>The focus on supporting female resellers has a positive impact on gender equality generating new income possibilities and increasing income of women.</p> <p>By strengthening M-ACC's organisational capacity, M-ACC will be able to independently implement market support measures and develop a funding strategy</p>				
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes. Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 24% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 2,5%</p> <p><input type="checkbox"/> LNOB+: %</p>				

Electricity sector

- Please briefly describe
- the current state of the market based on the ToC for the electricity sector, highlighting key barriers
 - how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:
 - Market development** (developing a market for energy access technologies – mainly relating to household access)
 - Economic development /** productive use
 - Social Development**
 - Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.

The electricity sector is marked by a **low electrification rate in rural areas and unreliable electricity supply in grid-connected areas**. Potential for solar energy is high and new companies have entered the market over the last years, thereby increasing the range of available technologies.

In general, the market is characterized by **high volatility**, due to e.g. political instability and the constantly changing security situation. This poses a challenge to investors and market development. While new companies have recently entered the market, others closed their offices or phased-out PayGo as the ability to pay decreased due to the intensifying conflict. Further, international investments in mini grid development decreased due to high risks (incl. political and security).

Given the **complex, constantly changing situation and limited private sector engagement in the past**, EnDev pursued a **demand-based approach**. This entailed technical and financial support to facilitate the establishment of **community energy committees**, revolving funds for PUE and community-owned energy kiosks to ensure that no one is left behind in the absence of the private sector in rural areas. As such, the demand-based approach contributes to market and economic development by enabling communities to manage their energy needs autonomously, ensuring sustainability and creating awareness and demand among households and entrepreneurs. Given the volatile security situation, EnDev will continue to pursue this approach in selected interventions zones (incl. conflict) areas and for health institutions. By focusing on areas where there is no or very limited market development so far, EnDev will contribute to social development and poverty alleviation.

However, as more companies and (quality) products are entering Mali, EnDev will also provide more “classic” support to encourage further market development. **RBF mechanisms** will be introduced to **overcome temporary risks related to establishing distribution chains and introducing new PUE** technologies, which will foster economic development. In cooperation with (micro) finance institutions, financing possibilities for different solar technologies will be analysed and the introduction of new credit lines facilitated.

Electricity sector: Component 3.1 – Strengthening of rural solar energy markets

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).

Background

EnDev has had a specific geographic focus on Barouéli, a circle of Segou, where new technologies, partnerships and awareness raising approaches are being tested. The demand-based approach with communities has been piloted and further developed in this circle. These experiences and the possibility to accompany some of the approaches over a longer period allows for **learning. Successful approaches are being scaled up in other regions** where no/or very limited market development has taken place so far.

EnDev will continue to use the demand-based approach to identify suitable technologies (from pico-PV to nano/mini-grids) for each context and target group. Demand- and supply-side support will be provided in accordance with identified technologies / needs.

Modalities & activities

Given the important milestones reached by its demand and community-based approach, EnDev will continue to support distribution chains for PV products via **energy kiosks and PUE lease-purchase systems ("revolving energy funds") on a community level.**

Some communities already have a well-functioning steering system for the revolving energy funds set up by EnDev, which allows them to make purchases and/or repairs. EnDev still facilitates international procurement of equipment (as required). However, given the increasing availability of quality PV modules and batteries on the local market, EnDev will focus more on local procurement.

As new actors and quality technologies have entered the market, the results of a market study that is currently being contracted will be used to identify additional partners and support opportunities as well as design new approaches for the different target groups and technologies. A specific focus of the study is on available PUE solutions and SHS planning and installation companies. At the same time, a **pilot of PUE systems available on the local market** is being planned to test product and service quality of the companies and sensitize the target communities on the advantages of solar powered systems. Different technologies and target groups are being considered.

Based upon these results an **RBF will be designed that covers part of the risks and costs associated with offering PUE systems for agriculture.** The private sector is reluctant to enter the rural market with agricultural PUE systems as the sector is very volatile and rural communities are sceptical towards new technologies. The RBF will therefore be accompanied by sensitization on the advantages of PUE systems and possible economic gains. As most women in rural areas are active in agriculture they will particularly benefit from this

intervention. A second **RBF offering incentives for companies looking to create PUE distribution channels** in rural areas will be established, taking into account the results of the market study and information on specific demand in the communities to increase access and support companies entering new markets.

Energy kiosk tenants already have good technical knowledge but will continue to receive training to improve their commercial skills. Furthermore, EnDev facilitates matchmaking with existing Pico PV companies to establish the energy kiosks as permanent distribution points for companies.

EnDev will continue to facilitate access to interested communities for companies and provide information on demand and technology potential. Given the challenges (international) investors face in this regard, EnDev was already able to facilitate the development of 4 nano grids.

Marketing and technical training for companies and sales agents offering Pico PV (related to output 1.2), SHS, and PUE will continue to strengthen local distribution chains. These will be complemented by new business development trainings.

By facilitating **cooperation between (micro) financing institutions and Pico PV** (related to output 1.2), **SHS and PUE companies**, EnDev will tackle the challenge of limited commercial and consumer financing. On the one hand, the objective is **to create new consumer credit lines** together with cooperatives and community saving groups to overcome the limited ability to pay. Activities will build on an ongoing pilot seeking to develop credit lines for bigger Pico PV systems in collaboration with a Pico PV company, micro finance institute and cotton cooperatives. On the other hand, EnDev will offer workshops and support the development of clear business cases to aid companies in accessing financing through (micro) finance institutions. This will enable companies to increase their offer and stock as well as expand their distribution chain.

The lack of knowledge on solar technologies and the importance of quality in addition to the widespread availability of cheap low-quality products have a negative effect on demand. Willingness to pay is further negatively influenced by a lack of experience with certain product types (mainly PUE). **Awareness-raising campaigns on Pico PV and PUE** in cooperation with communities, their energy committees, and the private sector are implemented to enable potential clients to differentiate between low- and high-quality products as well as inform them on the general advantages of solar electrification. Traditional leaders and energy committees play a crucial role in sensitizing the population as they act as examples and can accelerate demand within the communities. The cooperation with companies on awareness raising and selling high quality products is crucial for building trust on a consumer level and increasing demand.

Beside this, **awareness-raising with local vendors** at weekly markets on the advantages of offering high quality products, and

	<p>connecting them with companies offering these products, is a key activity to reduce the number of low-quality products in rural areas, decreasing bad experiences with solar products and thereby increasing trust in the technology. At the same time new distribution channels are created. Additionally, EnDev continues to support the establishment of new repair points for PV products.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<ul style="list-style-type: none"> • A partnership with AgroFinance (GIZ) (related to output 1.2), has been launched to cooperate on the development of credit lines for PUE systems in the agriculture sector. AgroFinance has a long-term cooperation with (micro) finance institutions and developed a specific approach for developing business cases. • EnDev is working with private companies on the development and installation of nano and mini grids by providing data for feasibility studies and facilitating contact with communities • EnDev is part of the EU TEI Environment, specifically, the working group on electrification. This enables EnDev to explore new partnerships (e.g. with donors working on climate mitigation and adaptation) and lay the foundation for potential co-financing from the EU once the current ban has been lifted.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? 	<p>By supporting the creation of new financing mechanisms for clients and companies alternative financing possibilities are ensured. Further, cooperation with DP and private sector for scaling up is enhanced where possible (private sector for mini grid development).</p> <p>Creating a recycling and repairing framework in rural areas and facilitating cooperation between PV companies and recycling companies on a national level is lowering the risk of negative ecological impacts.</p> <p>To ensure institutional sustainability, close cooperation with national partners (DNE, AMADER) is foreseen in order to integrate activities into national plans and strategies.</p> <p>EnDev is strictly following a community-based approach, closely integrating traditional authorities and the local government to avoid unintended inequality and social tension.</p>

<p>What is the exit strategy and/or ideas for follow-up financing?</p>																																							
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>11,155</td> <td>892</td> <td>57,679</td> </tr> <tr> <td>SI: Access to electricity</td> <td>7</td> <td>0</td> <td>512</td> </tr> <tr> <td>PU: Access to electricity</td> <td>142</td> <td>28</td> <td>380</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td><input checked="" type="checkbox"/></td> <td>Data already collected and integrated in last OCS.</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Indicator 1: <i>New collection points for PV waste have been established</i></td> <td>5</td> <td></td> <td>13</td> </tr> <tr> <td>Indicator 2: <i>A training on business development has been developed.</i></td> <td>1</td> <td></td> <td>1</td> </tr> <tr> <td>Indicator [3]: <i>Two pilots on PUE with local women group have been realized.</i></td> <td>2</td> <td></td> <td>2</td> </tr> </tbody> </table> <p>Narrative</p> <ul style="list-style-type: none"> Results-wise the highest results are expected for Pico PV systems as 1) demand for SHS is still limited due to affordability and 2) private investments in mini/nano grids have decreased due the increasing instability. By establishing new PV waste collection points EnDev is facilitating access to PV waste of private companies making it more profitable for them to develop recycling approaches 	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	11,155	892	57,679	SI: Access to electricity	7	0	512	PU: Access to electricity	142	28	380	Outputs	Applicable	Details	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	Data already collected and integrated in last OCS.	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	Indicator 1: <i>New collection points for PV waste have been established</i>	5		13	Indicator 2: <i>A training on business development has been developed.</i>	1		1	Indicator [3]: <i>Two pilots on PUE with local women group have been realized.</i>	2		2
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	<ul style="list-style-type: none"> Facilitating access to financing for companies may attract other private sector actors to the solar energy sector strengthening the supply side.
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 38% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 2%</p>

Electricity sector: Component 3.2 – Demand based electrification in vulnerable areas and for internally displaced persons

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> Training, BDS Access to Finance Evidence, learning transfer, innovation Policy advice and capacity development Partnerships and alliances Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p>	<p>The biggest barriers for electrification in conflict impacted areas as well as for IDP settlement is that there is no/or very limited presence of private sector actors and no interest of the private sector to enter these markets due to extremely high risks and costs. At the same time ability to pay is limited and no financing options are available for target groups. IDPs, the population living in conflict areas and hosting communities are also facing high uncertainty in regard to income and safety. Therefore, they are more reluctant to make investments in energy products.</p> <p>EnDev activities in conflict impacted regions and IDP settlements will support access and affordability for the most vulnerable groups in Mali, creating new opportunities for clean energy in difficult settings. At the same time these measures have a stabilizing impact by creating income and improving living conditions. Based upon the specific setting – hosting community, conflict impacted community, IDPs/refugees – the interventions will be designed adapted to demands and context.</p> <p><u>Electrification for conflict impacted and hosting communities in the north and centre of Mali</u></p> <p>In contrast to the target areas of the first component, no or very limited structures for solar product distribution and electrification exist in these areas. EnDev therefore supports the establishment of demand and community-based distribution channels based on the experiences made in Barouéli.</p> <p>EnDev already trialed this approach, which led to the establishment of the first two energy kiosks serving two communities. At least 5 more</p>
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If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).

kiosks will be established to enable product distribution in these areas. The objective is for the kiosk to have a constant stock of Pico PV products and spare parts for SHS and PUE systems. The kiosks are managed by community energy committees, which also identify a local technician who can manage the kiosk after being trained by EnDev. Beyond training, EnDev facilitates the contact to companies and/or takes over the initial procurement of the products.

EnDev further supports the **establishment of revolving funds** that will be managed by the energy committee. The fund can be used for continuous electrification investments as well as maintenance and repairs for solar systems. **EnDev generally procures the first SHS and PUE systems**, which are sold on a **lease-purchase system** via the energy committee. Repayments contribute directly to the revolving energy fund. Target communities are chosen by demand and potential. At the same time, information campaigns on the potential of solar technologies are conducted to further increase demand.

In order to boost economic development and increase income, **nano grids will be financed and installed to electrify local markets**. Streetlights will be financed and installed to increase security in the target communities and foster social development. Operation, maintenance and continuous financing will be organized via the energy committees. To ensure that the energy committees have the necessary capacity to steer the funding and develop long term electrification strategies, EnDev provides continuous capacity building and coaching. Additional trainings are offered for local technicians to create local know-how for installation, maintenance and repair of solar systems.

Joint **awareness-raising campaigns** will be conducted with the energy committees to inform potential clients on the benefits of solar energy, the difference between high- and low-quality products and the importance of maintenance.

The demand and community-based approach is necessary to develop certain key aspects that can later foster a private sector-based development. By establishing local structures for continuous investments in solar technologies and creating a local support structure for solar energy, EnDev is contributing to making these markets more attractive for private companies.

When working with host communities and communities in conflict areas, building trust and relationships is even more crucial for gaining access and being able to implement activities. Given that these communities face the risk of constant power changes, attacks by armed groups, and often have been left behind by governmental social structures, building these relationships takes time. EnDev's past and current engagement will therefore be an asset for private sector actors looking to expand into these regions.

Productive Use for IDP camps and settlements

In the next programming phase, EnDev will build on the current PUE pilot being conducted in collaboration with the GIZ project PAPSE.

	<p>Under this pilot, EnDev purchased PUE systems that were installed in two IDP camps by local companies. The pilot focused on women's groups to enhance income opportunities for female IDPs. Maintenance is being assured by the companies as well as local technicians that were trained by EnDev. EnDev and PAPSE will evaluate these PUE pilots and feed the learnings into a second pilot focusing on different financing approaches. The ultimate objective is for PAPSE to scale-up successful approaches with continued technical support from EnDev (e.g. technical trainings, data collection, demand / market assessment, etc.).</p> <p><u>Piloting Demand Side Subsidies for household electrification in IDP camps and settlements</u></p> <p>A study on the actual ability to pay and economic situation in at least two IDP settlements will be conducted in order to design a small pilot for a demand-side subsidies mechanism. Throughout the implementation and evaluation process information will be shared with the TEI Environment and national partners to scope for possible scaling up funding.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The electrification activities in the North and Centre of Mali are currently implemented by NIS who has extensive experiences with electrification in these areas. Learnings from pilots and approaches in Barouéli are used by NIS as a basis for developing their specific implementation approaches.</p> <p>The cooperation with the project PAPSE allows EnDev to combine the objectives of increasing income and creating employment with an increased access to clean energy for refugees and IDPs. With PAPSE's experience and existing engagement in this context, impact can be leveraged, and new opportunities for cooperation are identified throughout implementation.</p> <p>Close coordination with AMADER and DNE as well as regional authorities ensures complementarity with other donor activities.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for 	<p>The partnership with PAPSE enables scaling up of PUE activities in refugee and IDP settlements. A focus on PUE activities reduces the risks for revolving energy funds that will be established for energy investments.</p> <p>The cooperation with communities further aims at creating sustainable structures at the community level that allow for continuous independent investments and long-term electrification plans. At the same time, the community-based approach supports avoiding inequalities and unintended negative social impacts.</p> <p>Conducting trainings of local technicians in order to develop repairing capacities will be conducted to avoid negative ecological impacts.</p> <p>Close coordination with national and other development partners takes place in order to identify synergies and integrate activities in national planning.</p>

<p>electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																			
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<p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>production and/or increase production itself, increasing food security in vulnerable settings.</p> <ul style="list-style-type: none"> • Capacity development in IDP settlements empowers most vulnerable groups, creating opportunities for income and integration in host communities
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+</p>	<p>Approx. 29% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 29%</p>

Electricity sector: Component 3.3 – Demand based electrification of rural health institutions

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention</p>	<p>The biggest barrier for electrification of rural health institutions (health posts, clinics and maternities) is a lack of private sector interest to enter this market. Ability to pay is low and continuous payment with lease-purchase systems cannot be guaranteed, making investments for private companies extremely risky. Further, there are no or only few quality products locally available and no companies willing to install these in rural areas. But there seem to be positive developments regarding both aspects.</p> <p>EnDev currently supports the electrification of rural health institutions with three interventions:</p> <ul style="list-style-type: none"> • Analysis of the state of electrification and demand of health institutes • Technical and financial support for installing SHS • Accompanying sustainability measures <p>In the new phase, EnDev will expand these activities to at least 1 new region, bring the total up to 4 regions. Whenever possible, maternities are included into electrification strategies as pregnant women and women giving birth are especially impacted by low-quality health care services in rural areas.</p>
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<p>areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).</p>	<p><u>Analysis of the state of electrification and demand</u> To provide a basis for electrification planning, EnDev continues to analyze the electricity situation and demand of health institutions. This information is shared with AMADER and the National Federation of Community Health Associations (FENASCOM) to enable better electrification planning. Based upon the data and jointly developed criteria, FENASCOM and EnDev identify the health posts and maternities with the most need for technical and/or financial support for installing or repairing solar systems. As the number is too high to be covered only by EnDev, the data is also shared with other DPs working on health sector electrification to accelerate impact.</p> <p><u>Support of solar installations</u> Based on the results of the analysis conducted with FENASCOM, EnDev finances the purchase of equipment for new or the extension / repair of existing solar systems for health posts and maternities. These systems usually provide lighting, ventilation, and, to some extent, electricity for IT and medical equipment for day-to-day operations. When needed, vaccine cooling is added to the systems. EnDev also includes health institutions in conflict zones if a minimum level of security for transport and installation can be ensured.</p> <p>In the past, equipment has been procured internationally due to the lack of locally available quality products, and local technicians had to be trained as no companies were offering quality services in rural areas. Depending on the results of an ongoing market analysis, local procurement for goods and services will be pursued wherever possible to support private sector development.</p> <p><u>Support of framework conditions</u> EnDev is taking the following measures to improve framework conditions and ensure sustainable electrification:</p> <ul style="list-style-type: none"> • Local technicians are trained on the installation, maintenance and repair of SHS. These local technicians support the analyses of the electrification status and install systems in order to increase practical knowledge. Whenever possible local technicians from conflict zones and women are included in trainings. • Sustainability agreements with the responsible Community Health Association (ASACO) and communities are signed. These agreements include the responsibility to reserve funds for maintenance, repair, and further investments in electrification, if needed. Based on these agreements, ASACOs share the responsibility with the health centers. • Sensitization of rural health institutions and responsible institutions on the importance of maintenance and the use of quality products are conducted on a regular basis. <p>EnDev has secured additional BMZ co-funding for the electrification of health posts with a specific focus on vaccine cooling.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p>	<p>Collected data on the electrification state and demand is shared with national partners and development partners to enable scaling up and allow for a coordinated electrification of the health sector.</p>

<ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The electrification of health posts does not only increase the access of social infrastructure to clean energy, but also enables health posts to improve and widen their range of services. In cooperation with the communities and health posts the specific electricity demand is identified, so this can be taken into account for system planning. Additional BMZ budget is integrated in the component enabling EnDev to scale up its activities reaching out beyond the 4 usual target regions.</p>																
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>To support the institutional framework all collected data is shared with national and other DPs so they can base their long-term planning for electrification in the health sector on evidence and also increase likeliness for future financing.</p> <p>The greatest risk for long term financing is the lack of a stable government funding of the health sector. EnDev has no influence on this aspect. Nevertheless, the facilitation of sustainability agreements increases the likeliness that, if funding is available, parts of it are used for maintenance and repairing of systems.</p> <p>The training of local technicians on maintenance and repairing increases life duration of the system limiting negative ecological impacts.</p> <p>The conjoint process of identifying health posts to be electrified with local and national partners ensures that no unintended negative social effects arise from EnDev activities.</p>																
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If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

1. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
2. the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.

Please also highlight whether this component

Electricity sector: Component 3.2 – Table 2

N/A

Electricity sector: Component 3.2 – Table 3

Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025
Indicator 1: Training of 25 local technician of which at least 3 are women	25	3	104
Indicator 2: At least 50 new sustainability agreements have been signed	50		193

Narrative

- The interventions have a positive impact on social development by improving health services through electrification. By electrifying maternities, a special focus on the improvement of conditions during childbirth is given.
- The training of local technicians does not only increase likelihood for sustainability of PV systems of health institutions, but also strengthens the local infrastructure for electrification.
- By signing agreements for ensuring maintenance and repairing of systems ownership for the PV system is created and the likelihood of a long life for the installed systems increases.

Approx. 9% of total budget

Approx. contribution to thematic budget for:

LNOB+: 1%

contributes to the thematic budget share for LNOB+

Safeguards and risks

Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?

Mali is marked by high fragility and armed conflicts involving terrorist, armed ethnic, and criminal groups making it a highly vulnerable context. Safeguards and the principles of 'leave no one behind' and 'do no harm' therefore apply in multiple areas and require an approach that is not only gender sensitive, but also includes multiple ethnic groups and close coordination with (traditional) authorities at communal level. Before extending the implementation to new communities, a trustful relationship with local (traditional) authorities is created and relevant stakeholders are involved in activity planning to avoid inequalities and social conflict. Local (traditional) authorities and, if necessary, representatives of armed forces and groups are also consulted before the implementation of sensitive activities (i.e. data collection, verification).

As the project is working in several conflict zones, EnDev continuously verifies if its support and activities are accepted by all relevant stakeholders to avoid putting beneficiaries at risk. In some cases, EnDev abstains from data collection to avoid creating any risk for the population (threats of armed groups that are critical of data collection). EnDev further develops local technical capacities in intervention zones to ensure sustainability of installation in case project employees and private partners can no longer enter the intervention zones due to security risks.

Generally, the community-based approach focuses on supporting the development of the necessary infrastructure to ensure long-term energy access without EnDev's support (exit strategy).

To avoid negative environmental effects the establishment of recycling structures for PV waste are being supported and capacity development for repairing PV systems is taking place.

EnDev seeks to continually diversify partnerships while maintaining flexibility to ensure that activities can be implemented, and alternative approaches are available despite the volatile political situation.

Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	4,500,000	
	Total estimated budget	4,500,000	

14. Mozambique

Acronyms

ADES	Association for the Development of Solar Energy, Switzerland
AVSI	Association of Volunteers in International Services
BDS	Business Development Support
BECT	Biomass Energy Certification & Testing Center
BMZ	Federal Ministry for Economic Cooperation and Development
CCT	Controlled Cooking Test
CES	Cooking energy systems approach
CLASP	Collaborative Labeling and Appliance Standard Program
EAMD	Energy access market development
EDM	Electricity of Mozambique
EnDev	Energising Development
EPC	Engineering Procurement Construction
EU	European Union
FASER	Fund for Sustainable Access to Renewable Energy in Mozambique
FDC	Community Development Foundation
FIETS	Financial, Institutional, Ecological, Technological, Social
FUNAE	National Energy Fund
GACC	Global Alliance for Clean Cookstoves
GBE	Green People's Energy
GIS	Geographic Information Systems
GIZ	German Agency for International Cooperation GmbH
HH	Households
HQ	Headquarter
HTC	Higher-Tier Cooking
ICS	Improved Cookstoves
IDP	Internally displaced people
INAS	National institute for social action
IOM	International Organisation for Migration
IRENA	International Renewable Energy Agency
ISO	International Organization for Standardization
ITAC	Independent Technical Advisory Committee
IVA	Independent verification agent
KPT	Kitchen Performance Testing
LNOB	Leaving no one behind
LPG	Liquefied petroleum gas
MECS	Modern Energy Cooking Services
MFT	Multi-Tier Framework
MIRENE	Ministry of Mineral Resources and Energy
MSME	Micro, Small and Medium Scale enterprise
NDC	National Determined Contribution

NGO	Non-governmental organisation
NIS	Nordic International Support Foundation
NISA	National Institute of Social Action
NORAD	The Norwegian Agency for Development Cooperation
PCS	Pressure Cooker Session
PUE	Productive Use of Energy
R&D	Research and Development
RBF	Results-Based Financing
RVO	Rijksdienst voor Ondernemend Nederland
SA	South Africa
SDGs	Sustainable Development Goals
SHS	Solar Home Systems
SI	Social Institutions
SNV	Netherlands Development Organisation
TA	Technical Assistance
ToC	Theory of Change
TVET	Technical and Vocational Education and Training
UEM	Eduardo Mondlane University
UK	United Kingdom
UNSD	United Nations Statistics Division
WB	World Bank
WFP	World Food Program

Summary and key data

Promoted technologies				Improved Cookstoves (ICS), eCooking, PUE, SHS
				Solar, biomass
Type of Energy				
Summary of proposed intervention(s)	<p>EnDev has a two-pronged intervention strategy: On the one hand, as an energy access programme, EnDev wishes to continue enabling the market to deliver high energy access figures for households and social institutions (SI). On the other hand, EnDev positions itself as an enabler and facilitator to speed up private sector readiness to absorb the existent and upcoming large-scale funding and deliver on the targets towards the SDGs. While difficult to quantify, EnDev's capacity development efforts will help to leverage substantial amounts of financing for the sector. Provision of market intelligence via new information platforms will further enhance sector coordination.</p> <p>For the biomass-based ICS market, EnDev will support the creation of a national biomass energy cookstove standard based on the new ISO cookstove standard (ISO 19867/ 21276) and further capacity development of the Biomass Energy Certification and Testing Centre (BECT). This will help to raise quality levels of ICS and ease companies' access to impact investments and carbon financing.</p> <p>EnDev's RBF approach via the Fund for Sustainable Access to Renewable Energy (FASER) is very successful, and is replicated by other donors (World Bank, UK). For a market inclusion of vulnerable groups, a new LNOB+ access-window for both ICS and solar products will be launched that targets women-led households, households living below the national poverty line, and internally displaced people (IDPs).</p> <p>As the HTC market is almost non-existent, EnDev works on the innovation front: a pilot on gasifier stoves will test fuel supply needs and user acceptance and a pilot with 80 eCooking appliances will gain evidence on grid impacts and user behaviour.</p>			
Please describe your impact, the overall objective, and the key interventions i.e.:	<ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 			
Programming period	01.07.2023 – 31.12.2025	Indicative core budget	EUR 3,500,000	
	Higher tier cooking (HTC)		Leave no one behind (LNOB+)	
Approx. thematic budget shares	13 %		59 %	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	2,574 people	N/A	1,919	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Cooking / thermal energy for households	37,332 people	2,912	2,621	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for social infrastructure	11 SIs	0	11	e.g. eCooking, higher tiers, vulnerable groups, demand, etc. [06]
Electricity and/or cooking / thermal energy for productive use / income generation	34 MSMEs	0	34	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Country context	
<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>Mozambique remains a high-impact country due to its large access gap of 21 million people without access to electricity and 29 million people without access to clean cooking. In 2021, the national access rate to electricity is 40 % (73 % in urban, 5 % in rural areas); the access rate to clean cooking is 5 % (13 % in urban, 0 % in rural areas).⁴⁴</p> <p>Mozambique's National Electrification Strategy aims to achieve universal electricity access and clean cooking by 2030; 50 % of rural households are to be connected with decentralised solutions.</p> <p>Building on the success of the RBF approach of the FASER fund, other donors have launched funds financing SHS, ICS, PUE and mini-grids (e.g., ProEnergia+ with 13 million USD financed by the World Bank; BRILHO with 23 million EUR financed by the UK; and the Beyond the Grid Fund for Africa with 0.3 million EUR financed by Sweden).</p> <p>These funds are already using or planning to use RBF mechanisms, which may lead to a competitive search for private sector partners able to absorb funding. As the supply side of the off-grid energy access market is not yet well developed (approx. 10 ICS manufacturers and 15 solar companies) this puts target achievement at risk. Risk mitigation options include a good coordination of donor activities (taking place already, also with help of the EnDev supported GIS platform) and building the capacities of the private sector.</p> <p>LNOB+ is an important topic for Mozambique. Despite being one of the fastest-growing economies in Africa (economic growth peaked at 6.7 % in 2015), it remains one of the poorest countries in the world with 12.3 million people living below the national poverty line (WB 2018). The country is frequently exposed to extreme weather events, has high rates of unemployment, high HIV prevalence, and recurrent food insecurity (1 million people/month receive WFP food assistance). Mozambique hosts approx. 28,000 refugees and 950,000 internally displaced people.</p>

⁴⁴ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank

	<p>The BMZ-financed programme Green People’s Energy (GBE) is closing in September 2023; a successor programme is under development and Mozambique is discussed as a possible country project. For the EnDev programming, we assume that the successor project will continue GBE interventions such as PUE and TVET. If this is not the case, EnDev Mozambique will look for additional funding to continue (parts of) these activities.</p>
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<h2 style="background-color: #00a68f; color: white; padding: 5px;">Cooking sector</h2>	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>In Mozambique, the ICS market is still in its pioneering phase and the access gap is actually widening due to population growth. The tier 2 ICS market segment is the most developed: about 10 manufacturers are offering 5 different charcoal and one firewood ICS for household use.</p> <p>There are several barriers like limited technical capacities and access to finance that limit the private sector’s ability to scale. This is exacerbated by limited public support as the national biomass strategy is outdated and national cookstove standards are in early development stages. The local financing landscape does not provide affordable small-ticket capital to ICS manufacturers, limiting in turn their ability to scale production and to offer attractive consumer financing.</p> <p>Cooking being a daily necessity for all LNOB+ groups described above, there is a big potential to support them in access to clean cooking. In the next phase, EnDev will target:</p> <ul style="list-style-type: none"> • Women-led households who participate in GoM’s social security programme which is implemented by the National Institute of Social Action (NISA) that runs a digital beneficiary registry. • Households below the national poverty line. • Internally displaced people (IDP) in yet to be selected areas. • Schools which are selected for WFP’s school-feeding programme and can thus be assumed to cater to children with nutrition deficits. <p>A market for HTC aside from LPG and eCooking is almost non-existent, but exponentially rising fuel cost - especially for charcoal – make processed biomass fuels like pellets or charcoal from agricultural residue an interesting alternative. This makes gasifier stoves more attractive, but evidence on fuel availability and overall convenience and user acceptance is still missing.</p> <p>ECooking appliances are sold in cities, but available models are usually inefficient and of low-quality. In 2020, about 1.4 % of the population was cooking primarily with electricity. However, EDM lacks solid information about the grid impacts of increased electricity consumption in peak load times. According to the latest eCooking market assessment (MECS and EnDev 2022), unreliable electricity supply, lack of access to finance and low awareness limit uptake. The relatively fast electrification roll-out and the highly subsidized electricity tariffs are identified as enabling factors for eCooking.</p>

	<p>By initiating High Tier Cooking activities, once again EnDev Mozambique is addressing a new sector (Clean Cooking 2009, SHS 2013) thus paving the way for consecutive projects.</p> <p>EnDev Mozambique contributes directly to the NDC action field: <i>Improving access to renewable energy 4.6.2.2.1 / Increased efficiency in the production and use of biomass fuels</i> with its wide range activities in the biomass cooking sector preparing the base for more ambitious NDC`s by sensibilization of decision makers.</p>
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Cooking sector: Component 2.1 – Biomass-based ICS + HTC

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>Building upon its experience of being one of the most active stakeholders in the sector since 2009, EnDev would like to speed up ICS market development and strengthen private sector capacities.</p> <p>To improve the enabling environment, EnDev initiated the Biomass Energy Certification and Testing Centre (BECT) in collaboration with the Eduardo Mondlane University. BECT is the only lab in the country and the subregion able to perform water boiling testing (WBT), controlled cooking test (CCT), and kitchen performance testing (KPT). Although within certain contexts companies are paying the university for its testing services, EnDev needs to continue supporting the centre financially until more demand is created. Demand will raise due to national standards becoming mandatory, other developing partners making stove testing mandatory for participation in RBF funds, and companies from neighbouring countries approaching BECT. While BECT currently assists various other EnDev country projects in ICS testing, there is potential to reach out to new types of clients, especially vis-à-vis upcoming regional funds such as the Modern Cooking Facility for Africa and carbon financed projects. Once sufficient demand is foreseeable, EnDev will support BECT to become an ISO accredited lab.</p> <p>EnDev is also one of the driving forces in the energy sector working group advising the GoM on the creation of a national biomass energy cooking standard based on the new ISO cookstove standard (ISO 19867 / 21276) and its testing protocols. Equipment for testing and training purposes is currently purchased, the first draft is supposed to be submitted in June 2023 and the final version should be approved by mid-2024.</p> <p>EnDev and BECT are also continuing to provide technical assistance to ICS manufacturers on issues such as stove design and production process optimisation and to build clean cooking-related expertise at public institutions (like FASER and MIREME).</p> <p>To further advance the market for lower tier ICS (1 – 3), EnDev is providing financial assistance using various RBF windows of the FASER Fund. In the classical access-window, incentives are paid based on fuel savings, but also on ratings of thermal efficiency, emissions, safety and durability performance of ICS.</p>
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To emphasize EnDev's strive for the market inclusion of vulnerable groups, a new LNOB+ access-window will be launched which offers:

- **Incentives for women-led households.** The identification of eligible households is done via local government and companies are supported to use a digital tool to register new customers.
- **Pro-Poor incentives** targeting households with incomes below the national poverty line. These are targeted via the digital registry of INAS who implements the public social security programme and via geographical targeting towards districts in Central Mozambique which have a poverty prevalence of 64 %.
- **IDP incentives** for customers living in resettlement (and refugee) areas. The integration of hosting communities will be assessed.

By using the RBF approach, EnDev continues to leverage private sector funds. The additional "LNOB+-incentives" will be used by companies to target LNOB+ groups expanding their operations, reducing the retail price, or taking any other measure to achieve sales.

With regard to **institutional cookstoves for social institutions targeting LNOB+ groups** (in this case children with nutrition deficits), EnDev collaborates with WFP for the introduction of improved cookstoves for school feeding in 79 locations. EnDev developed 3 different stove designs, of which one got selected for replication after KPT field testing and user acceptance. EnDev will train local manufacturers and develop a train-the-trainer programme for long-term capacity development. The new stove will cut fuel consumption and costs by at least 50 %. Once results can be reported to the Ministry of Education, who is budgeting for schools' fuel supply, EnDev expects to upscale this initiative in collaboration with WFP. As even schools in urban areas cook with three-stone fires, there is a large potential to bring down schools' energy costs and to mitigate health and environmental impacts; WFP itself works in 340 schools. The possible use of this ICS in IDP settlements, hospitals and prison will be assessed.

For **PUE**, EnDev is currently developing a charcoal-fired stove for food vendors. As 95 % of these are women, this activity has a strong gender dimension. Currently, most food vendors use inefficient charcoal stoves and are confronted with raising charcoal prices. In collaboration with a local NGO, about 80 stoves will be sold to food vendors by raising their awareness on the cost-saving potential and health and convenience benefits. Once the stove is accepted and the business case proven, EnDev will strive for replication by training manufacturers on the new stove type and encouraging appropriate consumer financing schemes.

EnDev wishes to contribute to the **initiation of an HTC market** by a) conducting a pilot on gasifier stoves to establish at least one financially viable business case for stove and fuel production, and b) running a survey on grid impact and customer acceptance of electric pressure cooker and thereby advising EDM:

	<p>The pilot on gasifier stoves will analyse availability and affordability of various fuels, the business model for the manufacturer and distributor, and the consumer’s investment case and payment modalities. Results will help the GoM, development partners and EnDev to gain insights on barriers and possible solutions to initiating the market for gasifier stoves.</p> <p>Regarding eCooking, a survey is planned – in collaboration with EnDev Senegal – to assess user interest, WTP, appliance usage, incl. stove stacking, and the impacts on grid load curves. In a second step, 100 households with grid-connections will participate using e-pressure cookers and their user behaviour and energy costs will be analysed. EnDev Mozambique vast M&E experience applying the GACC KPT protocol as well as MFT (CES) survey will assure solid data gathering. The results serve as inputs for EDM’s distribution grid improvement strategies, as evidence for the GoM on the importance of energy efficiency standards, and as general market intelligence for the private sector already active in or entering Mozambique’s eCooking market.</p> <p>EnDev Mozambique will ensure to include key gender concepts into the implementation of clean cooking activities (e.g. empowering women through productive use cookstoves, gender mainstreaming in normalisation/standardization).</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The International Organisation for Migration (IOM) is currently setting up a new programme on sustainable energy solutions in displacement settings. EnDev participates in the planning process and discusses a possible partnership. Details will become known beginning of 2023. As an established local partner in IDP settlement areas, IOM could act as a partner for the private sector supporting ICS (and SHS) marketing activities and logistics and could support EnDev with RBF verification efforts.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is 	<p>The technical assistance by EnDev helps companies to improve the sustainability of their operations as they improve their products, their business models and their internal organization. This contributes to a higher profitability and thus, to financial sustainability of the supported companies.</p> <p>Likewise does the creation of a national ICS standard facilitates access to finance (private investments, loans, and grants) for businesses selling or producing compliant products.</p> <p>EnDev provides demand driven TA to all companies participating in FASER aiming at increasing the sustainability of their operations. Some well performing EnDev companies (FASER beneficiaries) are being advised by the GET.invest Finance Readiness Support. The aim is to gain access to commercial finance, scaling-up activities and thus, increasing sustainability.</p>

<p>there proper handling of e-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																	
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. 	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>37,332</td> <td>2,912</td> <td>2,621</td> <td>347,159</td> </tr> <tr> <td>SI: Access to cooking</td> <td>5</td> <td></td> <td>5</td> <td>6</td> </tr> <tr> <td>PU: Access to cooking</td> <td>34</td> <td></td> <td>34</td> <td>34</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.1: +25 % market share for scalable companies</td> <td><input checked="" type="checkbox"/></td> <td>At least one ICS company reached a market share of at least 25 %.</td> </tr> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>Development of a business case for commercial ICS for food vendors</td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>National Standard based on ISO 19867 / 21276 is created</td> </tr> </tbody> </table> <p>Narrative</p> <p>Supporting BECT in becoming an established service provider for ICS testing and creating a national standard based on ISO guidance are two important milestones in advancing the ICS market, thus EnDev supporting the demand side as well as enabling the environment. Access to clean cooking for at least 20 additional schools will translate into reaching approximately 13,000 children (of which at least 43 % can be assumed to have nutrition deficits according to UNICEF (LNOB+)). Also, it can be assumed that 40 out of the 80 food vendors supported with a productive-use ICS have an income-situation below the national poverty line and thus belong to LNOB+.</p> <p>Besides the continuous support of the low tier cooking sector through the well-established RBF fund with an estimated number of beneficiaries above 30k, EnDev Mozambique will engage with HTC in</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	37,332	2,912	2,621	347,159	SI: Access to cooking	5		5	6	PU: Access to cooking	34		34	34	Outputs	Applicable	Details	Indicator 2.1: +25 % market share for scalable companies	<input checked="" type="checkbox"/>	At least one ICS company reached a market share of at least 25 %.	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Development of a business case for commercial ICS for food vendors	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	National Standard based on ISO 19867 / 21276 is created
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<p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Mozambique reaching at least 3,000 beneficiaries initiating an electric cooking as well as gasifier cooking discussion on national level.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 40 % of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC:13 %</p> <p><input checked="" type="checkbox"/> LNOB+:10 %</p>

Electricity sector

<p>Please briefly describe</p> <p>c. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>d. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) 	<p>79 % of the electricity generation mix in 2020 was hydropower-based, 1 % solar-based. This year more gas-powered plants are becoming online, but solar plants are expected to provide an additional 266 MW of installed capacity by 2030.</p> <p>The state-owned utility, Electricidade de Moçambique (EDM), manages generation, transmission, and distribution. The electricity tariff is highly subsidized: the social tariff is 1,5 EUR Cent/kWh. In the past, a 54 EUR connection fee prohibited poorer households to get connected despite living in grid-connected areas. In late 2020, this connection fee was waived by the president. In the on-going phase, EnDev supported EDM with grid densification by subsidizing prepaid metering, enabling additional 65,940 household connections. This effort initiated by EnDev is upscaled by others: World Bank and African Development Bank are supporting EDM with a total of 300,000 rural and peri-urban household connections. Due to the prevalence of financially strong development banks and the waiving of the connection fees, EnDev will no longer support grid densification in the upcoming phase.</p> <p>Most segments of the market for solar standalone electrification are still in their pioneering phase. Low WTP, limited consumer</p>
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<ul style="list-style-type: none"> • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>financing schemes, and tariffs on SHS imports are the biggest barriers to growth. Market penetration in remote rural areas remains low.</p> <p>There is a high need for the off-grid electrification of social institutions, but no public funds available for installing and maintaining solar systems. Health facilities cater to diverse LNOB+ groups: 19 % of patients are treated for severe mental illnesses, and 17 % for HIV (Ministry of Health 2020). While individual targeting of LNOB+ customers is not possible due to privacy concerns, statistical data at province level could be used for calculating the reach out to people with illnesses that impact their abilities to work and gain income.</p> <p>Nano-grids are not yet a recognized technology in Mozambique. There is currently only one company offering battery-backed systems. Operating nano-grids is not regulated, but tolerated by EDM. The cost-effectiveness of nano-grids for providing tier 3-4 electricity access vis-à-vis other electrification means has not yet been proven.</p>
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<h3 style="color: #00A651;">Electricity sector: Component 3.1 – Off-grid solar</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>EnDev will continue FASER’s energy access window which provides performance-based incentives for solar lanterns and SHS sold with extra top-ups for remote customers. A new LNOB+ RBF window will be launched with incentives for women-led households, Pro-Poor incentives and IDP incentives (see Component 2.1).</p> <p>Technical assistance in form of strategic, demand-based advisory and BDS is offered to solar companies to improve their business strategies. Typical requests are for advisory on how to improve after-sales services for dispersed clients; re-assessments of credit schemes; or how to handle high default rates.</p> <p>Due to the high demand, EnDev supports the electrification of health centres via its FASER RBF window for social institutions (currently electrifying 140 health centres with GBE funding; to be further supported with EnDev core funding in the new phase). As public funding is not available, EnDev revises the RBF approach to be more milestone-based, thus making capital earlier available. One solution to the long-term maintenance challenge is the set-up of a revolving multi-donor fund for maintenance services under the auspices of the National Energy Fund (FUNAE) or the Ministry of Mineral Resources and Energy (MIREME). EnDev is currently presenting details of this idea to other developing partners. As described above approx. 36 % of patients are treated for illnesses that could qualify them as LNOB+. Ex-post EnDev could calculate more accurate figures.</p> <p>Nano-grids are not yet seen as a viable solution for the electrification of rural communities in Mozambique. In the past, EnDev supported a pilot on battery-based nano-grids of the company Powerblox with the main objective of evaluating the Swarm Technology in rural Off-Grid area, but the cost-efficiency of this type of nano-grid vis-à-vis higher tier SHS could not yet be confirmed, as well as there is not a good</p>

	<p>practice guideline based on local examples of nano-grid management. For this purpose, EnDev plans to pilot another nano-grid to generate data on costs and benefits and compare these to the previous Powerblox nano-grid. This will yield a first estimation of the cost-effectiveness of nano-grids in the Mozambican context. It is also intended to incorporate components of PUE to ensure the sustainability of the nano-grid, for this reason the identification of the implementation site will be through the evaluation of economic activities already existing in the communities and electricity demand.</p> <p>EnDev continues to provide market intelligence by supporting the SDG7 platform, which tracks access to energy achievements, and the GIS data platform, which is currently handed over to MIREME.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p><i>Fundação para o Desenvolvimento da Comunidade</i> (FDC) is managing the FASER fund. FDC is a national non-profit organisation working on sustainable development and has staff in over 128 of the country's districts. It has many years of experience with community work and is a well-functioning and transparently managed institution.</p> <p>In the current phase, the EU is providing co-financing for the CovidPlus Window of FASER. This window targets households affected by the impacts of the Covid-19 pandemic that are particularly vulnerable and economically weak.</p> <p>For a possible collaboration with IOM, see cooking section/collaboration partners - new programme on sustainable energy solutions in displacement settings (Component 2.1).</p> <p>EnDev Mozambique will ensure to include key gender concepts into the implementation of off-grid solar activities (e.g. empowering women by giving access to productive use systems, gender mainstreaming in planning nano-grids / health centres and thus integrating gender-differentiated energy needs).</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for 	<p>EnDev aims at improving the institutional sustainability of FASER, its attractiveness as a multi-donor basket fund (NORAD and the EU already contributed in 2020 apart from EnDev and GBE), and its unique selling point vis-à-vis other energy access funds in Mozambique. One strategy of increasing independence of FASER from GIZ is to outsource the verification process to an <i>independent</i> verification agent (IVA). If the verification is no longer performed by GIZ, other donors might be more interested to contribute financially. As a first step, phone verification could be handled by call centres/communication experts. As a second step, individual consultants could be trained as IVAs for field verification.</p> <p>EnDev provides demand driven TA to all companies participating in FASER aiming at increasing the sustainability of their operations. Some well performing EnDev companies (FASER beneficiaries) are being advised by the GET.invest Finance Readiness Support. The aim is to gain access to commercial finance, scaling-up activities and thus, increasing sustainability.</p>

<p>electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																			
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. 	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>2,574</td> <td>1,919</td> <td>771,369</td> </tr> <tr> <td>SI: Access to electricity</td> <td>6</td> <td>6</td> <td>12</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.2: +25 % customers reached by fin. products</td> <td><input checked="" type="checkbox"/></td> <td>1,170 of customers purchasing SHS on PAYG scheme</td> </tr> </tbody> </table> <p>Narrative</p> <p>The technical assistance and BDS provided to solar companies improve their business strategies, enabling them to reach out to more customers, especially LNOB+ target groups. Their capacities to deliver on new RBF funds is improved, helping to reach the country's energy access targets. The GIS data platform with its function to cross-check for potential double reporting of product sales will improve donor coordination on their RBF approaches. The nano-grid pilot will enable stakeholders to assess the upscaling potential in the Mozambican context.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	2,574	1,919	771,369	SI: Access to electricity	6	6	12	Outputs	Applicable	Details	Indicator 1.2: +25 % customers reached by fin. products	<input checked="" type="checkbox"/>	1,170 of customers purchasing SHS on PAYG scheme
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 60 % of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 49 %</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>At the end-of-life of solar products and eCooking appliances, improper battery and e-waste disposal can harm the environment. Mozambique has not yet any recycling facilities and recycling batteries and e-waste in facilities in South Africa would have prohibitive transport costs. However, solar companies in Mozambique have expressed high interest in reducing any negative impacts of their operations. In the on-going phase, EnDev partnered with Solarworks for a pilot on the recycling of battery packs. The company dismantled, tested, and reassembled 599 of its battery packs, thereby confirming technical feasibility of this approach. If this is continued by the company and its peers, the re-use of battery packs will reduce the total number of lithium cells that get disposed. This constitutes a good practice case and demonstrates the willingness of the private sector to the GoM to contribute to a yet to be established national e-waste recycling system.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	3,500,000	
2	EU	2,600,000	Co-financing period 12/2020 until 11/2024; Financing of FASER’s Humanitarian Window.
	Total estimated budget	6,100,000	

15. Nepal

Acronyms

AEPC	Alternative Energy Promotion Centre
CCA	Clean Cooking Alliance
CDSG	Capacity Development Support to Governance
CREE	Community Rural Electrification Entity
CREP	Community Rural Electrification Programme
ESMAP	Energy Sector Management Assistance Program
FCDO	Foreign, Commonwealth and Development
GCF	Green Climate Fund
GDC	Global Distributors Collective
GESI	Gender, Equity and Social Inclusion
GHG	Green House Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HH	Household
HTC	High Tier Cooking
ICT	Information and Communication technologies
LFIs	Local Financial Institutions
LGU	Local Government Unit
LPED	Local and Provincial Economic Development
LMD	Last Mile Distributors
LNOB	Leave No One Behind
MECS	Modern Energy Cooking Services
MHDF	Micro-hydro Debt Fund
M/MHP	Mini/Micro Hydropower Project
NACEUN	National Association of Community Electricity Users-Nepal
NDC	Nationally Determined Contributions
NEA	Nepal Electricity Authority
NECC	Nepal Electric Cooking Campaign
NREP	Nepal Renewable Energy Programme
PMSD	Participatory Market System Development
PUE	Productive Use of Electricity
RBF	Result based Financing
REEEP	Renewable Energy and Energy Efficiency Programme
RF	Revolving Fund
SHS	Solar Home Systems
SI	Social institutions
SMS	Short message service
SME	Small Medium Enterprises
TEVT	Technical Education and Vocational Training
UNDP	Development Program of the United Nations
VKU	German Association of Local Utility
WHO	World Health Organization

Summary and key data

Promoted technologies	  	Mini-grids, grid extension and densification, eCooking
Type of Energy		Hydro
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Nepal will provide sustainable access to electricity and clean cooking technology to the rural population of Nepal.</p> <p>EnDev's Grid Extension Revolving Fund (RF) provides financing to Community Rural Electrification Entities (CREEs) for managing the 10% upfront equity for participating in the Community Rural Electrification Program (CREP). CREP is recognized as a successful vehicle for rural electrification to increase the grid- electrification in areas without access to electricity (with 90% of financial support from the Government and 10% community contribution). Through the RF, EnDev will support additional 3,000 HHs, 450 enterprises, and 50 Social institutions (SIs). The densification sub-component will particularly target marginalized groups and the poorest of the poor (LNOB+) through grant support electrifying additional 3,000 HHs, 50 MSMEs and 50 SIs.</p> <p>EnDev will continue to provide access to finance to the Micro/Mini Hydro Users' Group through Micro Hydro Debt Fund (MHDF). MHDF loan's portfolio will be redesigned and diversified for supporting a broader rural energy market. EnDev will also provide technical assistance to Alternative Energy Promotion Centre (AEPC) for strengthening and accelerating off-grid electrification in the last-mile areas. In total, additional 3,000 HHs, 200 enterprises, and 30 SIs will benefit from these interventions.</p> <p>The HTC component aims to develop an electric cooking market in five provinces by demonstrating the potential to simultaneously build demand and strengthen supply chain supported by an improved enabling environment. The interventions will facilitate access to eCooking solutions for 24,000 HHs and 200 MSMEs through (i) behaviour change support, Result Based discounts on eCooking solutions, house wiring upgrades and electricity use (ii) training and business development support services to last mile distributors, linking with Global Distributor's Collective (GDC) (iii) institutional strengthening of CREEs for reliable electricity supply, evidence based advocacy, linkages with local financial institutions (iv) Gender transformation: agency building to make informed decisions.</p>	
Programming period	01.07.2023 - 31.12.2025	Indicative core budget EUR 2,500,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)
Approx. thematic budget shares	43%	14,2%

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	38,340 people	N/A	13,500 people	including vulnerable groups
Cooking / thermal energy for households	108,900 people	108,900 people	10,800 people	eCooking and vulnerable groups
Electricity and/or cooking / thermal energy for social infrastructure	111 SIs	0	45 SIs	including vulnerable groups
Electricity and/or cooking / thermal energy for productive use / income generation	746 MSMEs	180 MSMEs	45 MSMEs	including eCooking and vulnerable groups

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>In Nepal, 93% of the population have access to electricity from the on-grid (89%) and off-grid sources (4%), but there are still areas (e.g. Karnali and Sudurpaschim Province) in which the electrification rate is below 50%. These two provinces have particularly been adversely affected by the lack of limited transmission network due to the challenging geomorphological conditions.</p> <p>The Distribution System/Rural Electrification Master Plan of the Nepal Electricity Authority (NEA), the national utility responsible for generation, transmission, and distribution of electricity in the country, anticipates that the national grid network will expand to 99% of the households in the country by 2030 and the remaining 1% of households living in very remote areas of the country will be served through permanent off-grid solutions. As stated in the Nepal's enhanced NDC^[1] targets, by 2030, the government plans to increase the reliable supply of clean energy, ensuring access to all.</p> <p>Almost 68%^[2] of HHs in Nepal use solid biomass as their primary means for cooking and most cook with inefficient stoves, which have a high toll on environment and human health. At the same time, more than 90% of the population have access to electricity (cf. above). The proposed project is in line with national policies and will contribute to Nepal's enhanced NDC targets, i.e., to provide 25% of HHs with eCooking as a primary cooking mode by 2030 and the 15th Periodic Plan (until 2023/24), which aims to replace solid biomass with electrical energy and increase consumption of electricity.</p> <p>Besides NEA which has been introduced above, major national stakeholders are Alternative Energy Promotion Centre (AEPIC), an agency under the Ministry of Energy, Water Resources and Irrigation responsible for renewables and off-grid applications as well as other development partners such as the World Bank/ESMAP, Renewable Energy for Rural Livelihood/UNDP, Clean Cooking Alliance (CCA); Modern Energy Cooking Services (MECS), FCDO/NREP programme,</p>
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	<p>etc. EnDev is coordinating and aligning activities with these stakeholders during project design and implementation.</p> <p>The planned interventions will support EnDev's strategic objective to contribute to achieving universal access to clean energy by developing and strengthening inclusive and sustainable energy markets, including those in remote areas, and engaging local stakeholders in line with the government's priorities. Further, it supports EnDev's objective of balancing approaches for transformational change by delivering access to electricity and modern cooking solutions while leaving no one behind.</p> <p>^[1] Second Nationally Determined Contribution (NDC) GoN 2020 (mohp.gov.np)</p> <p>^[2] Draft Country Action Plan 2022</p>
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access) 	<p>Electric cooking can address problems such as indoor air pollution caused by traditional biomass stoves. However, the market remains at Pioneering phase where very few suppliers exist, and uptake is restricted by limited supply chains, as well as low capacity and willingness to pay (due to lack of awareness and low confidence in the technology), and women's limited control over household resources and decision making. Therefore, interventions are required to improve the baseline scenario by strengthening the supply chain, demand stimulation, and contributing to enabling environment.</p> <p>Over the past years, EnDev has spearheaded a market activation approach to tackle multiple supply-and-demand side barriers. The proposed interventions will further activate the market for eCooking to transition towards Expansion phase.</p> <p>Trainings and mentoring services on business development will improve the productivity of last mile distributors (leveraging knowledge from Practical Action's Global Distributors Collective), which will enable companies to improve sales volumes and create job opportunities.</p> <p>Behaviour change activities and innovative marketing will address the cultural embeddedness of traditional cooking and increase awareness and understanding of cleaner alternatives. In addition, support for house wiring upgradation as well as results-based discounts to increase the purchasing power will be introduced to particularly target marginalised groups (e.g. Daltis, victims of natural disasters, female-headed households, very poor households)</p> <p>Targeted capacity building to female customers will improve women's agency (ability to make informed decisions regarding appliance use and engagement in eCooking markets). ECooking uptake will also reduce women's disproportionate health risks and time spent collecting biomass, enabling more time for income generation, family, and recreation.</p> <p>To further improve the enabling environment, EnDev will</p>

<p>in refugee settings)</p> <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<ul style="list-style-type: none"> • continue its collaboration with AEPC to work on stoves' standards and regulations • provide technical assistance to CREEs, improving their business viability and ability to ensure electricity reliability • continue evidence-based advocacy to help to influence local and national governments to encourage affordable electricity tariff, replication and expanded benefits. <p>Overall, Endev's interventions will lead to increased adoption of stoves, increased sales volumes for last mile distributors and increased business viability for CREEs which will enhance the market system for stoves with an established demand/supply chain. The activities will improve gender equality, create jobs, reduce greenhouse gas (GHG) emissions and improve health.</p>
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<h3 style="color: #00A651;">Cooking sector: Component 2.1 – Electric Cooking</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>The project will use a Result Based Financing (RBF) approach for both demand and supply side, building on experiences of both EnDev implementing partners Practical Action and SNV. Proposed interventions are further shaped by knowledge, experience and research conducted by Clean Cooking Alliance (CCA), Modern Energy Cooking Service (MECS) etc. The project will adopt Participatory Market System Development (PMSD) approach to strengthening the participation of marginalised groups and to develop trust and collaboration between market actors (suppliers, LMDs, retailers, marketing agents, repair centres, CREEs, technicians etc.).</p> <p>For demand stimulation, EnDev's proposed interventions include live cooking demonstrations, peer to peer exchange, information dissemination through digital applications (mobile learning applications, SMS, voice broadcasting) developed under EnDev supported digital innovation project. These increase awareness among communities about eCooking benefits focusing on safety, cost-effectiveness, ease of use, cleanliness attributes etc. Result based incentives alongside discount vouchers for appliances and incentives on the electricity bill to all targeted households for the first few months is proposed to encourage the sustained use of eCooking. The project will also facilitate linkages with financial institutions to reduce the affordability gap.</p> <p>Training on the use and benefits of digital applications (learning videos on recipe, electricity safety, etc) will increase the eCooking use and users' confidence. Post-purchase support such as informative SMS, mobile applications on correct and safe use, and beneficiary feedback mechanism; and after sales and warranty services will ensure sustain use. These will support demand stimulation and strengthen behaviour change.</p> <p>Discount incentives through result-based financing will be provided to local distributors. As the ECooking market is in pioneering phase, various inefficiencies exist leading to higher cost (such as marketing, transportation, storage, and transaction costs) of ECooking appliances, uncertain demand and therefore limited suppliers and distributors/retailers are present. Distributors/retailers from rural areas</p>

do not see strong business case in such condition. Therefore, the project aims to compensate such risks and inefficiencies in the supply chain through RBF incentives supporting last mile distributors/retailers to strengthen their investment confidence.

Training on the use and benefits of digital applications (learning videos on recipe, electricity safety, etc) will increase the eCooking use and users' confidence. Post-purchase support such as informative SMS, mobile applications on correct and safe use, and beneficiary feedback mechanism; and after sales and warranty services will ensure sustain use. These will support demand stimulation and strengthen behaviour change.

The project will further provide business development support (business entrepreneurial/marketing skills, costing and pricing, financial planning and management, business growth and expansion, etc.) for last mile distributors (LMDs).-EnDev will train LMDs on Global Distributor's Collective (GDC)'s tools and improve their knowledge enabling them to increase sales, improve marketing and building trust and confidence in the unserved market segment with more resilient and efficient networks. Practical Action hosts the Global Distributors' Collective (GDC): the world's only entity supporting and representing last-mile distributors, (companies selling cook stoves to low-income households in remote regions), in areas such as global advocacy, research and technical assistance.

EnDev will link main suppliers with the LMDs through digital wholesale platform *Damipasal* developed under EnDev supported digital innovation project. The project will also provide technical education and vocational training (TEVT) in the repair of cooking appliances deployed under the project but also rice cookers and water heaters generating diverse income to increase the financial viability of repair services. To further enhance the skills, mobile repair camps will be organised and information on errors will be disseminated through mobile apps.

EnDev building on above past experience, will design and implement specific targeted campaigns on behaviour change communication (live cooking demonstrations, peer to peer exchange, households' dialogues) and agency building to raise awareness, empower LNOB+ and increase demand. Additional incentives for household wiring upgrades will be provided to LNOB+ households.

To strengthen enabling environment, the project will support business plan development of CREEs to make them capable to undertake the responsibility of electricity distribution infrastructures upgradation and conduct load analysis. The project will utilize an organisational self-assessment mobile application developed under EnDev supported innovation window to support CREEs in their capacity building and facilitate linkages with NACEUN's revolving fund to access loans for infrastructure upgradation. The load analysis and household safety audits will help to increase confidence of the users to buy and use the eCooking solutions. Orientation to local governments to implement

	<p>national priorities and multistakeholder advocacy campaign will improve the enabling environment.</p> <p>The project will apply gender transformative approach to strengthen women agency for making informed decision through {mentor-mentee support, household dialogues, agency and leadership training, and e-learning modules.} ; This will increase women’s engagement in the supply chain for energy services/products to build business skills and self-confidence, overcoming limiting beliefs, enhancing their individual cognitive capacity and embracing core values, and access to finance to sustainably manage and expand their businesses. The project will examine the impact and efficiency of last mile distribution companies, women’s engagement in particular. The project will support stakeholders in evidence-based advocacy for inclusion GESI in energy policies.</p> <p>EnDev will continue national multi-stakeholder advocacy campaign and policy dialogues for eCooking growth under National Electric Cooking Campaign (NECC). Key component of advocacy is to engage with government (local and national), utility and regulatory body (Electricity Regulatory Commission) and other development organisations (Clean Cooking Alliance, World Health Organization - WHO) to influence policy and regulation development, through shared experience and participation. Advocacy topics include</p> <ul style="list-style-type: none"> • electric cooking friendly tariff • larger and quicker investments and implementation of distribution infrastructures’ upgrading • implementation of quality standards. <p>The project will work closely with the local governments in project locations to encourage them to include eCooking as one of the major development agenda and ensuring favourable policies for the same. Framework agreement will be done with respective local governments (Palikas) for policy and distribution support. Awareness on e-waste management and piloting of a collection centre in collaboration with e-waste recyclers (<i>Doko Recyclers</i>) will be done.</p> <p>The proposed project locations are Province 1, Bagmati, Gandaki, Karnali and Sudurpaschim provinces.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev will work with local financial institutions leveraging their consumer base, existing networks and credit services to bridge the affordability gap. Further, we will engage local organisations such as community forestry users’ groups (CFUG), women health volunteers, with aligned objective in our demonstration events and with WHO for advocacy work. We will cooperate with EnDev supported revolving fund and Nepal Renewable Energy Programme (NREP) to strengthen access to financial services. The project will also cooperate with GIZ/REEEP on Municipal Energy Plan that encompasses aspects of access to cooking and assessment of existing loading of transformers in coordination with DCS/NEA. The project will build synergies with AEPC’s work under the Green Climate Fund (GCF) to strengthen eCooking market.</p>

<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>According to the Country Action Plan developed by CCA, there is potential for eCooking in more than 500,000 households by 2026 and in 25 percent households by 2030. Further, evidence shows that, from a fuel cost perspective, cooking with electricity is cheaper than using LPG and firewood. In addition, data show that for the majority of households (67.4%) the running cost (monthly tariff) for using electricity for cooking is within the capacity to pay (Practical Action, 2021).</p> <p>For further infrastructure development and improve electricity supply, EnDev has plan to work together with other partners and carryout multi-stakeholder advocacy campaign and policy dialogues under National Electric Cooking Campaign (NECC). The NEA will be the key stakeholder to support this. The entry point for EnDev’s ECooking programme is grid connected peri-urban and rural areas. EnDev is collaborating with NEA and CREEs to address the challenges of infrastructure limitations. NEA is prioritising upgradation in the EnDev project areas. This will have bigger impact to the wellbeing of the rural HHs against inefficient cookstoves and polluting fuels. The off-grid areas need extensive upgradation to make it feasible for eCooking promotion.</p> <p>Financial: the project will work on demand side: behaviour change campaigns; technical trainings to the LMDs, demand stimulations activities, orientation and capacity building support to the local government and supply side: activities linked to long term strategy and viability of operations (cost reduction, economies of scale, strengthening supply chain, involvement of business support organisations, specific training to build business strategies to access remote markets). With this approach, the project will facilitate the financial viability of the market.</p> <p>Institutional: NEA and CREEs have high interest for eCooking uptake due to increased economic viability through electricity sales. EnDev ensures active engagement of key stakeholders (local governments, AEPC, NEA) ensuring their ownership and knowledge transfer. Evidence based advocacy will ensure continuation and improvement in favourable policy environment.</p> <p>Ecological: Awareness for proper handling of eCooking waste will contribute to ecological sustainability.</p> <p>Technological: Safety audits, safety awareness will avoid possible electricity hazards. Repair centers will ensure sustained after sales services.</p> <p>Social: Careful project site selection, coordination with local governments and targeted incentives for disadvantaged groups will avoid social conflicts. Safeguarding will be ensured through trainings, orientations and feedback collection mechanism. After sales and warranty provisions are ensured to comply with technological sustainability.</p>

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

- 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
- 2) the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the

Cooking sector: Component 2.1 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
People: Access to cooking	108,900	108,900	10,800	280,235
PU: Access to cooking	180	180		395

Cooking sector: Component 2.1 – Table 2

Outputs	Applicable	Details
Indicator 1.1: + 25% customers empowered to make investment decisions		BCC activities will empower at least 25%customers to make informed decisions to buy eCooking
Indicator 2.1: +25% market share for scalable companies		50 LMDs will be capacitated to increase their market share

Cooking sector: Component 2.1 – Table 3

Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025
Indicator 1:	-	-	-	-
Indicator 2:	-	-	-	-
Indicator 3:	-	-	-	-

Narrative

The project aims for a sustainable and inclusive market for eCooking. It will focus on market development by making the services available to its customers and making the relevant stakeholders, who could influence policy, to understand the need. The project will reach the poor, making market intelligence available for supply chain actors, and provide services to 24,000 HHs engaging CREEs and LFIs for lasting impacts, and strengthening the enabling environment for making a viable business case for both suppliers and beneficiaries.

Approx. 50% of total budget

Approx contribution to thematic budget for:

- HTC: 43% of total budget
- LNOB+: 7% of total budget

<p>scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	
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Electricity sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Nepal Electricity Authority (NEA) is the national utility responsible for generation, transmission, and distribution of electricity in the country. The government’s plans on rural electrification are primarily implemented by NEA. Alternative Energy Promotion Centre (AEPC), an agency under the Ministry of Energy, Water Resources and Irrigation responsible for renewables and off-grid energy access, is improving rural electrification in remote locations through off-grid decentralized renewable energy systems. At present, 89% of the electricity supply in Nepal is provided through the national grid by NEA (generated from hydropower projects and solar projects developed by NEA and Independent Power Producers, along with electricity imported from India) and 4% through decentralized renewable energy (M/MHP, SHS, Wind) implemented under AEPC.</p> <p>To ensure ‘electricity for all’ by 2030, the Government is supporting the on-grid extension through NEA and off-grid electrification via AEPC. The difficult geographical terrain of the remote areas substantially increases the total project cost for electrification. Despite subsidies for rural electrification, the communities must manage high upfront equity share for participating in the Government Support Program. If belonging to the poorest strata, it becomes a financial burden for rural communities, depriving them from the basic right to electricity. EnDev’s established RF for grid extension and MHDF for off-grid electrification supports these communities and enable them to access financial support to increase electrification rates in their areas.</p> <p>Most rural communities have poor access to information on the availability and conditions/requirement to participate in the national electrification support programs. EnDev provides technical assistance at local level for disseminating the information and facilitating the rural electrification process which will lead to demand creation and a pipeline of projects for capitalization of the RF and MHDF.</p> <p>The National Association of Community Electricity Users-Nepal (NACEUN) supporting CREEs through Grid Extension RF and, AEPC supporting Micro/Mini Hydro Utilities through MHDF seek assistance to redesign, diversify, and manage their respective credit portfolio. This provides a conducive environment to capitalize larger percentage of</p>
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	<p>RF and MHDF in the diversified portfolio in rural energy market for creating a sustainable ecosystem. Further, EnDev prioritizes and provides technical assistance for strengthening institutional capacity of partners enabling them to independently sustain and manage the RF and MHDF in future.</p> <p>Electricity access enables the translation of energy into positive economic outcome creating opportunities for new enterprises leading to increase in income and poverty reduction.</p> <p>Access to electricity leads further to improved health care services in the rural community by strengthening infrastructures and facilitating operation of modern tools and equipment. Also, schools and offices in rural communities will be able to integrate Information and Communication technologies (ICT) for educational and professional purpose.</p> <p>EnDev's interventions for energy access and entrepreneurship development in the last mile areas will open varied avenues for socio-economic development.</p>
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Electricity sector: Component 3.1 – On-grid

<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity</p>	<p>Grid Extension - Community Rural Electrification Entity (CREE) CREEs are basically community utilities, registered as electricity cooperatives and are responsible for the operation, sales, and management within their distribution area. Nepal Electricity Authority (NEA) is the national utility which also sells bulk power to the CREEs.</p> <p>EnDev’s RF for grid extension, provides accessible financing to rural communities (via CREEs), seeking access to the National Grid Electricity. The Government of Nepal (GoN) in 2003 introduced the Community Rural Electrification Program (CREP) aiming to expand the access to electricity services to the rural areas on the demand-driven approach. The CREP is implemented by the Nepal Electricity Authority (NEA) where GoN contributes 90% of the grid extension cost and the CREE contributes the remaining 10 %. Managing the 10% upfront equity cost imposes financial burden to CREEs, depriving the potential households from their basic right to electricity. In this regard, EnDev’s RF for grid-extension provides credit facilities to these CREEs supporting 50% of the equity cost for participating in the CREP. NEA managed the Revolving Fund for the past 12 years, but the mandate to manage the fund has been transferred to NACEUN in 2020.</p> <p>With regards to the RF the following major activities are foreseen under this component:</p> <ul style="list-style-type: none"> • Technical Assistance to existing RF and coordination with NACEUN (fund manager) and NEA (lead implementer of CREP) to prepare a pipeline of potential CREEs seeking grid extension support • Assist CREEs to access the credit support for the establishment of new distribution system and PUE in their area
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contributes LNOB+ (incl. the target group).

- To manage/strengthen the existing RF - to upscale the results achieved in terms of fund mobilization, recovery, and reallocation of fund to support access to electricity, enterprises development and promotion of electric cooking

Redesigning and Diversification of RF Management Guideline for Grid-Extension

With regards to the changing scenario of rural energy market, EnDev Nepal will continue to provide technical assistance to NACEUN to redesign the RF Management Guideline and diversify technical and financial support areas for CREEs and its members.

System upgrading and productive use of electricity has also been incorporated in the RF credit portfolio following the advisory support from EnDev. Loan products like enterprise development support fund has been developed in the RF Management Guideline. to provide credit facilities for managing initial capital to entrepreneurs at a low interest rate. EnDev will continue to provide advisory support and technical assistance to NACEUN to develop other special loan products prioritizing enterprises led by women and marginalized groups.

Grid Extension – Local Government Units (LGUs)

EnDev Nepal will take advantage of the opportunity offered by the federalization process (since 2017), allocating more power to LGUs for undertaking electrification projects. Consequently, the community rural electrification by-law has been amended, and since 2019 municipalities are eligible to function as micro-utilities and take part in the CREP. Electrification is prioritized by all LGUs and the community-electrification-by-law providing opportunity for LGUs to function as micro distribution utilities.

CREP is completely new for LGUs and they have limited knowledge and technical expertise on the framework. Also, NEA's outreach at local level is not very strong to facilitate LGUs for grid extension. Thereby, EnDev will provide technical assistance to LGUs at local level to ensure their access to information, support for preparing procedural documents for grid extension, organize orientation and training programs enabling them to function as municipal distribution utilities. EnDev in collaboration with NACEUN will also coordinate with NEA at the regional and central level for accelerating the grid extension activities at field level.

Institutional Strengthening of NACEUN and CREEs

EnDev will provide technical assistance to strengthen the institutional capacity of NACEUN and CREEs enabling them to manage the RF functions independently in future. To ensure sustainable operation and management of the RF, EnDev will support both institutions through capacity development programs and trainings, improving RF credit support framework, digital transformation, RF knowledge management etc.

Digitalization (CREEs and NACEUN)

Emphasizing innovation for sustainability, EnDev Nepal has supported the development of a cloud-based electricity utility billing system for

	<p>the digital transformation of CREEs. The monitoring and record-keeping practices of CREEs are arduous and accounting errors lead to conflicts within the CREE itself. To address these problems, EnDev Nepal introduced a digital solution which can be used both as a utility billing system and a database system to store all data related to the customer, their energy demand/consumption records, payments, statements, contacts, etc. This solution also enables CREEs to keep track of their internal records i.e. NEA billing records, outage/maintenance records, transformer load factor, and other parameters. EnDev will continue to provide orientation and training to the CREEs to integrate this digital platform for strengthening their organizational and managerial ecosystem to function in a sustainable manner.</p> <p>RBF for Densification targeting LNOB+ For the densification sub-component, EnDev will continue the result-based financing approach initiated in 2017 to provide sustainable energy access to the marginalized groups. On an average, 8% of the HHs in CREE's vicinity, fall under the marginalized group distinguished by the Government of Nepal, and the local government.</p> <ul style="list-style-type: none"> • Dalits - so-called low cast, • Mukta Kamaiya - bonded labour, • Janajati- indigenous people • Single women headed households • victims of natural disaster, and poorest strata of the population (LNOB+), who cannot afford the connection cost. EnDev will provide around 50% grant support for the HHs connection cost, while remaining share to be borne by the beneficiary HHS.
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev will continue to supplement the Government's pro poor intervention and contribute to the national and international target of reaching universal access by 2030.</p> <p>NEA, CREEs, LGUs continue to be assisted via RF and provided technical assistance for the extension of existing distribution system. To accelerate the pace of grid electrification prioritizing Sudurpaschim and Karnali Province, EnDev will implement a targeted approach for technical assistance at the local and central level in collaboration with NACEUN and NEA.</p> <p>EnDev is closely coordinating and partly collaborating with all the relevant GIZ programs such as Local and Provincial Economic Development (LPED), Capacity Development Support to Governance (CD-SG) and particularly Renewable Energy and Energy Efficiency Programme's (REEEP), which works at the community level in RE sector of Nepal. EnDev is further looking for opportunities to collaborate with VKU (German Association of Local Utility) to learn about successful utility models and best practices relevant for CREEs and NACEUN.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking</p>	<p>EnDev will provide technical assistance to NACEUN for the institutional strengthening to manage the RF independently. NACEUN will continue to sustain its operation and management through the minimal service charge received from CREEs by mobilizing the Grid Extension RF. To streamline the operation and management in</p>

<p>into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>NACEUN and CREEs, digital tools have also been introduced. Further, the diversification of the RF portfolio will also support enterprise promotion increasing institutional revenue and sustainability.</p> <p>On the other hand, the central and provincial government has been prioritizing transmission and distribution infrastructures in the remote areas creating an enabling environment for Grid Extension. Cooperative By Laws for the functioning of electricity cooperatives are formulated and endorsed by LGUs simplifying the cooperative registration process for CREEs.</p> <p>EnDev support on preparing technical users', electrical safety, administration, and financial management manuals have played a vital role in strengthening operation and management of CREEs. Also, technical and safety trainings, awareness program on e-waste management have contributed to the ecological sustainability preventing electric hazards.</p> <p>The transmission and distribution lines are regularly monitored to prevent short circuit and accidents. Distribution and Consumer Service/NEA also regularly monitors the infrastructure for smooth operation and supports with upgradation of transformer if needed. Social audit at the preliminary phase of demand collection and handover, annual general meetings, regular executive committee meeting has facilitated to discuss, address any issues and maintain transparency for avoiding social conflicts.</p>																															
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	<p>Narrative</p> <p>The on-grid Intervention aims to provide access to reliable electricity to 3000 rural HHs to improve the quality of their life. To support the Government’s pro poor intervention, the densification subcomponent targets additional 3000 marginalized and poorest of poor (LNOB+) HHs through result-based incentive approach. Access to electricity in CREE’s vicinity will provide a conducive environment fostering 500 new enterprises and 50 SIs. Further, a tailored approach for technical assistance will strengthen the institutional capacity of the value chain actors to create a sustainable rural energy market ecosystem.</p>																		
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 23,3% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 7,2% of total budget</p>																		

Electricity sector: Component 3.2 – Off-grid

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).

Off-grid Electrification through MHDF:

The country has made massive strides in its electrification with current access to electricity near 93. The Government has realized that the remaining 7% who live especially in very remote and mountainous areas is extremely hard to reach and belongs to the most deprived and poorest strata. This group is largely concentrated in two provinces (Karnali and Sudurpaschim), where the overall electrification rate is below 50%. Therefore, EnDev established Micro Hydro Debt Fund (MHDF) in 2010 to provide access to electricity for remote communities, beyond the reach of National Grid – complementing Government Supported Programs. The Renewable Energy (RE) subsidy policy of the GoN previously supported small scale hydro development in rural areas with up to 45 – 50% subsidies to project sites. Prioritizing electrification for the last mile population, the Government has increased subsidy to 60 - 90% of the total project cost (RE Subsidy Policy 2022).

Despite the government’s initiatives for off-grid electrification (via small hydropower projects), the rural communities need to manage the high upfront equity share. To address this, EnDev will continue to support these communities by providing access to credit facilities through its MHDF to minimize the financial burden to rural communities.

Tailored approach for supporting Last Mile Population:

The Government of Nepal in alignment with its the goal of LNOB, has developed a Last Mile Electrification Plan. It identifies very remote and sparsely distributed last mile households (around 97,378 HHs) to be electrified via Micro/Mini Hydro Projects. To contribute to the Government’s SDG and NDC targets and in alignment with its last mile electrification plan, EnDev will implement a tailored approach for building sustainable and clean energy systems in these identified last mile areas.

This approach will support the development of a micro and mini hydropower projects pipeline in the identified last mile areas by carrying out detailed feasibility studies, a requirement for the participation in the Government Subsidy Program. In addition, as the majority of these projects require additional support at the field level for technical supervision, quality control during project implementation, EnDev will provide continuous support for:

- Strengthening the organizational and administrative capacity of Micro/Mini Hydro (M/MH) Users’ Groups(utilities), LGUs and Local Financing Institutions (LFIs)
- Mobilize technical experts for on-field technical supervision and monitoring for enforcing quality standards and
- Strengthening coordination between different stakeholders by facilitating regular exchange to accelerate the project completion
- Procedural and Policy advising on RE promotion

- Conducting business development trainings and creating opportunities for establishment of new enterprises

Redesigning and Diversification of MHDF:

With the rapid expansion of the national grid, the off-grid electrification has been confined to the last mile areas. In this regard, there is limited opportunity for capitalizing the MHDF by solely financing Micro Hydro Projects under the current provision. The fact that currently only about 25% - 30% of the total amount of the MHDF is used, underlines this hypothesis. Thereby, redesigning and diversifying the MHDF portfolio solely from Micro Hydro Projects (>5kW to <100kW) to other potential areas can significantly contribute to capitalize the MHDF for sustainable off-grid electrification and to foster rural enterprises.

The Redesigning of MHDF encompasses the diversification of the loan portfolio to

a. **Mini Hydro Projects (>100kW to <1000kW)**

b. **Sustainability of Existing Micro/Mini Hydro Projects**

- Rehabilitation of existing M/MHPs
- Mini Grids with multiple M/MHPs or Grid Interconnection of M/MHPs
- Scaling up the Generation Capacity of Existing Systems

c. **Digitalization, System Enhancement & Innovation** (AMI - Smart Prepaid Meter etc),

d. **Productive Use of Electricity prioritizing**

- Women and Socially Excluded/Marginalized Groups
- Rural industrialization initiatives using RE
- Agri-Business and Tourism

In alignment with the diversified MHDF portfolio, EnDev will continue to assist communities in remote areas by providing financial and technical assistance through the MHDF. The major activities under MHDF are

- Coordinate with AEPC and partner banks to facilitate the support to M/MHPs including promotion of PUE
- Support for Rehabilitation and Grid Integration, Sustainability and Digitalization of M/MHPs
- Identify and prepare pipeline of M/MHPs and PUEs to be assisted,
- TA to AEPC, Banks, LFIs, LGUs and Users for implementing selected M/MHP projects and PUE,
- On-field monitoring and technical supervision of M/MHP projects

EnDev also prioritizes providing technical assistance to MHP User Committees, specifically to avail of additional government subsidy (eg. GESI and PUE) targeted for remote communities to minimize their financial burden. Further, EnDev will continue to assist rural communities under MHDF for loan repayment to encourage banks to finance more M/MHPs. EnDev will ensure cooperation among stakeholders for appropriate and sustainable results.

	<p>Digitalization: Likewise, under digital transformation and innovation for sustainability of Micro/Mini Hydro Systems, EnDev has successfully piloted the implementation of Advanced Metering Infrastructure - Smart Prepaid Meters in 2 MHPs for remote management. EnDev will continue evidence-based advocacy with AEPC, based on the qualitative and quantitative results of third-party assessment to incorporate AMI-Smart Prepaid Meters as an integral component in the small hydropower systems to facilitate market development.</p> <p>Strengthening Institutional Capacity of AEPC EnDev will provide technical assistance to AEPC via trainings, capacity development activities, assist in formulating a strategic implementation plan for independent operation and management of MHDF in future. Further, EnDev will also support AEPC in knowledge management of MHDF activities.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev will continue to provide technical and financial advisory support to AEPC for strengthening and accelerating off-grid electrification and enterprise promotion. Further, EnDev is supporting to develop a framework with AEPC to mobilize the credit facilities directly through Local Financing Institutions for providing access to credit facilities at the local level, strengthening monitoring and improving loan repayment in future.</p> <p>These interventions will leverage synergy and cooperation with other GIZ energy projects particularly REEEP, which works closely with AEPC and LGUs at the subnational level. Long term partners under MHDF are partner banks that have been managing the funds.</p> <p>EnDev will also cooperate with National Mini/Micro Hydro Power Users Society Nepal (NAMHUS), the umbrella organization of Micro/Mini Hydro Users' Committee of Nepal, for jointly supporting the sustainability of existing micro/mini hydropower projects through rehabilitation and grid interconnection.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is 	<p>Technical assistance for rehabilitation and grid integration will support the sustainability of old, vulnerable M/MHPs providing higher tier access. Likewise, establishment of new M/MHPs in the last mile areas will be bolstered by the tailored technical support fostering new enterprises. Access to credit facilities at the local level along with the technical assistance through MHDF will support in creating a sustainable rural energy market with increased institutional revenue.</p> <p>EnDev is a key partner of AEPC to develop an enabling environment for the transition from off-grid to to-grid connected M/MHPs, rehabilitation and PUE supporting the sectoral sustainability.</p> <p>Further, handbooks and manuals developed for safety and operation, awareness on proper handling of the e-Waste in the power plants followed by on-site coaching, trainings will contribute towards the ecological sustainability, avoiding electricity hazards. Support in development of standard guidelines for regular maintenance in the</p>

<p>there proper handling of e-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>power plants will ensure the proper technical functioning avoiding any major accident and repairs.</p> <p>EnDev’s facilitation in preliminary mass meetings before, during and after project implementation followed by regular public audits, interaction program at the local level has contributed to avoid social conflicts and maintain transparency.</p>																																																					
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<p>2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Narrative</p> <p>The off-grid intervention prioritizes access to electricity to the last mile HHs. 1% HHs of the total population reside in the last mile areas and will be served through permanent off-grid system as indicated in the last mile electrification plan. EnDev will support to develop a sustainable M/MHP infrastructure in these areas for providing access to electricity to an additional 3000 HHs, 200 MSMEs and 30 SIs. EnDev’s intervention to support MSMEs via enterprise development trainings, developing loan products will contribute to boost the rural energy market fostering local employment.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p>	<p>Approx. <u>26,7%</u> of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input type="checkbox"/> LNOB+: %</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>EnDev will ensure safeguarding against any form of exploitation and abuse to the project participants, community members, staff, volunteers, or anyone else impacted by our work. EndeDev will ensure any capacity building or training events will be suitable to women’s time availability and places/venues. The project will take targeted approach for the most marginalised for their meaningful participation and ensure that no one is left behind. The monitoring, evaluation and learning framework will include appropriate sex disaggregated and gender sensitive indicators to strengthen accountability in terms of the progress and identify gaps that need to be addressed.</p> <p>The key approach of the project is to enhance energy-related income-generating activities for women/marginalized community’s entrepreneurship for their economic empowerment and capitalize on their employment opportunities. The project will take up a targeted approach in potential CREEs to set up a Women's Development Fund to provide loans for SMEs and those using electricity for productive purposes. The revolving fund guidelines for the grid extension and redesigning of micro hydro debt fund will provide accessible financing to rural communities prioritising women and socially excluded/marginalised groups.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	2,500,000	
	Total estimated budget	2,500,000	

16. Niger

Acronyms

AFD	French Development Agency
ANERSOL	Nigérien Agency for Solar Energy
ANPER	Agence Nigérienne de Promotion de l'Electrification en milieu Rural
BDS	Business Development Services
CIPMEN	Centre Incubateur des Petites et Moyennes Entreprises
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoN	Government of Niger
HTC	Higher Tier Cooking
ICS	Improved Cookstove
LNOB	Leave no one behind
LPG	Liquid Petroleum Gas
NDC	Nationally determined contributions
OGS	Off-grid solar
ProEMPLOI	GIZ employment programme
PROMAP	GIZ agriculture programme
PUE	Productive use of energy
PV	Photovoltaics
RBF	Results-based financing
SDG	Sustainable Development Goals
SHS	Solar Home System
MSMEs	Micro, Small, and Medium Enterprises
TEI	Team Europe Initiative
WB	The World Bank

Summary and key data

Promoted technologies		Productive use, pico-PV, SHS, improved cookstoves
Type of Energy		Biomass, solar
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>In 2023 EnDev will establish a presence in Niger for the first time. During the 2023-2025 programming cycle, EnDev Niger will lay the groundwork for implementation and commence activities in the cooking, off-grid solar (OGS), and productive use of energy (PUE) sectors.</p> <p>EnDev seeks to improve access to electricity and improved / clean cooking technologies for households, micro enterprises, and agricultural value chains in rural areas. By promoting the productive use of energy and building supply chains for energy products, EnDev will contribute to economic and social development while also strengthening food security and climate resilience in Niger.</p> <p>EnDev’s core activities in Niger will be complemented by co-financing from DGIS to pilot demand-side subsidies (DSS) for OGS product to ensure poor, marginalised groups are not left behind on the road to universal energy access.</p> <p>Improved and clean cooking</p> <p>Given conflicting information regarding the state of the cooking sector, EnDev will first conduct a scoping study to obtain the necessary information to design targeted interventions (evidence, learning transfer, innovation). This will provide recommendations for EnDev support with a focus on both leaving no-one behind (LNOB+) as well as the promotion of higher-tier cooking (HTC) solutions.</p> <p>Off-grid solar electrification</p> <p>EnDev aims to support the development of the OGS market. By providing BDS and technical trainings, EnDev will support companies in entering the market and expanding their commercial reach into rural areas, which will strengthen the sector overall. Supply-side activities will be complimented by capacity development for the Nigerien agency for solar energy (ANERSOL). Joint awareness-raising campaigns with ANERSOLL will help to increase consumers’ willingness-to-pay for quality products, while the DSS pilot will address the limited ability to pay of specific population groups.</p> <p>PUE for agriculture</p> <p>EnDev seeks to increase the number of companies in the PUE sub-sector and accelerate market penetration in rural areas. By providing BDS, technical trainings, sensitisation, and match-making between international and local companies, EnDev will contribute to market development and expand commercial reach. On the demand-side, awareness-raising and BDS for farmers interested in investing in PUE technologies will help to increase demand and agricultural productivity.</p>	

	Partnerships and alliances will be key across all interventions, particularly given EnDev's status as a new actor in Niger.		
Programming period	01.07.2023 – 31.12.2025	Indicative core budget	EUR 1,000,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	2.5%	15%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	4,070 people	N/A	665	<ul style="list-style-type: none"> 1x concept for a quality label 30 men and 30 women trained
Cooking / thermal energy for households	N/A people	N/A	N/A	<ul style="list-style-type: none"> 1x detailed market analysis with recommendations for interventions
Electricity and/or cooking / thermal energy for social infrastructure	N/A SIs	N/A	N/A	
Electricity and/or cooking / thermal energy for productive use / income generation	29 MSMEs	N/A	7	<ul style="list-style-type: none"> 4x PUE pilots conducted 4x companies supported to develop business plans 30 men and 30 women trained

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and 	<p>Niger is one of the poorest countries in the world (HDI 189 of 191⁴⁵). Around 45% of its population live below the poverty line, while more than 60% of people in rural areas are living in multi-deprivation⁴⁶. Approximately 90% depend on agriculture as their primary source of income and are vulnerable to droughts, floods, and land overuse. Water pumps and irrigation systems are not common, partially due to a lack of energy access.</p> <p>The fragile security situation in areas bordering Burkina Faso and Mali and escalating conflicts along the borders to Benin and Nigeria have resulted in approx. 570,000 displaced people living in Niger, and significantly hinder the expansion of energy access.</p> <p>Roughly 80% of its people lack access to electricity, while 87% rely on traditional methods for cooking. Energy is a priority for the GoN, which seeks to reach 80% electricity access by 2035 and deploy improved cookstoves (ICS) at scale by 2030 (urban: 100%; rural: 30%). Interventions in the energy sector are guided by the:</p> <ul style="list-style-type: none"> <i>Document de Politique Nationale d'Electricité</i>
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⁴⁵ [Human Development Report 2021-22 | Human Development Reports \(undp.org\)](#)

⁴⁶ [Understanding poverty and reversals in five charts on Niger \(worldbank.org\)](#)

<p>activities of key actors in the sector (incl. overarching collaborations)</p>	<ul style="list-style-type: none"> • <i>Stratégie Nationale d'Accès à l'Electricité</i> (2018) • <i>Plan Directeur d'Accès À l'Electricité</i> (universal access through 76% grid-connected, 22 % off-grid solar, 2 % mini-grid) • <i>Programme National des Energies Domestiques</i> (2015) stipulating actions to promote improved and higher-tier cooking solutions. • <i>Nationally Determined Contribution</i> (NDC) (GHG reduction in the energy sector:10.6% by 2030). <p>The realisation of these strategies and policies falls to the following institutions:</p> <ul style="list-style-type: none"> • Grid electrification: national utility NIGELEC • Rural electrification (mini-grids): ANPER (<i>Agence Nigérienne de Promotion de l'Electrification en milieu Rural</i>) • Rural electrification (off-grid solar): ANERSOL (<i>Agence Nationale d'Energie Solaire</i>) • Cooking energy: Directorate for Renewable Energy and Cooking Energies at the Ministry of Petroleum, Energy and Renewable Energies <p>In line with the priorities of the GoN, EnDev seeks to improve access to electricity and improved / clean cooking technologies for households, (micro) enterprises and agricultural value chains in rural areas. By promoting the productive use of energy and building supply chains for energy products, EnDev contributes to economic and social development, while also strengthening food security and drought resilience. To reach this objective, EnDev aligns and collaborates with key partners including the World Bank (WB), SNV, and the French Development Agency (AFD).</p>
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Cooking Sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for cooking, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) 	<p>In Niger, 94% of the population relies on biomass for cooking with the majority using fuelwood (88%) and three-stones fires (87%). Access to ICS, higher-tier cooking solutions and fuels remains very limited, especially in rural areas. Demographic growth is increasing demand for fuelwood, outpacing supply, or renewal capacity. The deficit in wood energy is expected to double by 2030, with severe effects on deforestation.</p> <p>Despite political will to promote efficient and higher-tier solutions, the cookstove sector in Niger remains nascent due to a lack of financial and technical support as well as competition from LPG in urban areas. While prices for wood fuel doubled in the last 2 years, the GoN is subsidising locally produced LPG, which is being increasingly used in urban areas given lower prices. Charcoal, mostly imported from Nigeria and Benin, is less widely used than LPG in urban areas but gaining in popularity. Other fuels, mostly agricultural residues, are only marginally used for cooking in Niger.</p> <p>Apart from LPG burners and a limited range of improved stove designs, the stove market in Niger is dominated by a variety of traditional and inefficient technologies. In rural areas, the three-stone</p>

<ul style="list-style-type: none"> • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>fire and metal woodstoves are widely used, though most households use multiple cookstoves.</p> <p>The cookstove sector is largely artisanal and dominated by small workshops with limited capacities. A focused, systematic technical training for stove production does not exist. Profit margins for cooking technologies are minimal, negatively impacting market growth and production professionalization.</p> <p>Given the limited support provided to the sector to date, EnDev is well placed to intervene in the ICS and clean cookstoves market. However, given conflicting information from government⁴⁷, other donors⁴⁸, and international actors⁴⁹ on the actual state of the cooking energy sector, consumer needs, government priorities, current donor support as well as lessons learned from past interventions, EnDev will first conduct a scoping study to obtain the necessary information to design targeted interventions.</p>
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Component 2.1 – Scoping study to define cooking energy interventions

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p>	<p>EnDev Niger will conduct a scoping study to lay the groundwork for implementation (i.e. intervention area “Evidence, learning, innovation”). The study seeks to further explore:</p> <ul style="list-style-type: none"> • <u>Predominant cooking habits</u> incl. primary technologies and modes (pots/pans) used in rural, urban areas displacement settings, fuel usage, cooking habits (outdoor/indoor) and schedules, staple foods; • <u>Conditions of fuel sourcing</u> incl. methods for obtaining cooking fuels (purchased vs collected), charcoal production and usage, kiln usage, and household expenditure; • <u>Availability and specifications of cooking solutions</u> incl. availability and technical specifications of ICS at local markets, use of certification systems or testing centres, potential for the introduction of higher tier cooking solutions i.e. gasifier stoves, electric cooking, biogas etc.; and • <u>Existing interventions supporting the introduction of improved or clean cooking solutions</u> incl. information on GoN priorities and interventions, donor programmes (current and past), lessons learned from previous interventions in the sector. <p>The study will provide recommendations for EnDev support with a focus on both leaving no-one behind (LNOB+) as well as the promotion of higher-tier cooking (HTC) solutions. For LNOB+, the study will particularly focus on needs and proven approaches for refugee settings. For HTC, the study will focus on local production and market development for HTC technologies as well as the general potential for different HTC solutions. It is important to note that electric cooking in grid areas would not be based on renewable energy, given the high share of fossil-fuel-based electricity in the grid (97% in 2020).</p>
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⁴⁷ i.e. Ministry of Petroleum, Energy and Renewable Energies, ANERSOL

⁴⁸ i.e. AFD, World Bank

⁴⁹ i.e. SNV; Mercy Corps, UNHCR

	<p>Based on the information obtained and the recommendations outlined in the study, EnDev will enter into a dialogue with public and private stakeholders to identify key intervention areas. EnDev will also align with donors and implementers in the cooking energy sector (i.e. SNV, AFD, WB) to capitalise on synergies and potential for cooperation.</p> <p>Detailed activities and expected results of the cooking energy component will be presented during the next reprogramming proposal.</p>
<p>Please highlight how the project cooperates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>To identify key intervention areas and align future activities, EnDev will develop relationships with relevant stakeholders incl. SNV, AFD, the WB and the GoN.</p> <p>Implementing the regional <i>African Biodigester Component</i>, SNV has extensive expertise and knowledge of the cooking sector in Niger and the greater Sahel region. Similarly, AFD has experience in promoting sustainable forest management and ICS through the regional project <i>Bois Énergie Sahel</i>. The World Bank is currently setting up the <i>Haské</i> project, which has committed USD 15 million to the promotion of biomass and LPG stoves. EnDev will leverage their knowledge and seek opportunities for cooperation.</p> <p>EnDev will also closely align with the Directorate General for Water and Forests and the Directorate for Renewable Energy and Cooking Energies. EnDev will explore collaboration with GIZ's agriculture project (PROMAP) on the potential use of agricultural residues and/or support for PUE stoves.</p>
<p>Please describe how the results achieved during the course of the project can be anchored in a self-supporting and sustainable way taking not account eh following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there eventually a viable business case in the absence of the project, or sustained alternative funding if not? • Institutional – is there a properly developed enabling environment with supportive institutions as needed? • Ecological – does the project activity do no ecological harm? In particular, is there proper 	<p>By supporting the cooking energy sector, EnDev will address pressing issues regarding ecological and social sustainability. Cooking with wood and unsustainably produced charcoal is intensifying tensions over limited resources and accelerating desertification in Niger. The promotion of improved and HTC solutions reduces pressure on scarce forests and reliance on scarce resources.</p> <p>In defining its activities, EnDev will seek to promote financial, institutional, and technological sustainability (e.g. through capacity development along the ICS and HTC value chains to support long-term market development).</p>

<p>handling of E-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology for replacement and repair available as required, and is the technological know-how for proper repair and maintenance available as required? • Social – is the projects output well appreciated and does it not in any way lead to inequality or social tension otherwise? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e. until 12/2025 or 	<p>Narrative</p> <p>EnDev will conduct a scoping study, which will include lessons learned from past interventions and recommendations for interventions in the cooking sector. Activities as well as outputs and outcomes will be defined in the next reprogramming cycle.</p>

<p>06/2024 for PoPs), and</p> <p>2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and / or leave no one behind</p>	<p>Approx. 8% of total budget</p> <p>Contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> Higher tier cooking: 2.5%</p> <p><input checked="" type="checkbox"/> Leave no one behind: 2.5%</p>

<h2 style="background-color: #009688; color: white; padding: 5px;">Electricity sector</h2>	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for cooking, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in</p>	<p>Market development for off-grid solar (OGS) products in Niger has picked up in recent years. The GoN has lifted import taxes for solar products, and an increasing number of companies (more than 75) are active. However, most companies are not solely dedicated to OGS and offer a range of products and services to remain profitable. Only approx. 12 companies sell Verasol-certified products, which are significantly more expensive. The OGS market is hence dominated by cheap, low-quality products, whose short life spans negatively impact end-users’ trust. It will require significant effort to shift end-users’ willingness and ability to buy quality products. Most companies have weak technical and marketing capacities and lack distribution networks</p>

<p>one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>in rural areas. Only a limited number of technical courses are offered, mostly through ANERSOL. Women particularly lack the capacities and opportunities to actively benefit from employment in the OGS sector.</p> <p>EnDev will provide BDS and technical trainings to existing and new companies to strengthen supply-side capacities and expand distribution into rural areas, as well as strengthening ANERSOL's ability to support the sector. On the demand side, EnDev will conduct awareness-raising campaigns to increase consumer willingness-to-pay for quality products, which will be complemented by the DSS pilots addressing ability to pay. Additionally, EnDev will facilitate the active participation of women, refugees, and rural communities in the OGS sector, thereby contributing to communal empowerment (LNOB+ and poverty alleviation). In sum, EnDev aims to transform the market for OGS products by increasing the number of economically and technically viable suppliers of quality products, strengthening ANERSOL, and raising awareness (market development).</p> <p>The market for solar PUE technologies in the agricultural sector is equally nascent. Farmers lack knowledge on PUE technologies and their potential to increase productivity. Affordability and access to finance are also key barriers. The number of companies offering agricultural PUE technologies is limited. For companies selling PUE products, outreach to customers in rural areas is challenging and after-sales services cannot be guaranteed.</p> <p>EnDev will therefore seek to increase the number of companies in the PUE sub-sector and accelerate market penetration in rural areas. By providing BDS, technical trainings, and match-making between international and local companies, EnDev will contribute to market development. This will be complemented by awareness-raising and BDS for farmers interested in investing in solar PUE technologies to increase demand and agricultural productivity (economic development).</p>
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<h3 style="text-align: center; color: #00A68F;">Component 3.1 – Off-Grid Solar (OGS) Market Development</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation 	<p>EnDev Niger will undertake the following interventions in the OGS sector:</p> <p>a. Trainings / BDS: EnDev will provide tailored BDS to companies already active in the OGS sector or interested in entering the market. BDS will focus on general capacity development around business and distribution practices, suitable marketing strategies (particularly for rural areas), and access to finance.</p> <p>Companies have also reported that the lack of reliable sales agents and trained technicians remains a significant challenge. EnDev will therefore help to identify and provide trainings for 1) sales agents to boost sales and support expansion into new regions, and 2) technicians on installation and maintenance to support long-term after-sales servicing. This will include a dedicated activity to train women as sales agents (LNOB+), implemented with support from local NGOs (i.e. Plan International)</p>

<ul style="list-style-type: none"> • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p>	<p>that have worked on gender in communities. Particularly for rural areas, EnDev will look to partner with a local BDS provider such as the Maison d'Entreprise.</p> <p>While ANERSOL currently offers some technical training, its capacity is limited. EnDev will support ANERSOL in reviewing and updating existing curricula, and, if necessary, developing new complementary curricula (with particular emphasis on technical trainings in rural areas to ensure long-term maintenance of systems).</p> <p>These activities will also improve the readiness and ability of companies to apply for and manage loans / results-based financing (RBF) funds under other donor programs such as the WB Haské project as well as the participation in EnDev's DSS pilot. Overall, EnDev aims to increase the number of profitable and sustainable companies operating across Niger and contribute to strengthening the market dynamic of the OGS sector.</p> <p>b. Policy Advice and capacity development: EnDev will support ANERSOL in developing a national label for quality products that are already internationally certified (e.g. Verasol certified). While awareness-raising efforts are underway, customers still find it difficult to identify quality-certified products or to understand the value derived from paying higher prices. A national label that includes its own brand and marketing campaign will increase awareness among the population as well as willingness to invest in quality products. During this implementation phase, EnDev will 1) initiate the dialogue on a national quality label with relevant stakeholders, 2) conduct a needs assessment and develop an options paper with recommendations, 3) support the initial development and develop plans for the operationalization. Beyond the envisioned support, further work will be necessary to develop the capacity of ANERSOL and other relevant public institutions to implement and enforce the label. Depending on the outcome of the options paper, EnDev will explore the appropriate budget and avenues for further support in the next programming cycle or through co-financing.</p> <p>c. Awareness raising: In response to the low overall quality of OGS products, EnDev will sensitise the population regarding existing technologies, financing options, quality criteria, and certification schemes. Awareness-raising activities will be developed together with ANERSOL and multipliers such as CIPMEN (<i>Centre Incubateur des Petites et Moyennes Entreprises</i>) and will be closely coordinated with the WB Haské project. Activities will make use of various communication channels (e.g. radio, TV, social media, mobile phones, posters, mobile campaign trucks, etc.) and employ gender-sensitive messaging to reach both men and women.</p> <p>Additionally, women's saving groups and cooperatives will be specifically targeted by awareness-raising activities. EnDev will collaborate with GIZ projects and NGOs (i.e. Plan International,</p>
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	<p>Care International) to benefit from their experience with and connections to women’s groups.</p> <p>EnDev will also conduct a dedicated awareness-raising activities targeting refugees and host communities. The exact refugee-hosting districts will be identified in collaboration with UNHCR, ANERSOL, and the WB. This activity will also complement EnDev’s demand-side subsidy (DSS) component. This component is being funded by DGIS and seeks to pilot new models for delivering demand-side subsidies to vulnerable and extreme-poor households. In Niger, the component will seek to pilot approaches for promoting subsidised SHS in displacement settings in closely aligned with the WB Haské project. Additional awareness raising for the DSS target group is foreseen and will be coordinated with EnDev’s core communications activities to ensure synergies.</p>
<p>Please highlight how the project cooperates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>As the leading agency for the solar sector and the solar project implementation unit for the Haské project, ANERSOL will be a crucial partner for EnDev. Close coordination and, where possible, collaboration with the Haské project is foreseen to leverage impacts and synergies beyond the DSS component. For interventions targeting women, EnDev will seek alliances with NGOs (i.e. Plan International, Care International) to benefit from their expertise and complement their activities supporting women’s groups.</p> <p>EnDev Niger will be embedded in the GIZ portfolio in the country, providing the potential for collaboration with the programmes on agriculture, employment creation (BDS, technical trainings), and food security.</p> <p>Through its engagement in the Team Europe Initiative, EnDev will also pursue co-financing opportunities with the European Union and other donors.</p>
<p>Please describe how the results achieved during the course of the project can be anchored in a self-supporting and sustainable way taking not account eh following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there eventually a viable business case in the absence of the project, or sustained alternative funding if not? • Institutional – is there a properly developed enabling environment with supportive institutions as needed? • Ecological – does the project activity 	<p>By working through and strengthening ANERSOL as the leading entity for off-grid solar market development in Niger, EnDev is strengthening the institutional framework for OGS.</p> <p>The collaboration with ANERSOL on a national OGS labelling scheme will also contribute to technological sustainability and reduce the environmental waste from low-quality products. EnDev will also explore possibilities for addressing e-waste.</p> <p>Financial sustainability will be ensured by building strong business cases together with companies, while engagement with local communities / groups provide ownership and minimise social tensions.</p>

<p>do no ecological harm? In particular, is there proper handling of E-waste for electrification projects?</p> <ul style="list-style-type: none"> • Technological – is technology for replacement and repair available as required, and is the technological know-how for proper repair and maintenance available as required? • Social – is the projects output well appreciated and does it not in any way lead to inequality or social tension otherwise? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																		
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<p>programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p> <p>2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<ul style="list-style-type: none"> • Given the lack of data on past sales, product ranges, and potential private sector partners, outcomes were estimated using the cost-efficiency for pre-configured PV products in Mali for the last reporting period. Mali was used as a proxy given its similar market development stage and similarly volatile political / security situation. Estimates for both regular and LNOB+ outcomes are conservative and will be updated in the next programming period. Given the prevailing multi-dimensional poverty in rural areas, it is highly likely that the share of LNOB+ results will increase once target regions have been selected. • Developing capacities of OGS suppliers will contribute to company growth, economic growth and increased income possibilities and employment (number of sales agents and technicians). • The improvement of market intelligence and greater availability of data will increase the overall transparency in the market and can contribute to attracting new investments. • Supporting active participation of women in trainings, campaigning and sales structures will contribute to female empowerment and social transformation in rural communities.
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and / or leave no one behind</p>	<p>Approx. 53% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> Leave no one behind: 5% (training and support modules specifically targeting women; awareness campaigning in hardest to reach rural settings)</p>

<h3 style="text-align: center; color: #00A68F;">Component 3.2 – Promotion of PUE in the agricultural sector</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of</p>	<p>The market for PUE technologies in Niger is still in the pre-commercial phase, with some companies offering solar pumps, but few selling other solar PUE products for the agricultural sector (i.e. grinders, mills, dryers, refrigerators). Therefore, EnDev will intervene to support market expansion into the pioneering phase through the following interventions:</p> <p>a) Evidence, learning transfer, innovation: It is necessary to first gain a deeper understanding of the PUE sector in Niger.</p>

<p>the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p>	<p>Therefore, EnDev will prepare a scoping study to fill data gaps as well as assess the need and demand for solar-driven technologies within various agricultural supply chains in specific intervention zones. Based on the results of the study as well as the groundwork on quality assurance, testing and labelling by the Global LEAP Awards and CLASP, EnDev will select specific supply chains and suitable technologies to work with. Beyond this, the study will also identify international and national companies capable of supplying, installing, and maintaining products, and provide recommendations on how to strengthen their technical, operational, and financial capacities. The resulting knowledge on market potential, state-of-the art technologies, international manufacturers, and supply-chains will be shared with PUE retailers and interested companies to encourage market expansion.</p> <p>Through the study, EnDev will also explore existing local PUE innovations as well as potential collaboration with local entrepreneurs and organisations (i.e. N-Dev, a Nigerien NGO supporting small businesses and associations in improving agricultural value chains).</p> <p>b) Training, BDS: Based on the results and recommendations of the scoping study, EnDev will develop and offer targeted capacity development to strengthen companies (interested in) selling agricultural PUE products. Technical trainings for companies as well as agents in rural areas will cover the functionality, installation, and maintenance of specific systems to ensure enduring use. This will also include a dedicated activity to train women as sales agents (LNOB+). Trainings will be complemented by BDS to strengthen companies to expand their commercial reach into areas with the most agricultural productivity. Key elements will be business plan development, marketing, sales, supply chain development, and access to finance.</p> <p>On the demand-side, EnDev will offer BDS for potential clients interested in investing in PUE appliances. The business trainings will focus on supporting farmers and entrepreneurs in making good investment decisions while considering access to markets and the potential to sell the surplus in production. These trainings will also include match-making with suppliers and financing institutions, as well as technical trainings to ensure proper handling of the appliances (in collaboration with the installation company).</p> <p>EnDev foresees to offer specific technical and BDS trainings for potential agents and clients in displacement settings to provide opportunities for income generation (LNOB+). The activity will build on efforts by UNHCR and other development partners to strengthen livelihoods and help refugees capitalise on their skills and past professional experience. Specific intervention zones for this activity will be selected together with the government, UNHCR, and other relevant partners (i.e. the WB).</p>
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To maximise the reach of its BDS activities, EnDev will closely collaborate with regionally embedded BDS providers such as the “maisons d’entreprises,” which are government-run training centres present in every region of Niger. They offer different levels of support and coaching for micro, small and medium enterprises (MSMEs) and farmers, and are also responsible for registering and licensing new companies. Many of these centres receive support from the GIZ employment programme (ProEMPLOI).

- c) Access to Finance:** Access to finance is a significant barrier for both PUE companies and consumers. On the supply side, the majority of retailers are neither qualified nor capable of managing a commercial loan or participating in RBF-schemes. In the first intervention phase, EnDev will therefore aim to support companies to grow, professionalize, and become “RBF / grant-ready” (see section b). In a second phase, it could be envisaged to support PUE market growth through an RBF scheme (in close coordination with the WB Haské project).

On the demand side, EnDev will seek to collaborate with local women’s savings groups (“tantine”) and women’s cooperatives to facilitate access to finance. The focus will be on sensitising these groups on PUE investment opportunities and, where applicable, supporting the assessment of loan applications for the purchase of PUE products. The GIZ employment project ProEMPLOI and NGOs working with local savings groups (i.e. Care International) will be key partners in this endeavour. Through these activities, EnDev hopes to facilitate the sale of PUE systems, while empowering female entrepreneurs in rural areas.

- d) Awareness raising:** To increase demand for PUE technologies among farmers and stakeholders in the agricultural sector, EnDev will partner with ANERSOL, the WB Haské project, and the GIZ agricultural programme to raise awareness on available PUE technologies as well as their potential uses, benefits, and functionality. Communication will be gender sensitive with targeted messages for men and women with dedicated campaigns to sensitise female farming cooperatives and refugees.

In addition, EnDev will be conducting 4 pilots at different sites to test and show various PUE technologies. For these pilots, EnDev will procure relevant equipment, support the installation, and provide training and guidance to beneficiaries regarding use and maintenance. These sites will be used to raise further awareness and conduct technical trainings. It is envisaged that at least 1 pilot will be implemented in a refugee hosting area and 1 to 2 pilots will focus on disadvantaged female farming cooperatives with the support of the GIZ project PROMAP.

Through complementary awareness raising, pilots, training, and collaboration with local savings groups, the component will

	<p>seek to generate demand and improve income generation opportunities for women and displaced peoples.</p>
<p>Please highlight how the project cooperates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or support interconnections with other sectors. 	<p>ANERSOL will also be the leading public institution for the implementation of the PUE component. Close coordination with ANERSOL will be necessary on the WB Haské project, which has a dedicated component on PUE. For interventions targeting women, Care International, Plan International, and other local NGOs will be important partners, while local BDS provides such as the “maison d’entreprise” will be involved in capacity-development activities.</p> <p>Being embedded in the GIZ portfolio, EnDev Niger will also seek to capitalise on the experiences and presence of the GIZ programmes on agriculture (PROMAP) and employment creation (ProEMPLOI), particularly in the areas of Agadez and Tillabéri.</p> <p>Co-financing options will also be pursued with the European Union.</p>
<p>Please describe how the results achieved during the course of the project can be anchored in a self-supporting and sustainable way taking not account eh following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there eventually a viable business case in the absence of the project, or sustained alternative funding if not? • Institutional – is there a properly developed enabling environment with supportive institutions as needed? • Ecological – does the project activity do no ecological harm? In particular, is there proper handling of E-waste for electrification projects? • Technological – is technology for replacement and 	<p>By strengthening the business case for PUE products and improving the productivity of agricultural value chains, the component will contribute to the financial sustainability of farmers and the PUE market. The involvement of local savings groups will also contribute to access to finance for consumers, while ensuring social acceptance (social sustainability).</p> <p>Institutional sustainability will be ensured through the close collaboration with ANERSOL and regional partners (such as the maisons d’entreprises) who will continue to support the sector.</p> <p>The technical trainings provided with the help of these partners will furthermore ensure proper installation, maintenance, and repair (technological sustainability).</p> <p>Finally, by facilitating the introduction of solar-powered technologies, the component will minimise the usage of diesel-driven generators and related GHG emissions (environmental sustainability).</p>

<p>repair available as required, and is the technological know-how for proper repair and maintenance available as required?</p> <ul style="list-style-type: none"> • Social – is the projects output well appreciated and does it not in any way lead to inequality or social tension otherwise? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																			
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 	<p>Electricity sector: Component 3.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>SI: Access to electricity</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>PU: Access to electricity</td> <td>29</td> <td>7</td> <td>29</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.2 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Target value 4</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.2 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Number of PUE pilots conducted</td> <td>4</td> <td>4</td> <td>4</td> </tr> <tr> <td>Number of PUE clients that have received technical training</td> <td>60</td> <td>30 (of which 15 women and 15 refugees)</td> <td>60</td> </tr> </tbody> </table> <p>Narrative</p> <ul style="list-style-type: none"> • Given the lack of data on past sales, relevant products, demand, and potential private sector partners, outcomes were estimated using the cost-efficiency for customised (PUE) PV products in Mali for the last reporting period. Mali was used as a proxy given its similar market development stage and similarly volatile political / security situation. Estimates for both regular and LNOB+ outcomes are conservative and will be updated in the next programming period. Given the prevailing multi-dimensional poverty in rural 	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	N/A	N/A	N/A	SI: Access to electricity	N/A	N/A	N/A	PU: Access to electricity	29	7	29	Outputs	Applicable	Details	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Target value 4	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	Number of PUE pilots conducted	4	4	4	Number of PUE clients that have received technical training	60	30 (of which 15 women and 15 refugees)	60
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<p>2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>areas, it is highly likely that the share of LNOB+ results will increase once target regions have been selected.</p> <ul style="list-style-type: none"> • EnDev will help to develop employment and income opportunities for companies by supporting the expansion of their PUE product portfolio and reaching out to rural areas. • By promoting solar PUE systems, diesel-powered technologies will be replaced and GHG emissions will be reduced. • By increasing the productivity of farmers and agricultural cooperatives local economic growth will be encourage and food security increased.
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and / or leave no one behind</p>	<p>Approx. 39% of total budget; total of 450,000 EUR The budget will be roughly distributed as follows:</p> <ul style="list-style-type: none"> - scoping for suitable technologies: 50,000 EUR - support for demand-side private sector: 200,000 EUR - support for supply-side private sector: 200,000 EUR <p>Contribution to thematic budget for: <input checked="" type="checkbox"/> LNOB: 7.5% of overall budget (25,000); focus on women</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p> <p>Please attach the last integrated Peace and Conflict Analysis (iPCA) to your proposal as well.</p>	<p>Niger is marked by fragility and armed conflicts in the regions bordering Nigeria, Benin, Burkina Faso, and Mali, creating a vulnerable context for implementation. Regarding the level of poverty and the large population of displaced people and host communities, thoroughly applying “do-no-harm” principles and a “leave-no-one-behind” approach is of utmost importance.</p> <p>Implementation at the local level needs to be closely coordinated with communal decision-making structures and integrate gender and socio-culturally sensitive practices (e.g. respecting the importance of equality in Nigerien society). Before beginning the implementation of activities, it is important to seek acceptance, support, and ownership from stakeholders and decision-making structures on community and district level.</p> <p>To minimise negative environmental impacts, the project will sensitize relevant partners on risks and requirements related to electronic and</p>
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other forms of waste. While there are no facilities for PV recycling in Niger, EnDev will align with World Bank, ANERSOL, and private stakeholders to identify appropriate waste collection structures.

Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	1,000,000	
2	DGIS	4,452,000	DSS Programme
	Total estimated budget	5,452,000	

17. Rwanda

Acronyms

BDS	Business Development Services
BEST	Biomass Energy Strategy
BRD	Development Bank of Rwanda
CaaS	Cooling as a Service
CRRF	Comprehensive Refugee Response Framework
EAQIP	Rwanda Energy Access and Quality Improvement
EcoRef	Economic Inclusion of Refugees and Host Communities in Rwanda
EDCL	Energy Development Corporation Limited
EDP	Energy Private Developer
EnDev	Energising Development
ESSP	Energy Sector Strategy Plan
EU	European Union
GCR	Global Compact on Refugees
GDP	Gross Domestic Product
GOGLA	Global Association for the Off-Grid Solar Energy Industry
GoR	Government of Rwanda
HCD	Human Capacity Development
HHs	Households
HTC	Higher-Tier Cooking
ICS	Improved Cookstoves
LNOB	Leave No One Behind
LPG	Liquefied Petroleum Gas
MC E4I	Mercy Corps - Energy 4 Impact
MINAGRI	Ministry of Agriculture
MINEMA	Ministry in Charge of Emergency Management
MININFRA	Ministry for Infrastructure
NDC	Nationally Determined Contribution
NEP	National Electrification Plan
PAYGo	Pay-As-You-Go
PSP Hydro	Private Sector Participation in Micro-hydro Power Supply for Rural Development
PUE	Productive Use of Energy
RAB	Rwanda Agriculture and Animal Resources Development Board
RBF	Results-Based Finance
RBF4R	Results-Based Financing for Refugees
RE	Renewable Energy
RE4R	Renewable Energy for Refugees
ReCIC	Reducing Climate Impact of Cooking in Rwanda Through Improved Cooking Systems
RDB	Rwanda Development Board
REF	Renewable Energy Fund
REG	Rwandan Energy Group
RURA	Rwanda Utility Regulatory Authority
SAIP	Sustainable Agricultural Intensification and Food Security Project
SHS	Solar Home Systems
SIDA	Swedish International Development Cooperation Agency
SPIS	Solar-Powered Irrigation System
SSIT	Small-Scale Irrigation Technologies Program

SUN	Supporting UNHCR in the Operationalization of the Global Compact on Refugees in the Context of the Humanitarian-Development-Peace Nexus
SWP	Solar Water Pump
TA	Technical Assistance
UNHCR	United Nations High Commissioner for Refugees
WE4F	Water & Energy for Food

Summary and key data

Promoted technologies		Mini-grids, SHS, improved cookstoves
Type of Energy		Solar, biomass
Summary of proposed intervention(s) Please describe your impact, the overall objective, and the key interventions i.e.: <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Given Government of Rwanda's (GoR) new ambitious on-grid targets, the current 74.5% access rate, and the successful handover of EnDev's flagship solar ProPoor results-based finance (RBF) in 2021, EnDev Rwanda proposes two new sub-components as it gradually phases out of household access initiatives. The new components build on the current national context, EnDev's strategic orientation as well as its core strength in developing new markets and addressing the affordability gap for beneficiaries of off-grid services.</p> <p>RBF for refugees: This component aims to increase access to HTC stoves for vulnerable refugee households (HHs) in camps through an LNOB-sensitive RBF approach, coupled with awareness raising and sustainable renewable energy (RE) focused livelihood development, and is focused on working closely with the GoR, UNHCR as well as the private sector, aligning with existing initiatives, and experienced partners.</p> <p>Solar Productive Use of Energy (PUE): This component aims to support and increase uptake of solar technology by (smallholder) farmers to increase productivity and reduce postharvest losses, through an RBF-driven development and testing of consumer payment schemes for solar-powered irrigation and the piloting of solar cooling and drying technology.</p> <p>Private sector participation in hydropower for rural development (PSP hydro): Running since 2006, PSP Hydro is being phased out, as on-grid power production – including private production – has increased significantly in recent years. The three ongoing projects supported by EnDev through capacity building and access to finance will be completed in this phase</p> <p>Mini-grid results-based financing (RBF) and productive use of energy (PUE): the PUE component has been completed successfully and EnDev Rwanda plans to complete its Mini-Grid RBF in this phase.</p> <p>Additionally, the EU co-financed Reducing climate impact of cooking in Rwanda through improved cooking systems (ReCIC) will run until 11/2025</p> <p>Reducing climate impact of cooking in Rwanda through improved cooking systems (RECIC): This new component is funded through the European Union's Global Climate Change Alliance Plus initiative and will run until 2025. Interventions include capacity building focussing on business development and technical skills incl. quality control and R&D, performance-based incentives</p>	

	and awareness-raising . The goal is to establish sustainable demand and supply of improved stoves and fuels to benefit more than 500,000 people by 2025		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 3,100,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	29,9%	30,8%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in HHs	35,891 people	N/A	0	2 mini-grids constructed
Cooking / thermal energy for HHs	5,931 people	5,931	5,931	All of which are considered particularly vulnerable in an LNOB setting
Electricity and/or cooking / thermal energy for social infrastructure	5 SIs	0	0	
Electricity and/or cooking / thermal energy for productive use / income generation	324 MSMEs	0	42	Including 20 jobs created and a minimum of 1 business plan developed for a supplier

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies 	<p>Recognized for its ambitious access and climate targets, the GoR aims to achieve universal electricity access by 2024. As of September 2022, 74.5% of HHs have access to electricity, of which 23.6% are using off-grid energy services and 50.9% are connected to the grid.⁵⁰ EnDev's programs are deeply embedded in Rwanda's institutional landscape, with close collaboration with the Ministry for Infrastructure (MININFRA) and the energy utility, the Rwandan Energy Group (REG), through its subsidiary, Energy Development Corporation Limited (EDCL), which is responsible for implementing MININFRA's off-grid targets.</p> <p>As of 2006, EnDev has played a significant role in the energy sector through its market-based approaches and close collaboration with the private sector, being particularly successful in catalysing innovative approaches to market development. EnDev has supported the market development of grid-connected micro-hydro projects (PSP Hydro), developed Rwanda's first privately run micro-hydro power plant and played a significant role in the development of the solar off-grid</p>
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⁵⁰ [Access \(reg.rw\)](https://reg.rw)

<p>and activities of key actors in the sector (incl. overarching collaborations)</p>	<p>market, which resulted in upscaling its solar RBF Pro Poor pilot to a USD 30m nationwide initiative.</p> <p>As Rwanda signals an increased focus on on-grid electrification through reduced targets for off-grid, EnDev will focus on the promotion of off-grid PUE technologies, which aims to increase the impact of electrification through value addition while supporting employment and income generation in the agricultural sector, contributing to EnDev's overarching objectives of Energising Opportunities and Energising Climate. EnDev will continue to work with REG-EDCL, as well work closely with agencies under the Ministry of Agriculture.</p> <p>Simultaneously, EnDev Rwanda will work on humanitarian energy, with a view to Energising Lives and LNOB+. Rwanda hosts 127,221 refugees mainly from the Democratic Republic of Congo and Burundi (as of September 2022),⁵¹ some of them living in camps for more than 20 years.⁵² Addressing the protracted situation, the GoR aims for the graduation of refugees from aid dependency. Furthermore, energy is stressed in the GoR's Comprehensive Refugee Response Framework (CRRF) pledges. EnDev will implement market-based approaches to promote HTC in displacement settings and support livelihoods and micro-entrepreneurs. EnDev will work closely with the Ministry in charge of Emergency Management (MINEMA) and UNHCR.</p>
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Cooking sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – 	<p>According to MININFRA's latest Energy Backward Looking Joint Sector Review,⁵³ around 77% of the population continues to use traditional cooking methods such as three-stone fires and wood fuel. Due to its extremely high population density and land size, Rwanda is one of the most vulnerable countries to deforestation. The GoR's updated NDC aims towards dissemination of modern efficient cookstoves to 80% of the rural and 50% of the urban population.⁵⁴ Similarly, Rwanda's 2018 Biomass Energy Strategy (BEST) set as the main target to reduce the share of HHs that use inefficient cooking solutions from the baseline value of 83.3% recorded in 2014 to 42% by 2024.</p> <p>To contribute towards these goals, EnDev has been implementing the EU co-funded ReCIC project since November 2020 to address the supply and demand side barriers for improved cookstoves (ICS) and improved/alternative fuel.⁵⁵ ReCIC aims to raise nationwide production of ICS to 200,000/year with a cumulative 500,000 ICS sold</p>
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⁵¹ [Country - Rwanda \(unhcr.org\)](https://www.unhcr.org/country/rwanda)

⁵² UNHCR (2020). [Rwanda Country Refugee Response Plan 2020-2021](#). Kigali, Rwanda.

⁵³ Current draft version – final version forthcoming. Ministry of Infrastructure (2022). Energy Sector. Backward Looking Joint Sector Review Report for FY 2021/22. Kigali, Rwanda.

⁵⁴ [Rwanda Updated NDC May 2020.pdf \(unfccc.int\)](#)

⁵⁵ The activities aim to set up a sustainable production and dissemination for improved cookstoves as well as for improved/alternative fuel by helping increase production capacities while improving consumer awareness.

<p>mainly relating to household access)</p> <ul style="list-style-type: none"> • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>to households by October 2025. ReCIC is technology neutral. Interventions include:</p> <ul style="list-style-type: none"> • business growth fund to support 14 companies (including training, provision of equipment, BDS support) • marketing and awareness raising at grassroots and national level. • strengthening the policy and regulatory framework • improving national testing capacities and quality control and testing/upgrading stoves • financing products for ICS users • support for improved fuel production <p>In the programming period 2023-25, EnDev will expand its market-based cooking activities in the humanitarian space, where there is a high need for affordable, reliable, modern and renewable cooking solutions:</p> <ul style="list-style-type: none"> • Rwanda has five refugee camps, with a total number of 26,204 refugee households and a total refugee population of 113,674 (as at Dec 2022, excl. urban refugees), who do not benefit from nation-wide energy subsidy programmes. • Since 2018, firewood has been banned in refugee camps, with the GoR pledging to “ensure sustainable use of natural resources by providing clean and renewable energy solutions in refugee and host community HHs”⁵⁶ • Access to energy supply for cooking varies widely among the camps.⁵⁷ The majority relies either on lower-tier stoves, three stone fires, or – in Mahama and Mugombwa camps which host 55% of the overall refugee population – on unsustainable free hand-outs of liquefied petroleum gas (LPG). There is very little awareness on alternative cooking solutions. • Due to budget constraints, LPG ratios in the two camps are being drastically reduced, aggravating the precarious situation of refugees. With a lack of affordable alternatives, there is a high likelihood of these HHs returning to three-stone fires and illegal firewood.
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Cooking sector: Component 2.1 – Results-based Financing for Refugees in Cooking (RBF4R)

⁵⁶ [Rwanda | The Global Compact on Refugees | UNHCR \(globalcompactrefugees.org\)](https://www.unhcr.org/globalcompactrefugees.org)

⁵⁷ In two of the camps, Mahama⁵⁷ and Mugombwa, all HHs were given LPG stoves and receive a monthly LPG ration. Kigeme camp residents are primarily reliant on lower-tier improved cookstoves (83%) whilst the remaining two camps, Kiziba and Nyabiheke, are reliant on a mix of improved and basic stoves (mud stoves, three stone fires). Source: Preliminary baseline analysis subject to validation, not published. Practical Action (2022a): RE4R II Energy Needs Assessment. Preliminary insights from data collection. Rwanda.

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> Training, BDS Access to Finance Evidence, learning transfer, innovation Policy advice and capacity development Partnerships and alliances Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>While the EnDev ReCIC and national EAQIP cooking RBF cover the entire country and are addressing challenges of affordability, production and the enabling environment, the RBF4R sub-component complements both initiatives and expands cooking interventions into the underserved LNOB context.</p> <p>Objective: Enhance access to HTC stoves in refugee camps through a demand-side subsidy aimed at the inclusion of (the most) vulnerable refugee HHs with a very low ability to pay.</p> <p>Comparative advantage of our implementing partner: Practical Action has substantive experience in the refugee settings in Rwanda and is currently implementing the RE4R project phase II.⁵⁸ One activity of the RE4R II is to provide financial and technical assistance to HTC stove and sustainable fuel suppliers to support their market entry and develop distribution channels, as well as support their fuel production. In return, suppliers will reduce stove prices for refugees.⁵⁹</p> <p>According to a WFP vulnerability index, roughly 87% of the 33,790 refugee HH's are considered vulnerable;⁶⁰ 44% of heads of HHs report to have no source of income, mainly due to unemployment;⁶¹ 18% of the overall refugee population have specific protection needs.⁶² The extremely low ability to pay often excludes the vulnerable from market-based approaches. This is particularly true for the highly vulnerable assisted by the NGO Humanity and Inclusion (e.g. the elderly, people with disabilities and children-headed HHS).</p> <p>EnDev will enter into a grant agreement with Practical Action which aligns with the RE4R II intervention to enhance, through an RBF, access for the groups left behind by the current market approach.⁶³</p> <p>Comparative advantage of EnDev: The ReCIC project has positioned EnDev as a key stakeholder in the cooking sector. Moreover, EnDev Rwanda has a track record of successfully deploying RBF schemes to support the transformation of markets to be more inclusive (see EnDev Rwanda, ProPoor RBF, 2019-2021). Through the grant agreement with Practical Action, EnDev will apply its in-depth RBF experience and capacitate the partner on the use of this instrument.</p>
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⁵⁸ Funded by the Swedish International Development Cooperation Agency (SIDA), Practical Action is currently setting up the Renewable Energy for Refugees Phase II (RE4R II), a 4-year project building on the achievements of the IKEA Foundation funded RE4R I (2018-2022), using market-based approaches to address the energy needs of HHs, enterprises and communities in and around five refugee camps in Rwanda.

⁵⁹ According to Practical Action, RE4R I reduced stove prices by up to 56%.

⁶⁰ World Food Programme (WFP) (2022). [WFP Rwanda Country Brief, August 2022 - Rwanda | ReliefWeb](#). Kigali, Rwanda.

⁶¹ Practical Action, 2022a.

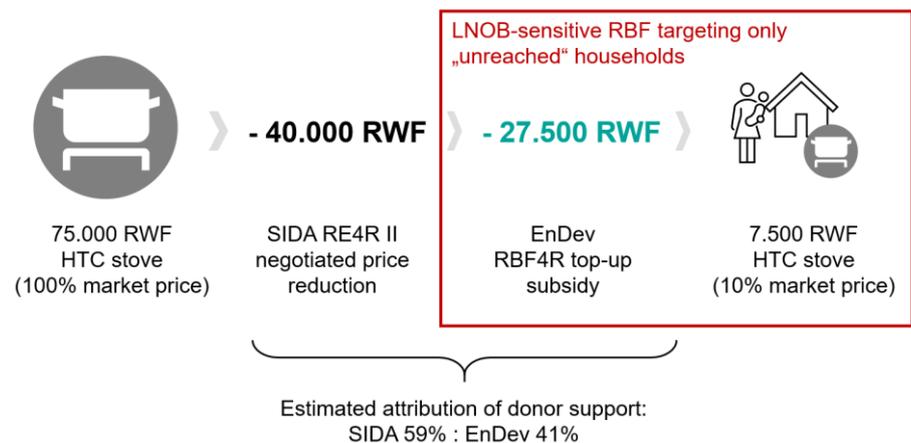
⁶² E.g. children at risk, persons with disability, victims of sex and gender-based violence or a single parent. UNHCR (2022). UNHCR Rwanda, Monthly Population Statistics, as of 31 December 2022.

⁶³ Practical Action under RE4R I and II is supporting selected stoves companies through direct investments in e.g. pellet production facilities. In turn, the companies commit to engaging in the refugee setting and agree to a special, reduced price for these settings.

Modalities: At the core of this sub-component is the development and implementation of an LNOB-sensitive RBF scheme as a vehicle for a demand-side subsidy. EnDev will work closely with the RE4R II intervention by addressing the affordability gap of cook stoves supplied in the camp through RE4R. The selected groups have shown not to be reached through previous market-based approaches in refugee settings. Therefore it is expected that the price reduction negotiated between RE4R II and stove producers will not be sufficient for the highly vulnerable, and even for many of the vulnerable.

- The subsidy by RE4R II is expected to be between 55-60% of the market price. The additional RBF4R will closely align with national subsidy programmes: Under the World Bank EAQIP programme,⁶⁴ the poorest HHs (Ubudehe 1) receive a 90% subsidy
- The core target group is composed of the highly vulnerable refugee HHs assisted by Humanity and Inclusion (5266 HHs)
- Additional groups (with up to 1400 additional stoves) will be targeted during the implementation period: These will be defined based on an analysis of who is not being reached through the existing market.

Practical Action will implement and monitor the RBF in close collaboration with EnDev. While the modalities of the RBF will be developed in consultation with MINEMA, UNHCR, Practical Action and SIDA, an exemplary set-up is depicted below:



Relevant Tier 3 & 4 technologies in Rwanda

The market in Rwanda has a limited availability to tier 3 and tier 4 stoves, with a price range between 30,000 – 70,000 RWF (25-60 EUR) for a tier 3 and 70,000 - 105,000 RWF (70-90 EUR) for a tier 4 stove, using biomass fuels such as fuelwood or pellets. RE4R II has not concluded their selection of suppliers yet, however, based on

⁶⁴ The World Bank EAQIP programme subsidizes the cost of stoves at different levels depending on the Government of Rwanda's socio-economic scheme called Ubudehe. Ubudehe 1 are the most vulnerable households, followed by Ubudehe 2 and 3. [Development Projects : Rwanda - Energy Access and Quality Improvement Project - P172594 \(worldbank.org\)](https://www.worldbank.org/en/projects-operations/development-projects/rwanda-energy-access-and-quality-improvement-project-p172594)

the previous phase, RE4R I negotiated a price reduction between 55%-60% compared to the original market price.

Fuelwood stoves are not eligible in the refugee setting due to the ban on firewood. Given the nascent market situation and the low ability to pay, the project will not support Ethanol or electric cooking.

The RBF is supported by the following activities:

Market development:

- Participatory consultation with (female) beneficiaries, partners and suppliers to address barriers specific to the HTC market system for vulnerable HHs
- Provision of technical assistance for RE4R II selected tier 3 and 4 stove suppliers to integrate vulnerable HHs into their business models

HTC awareness raising and behavioural change:

- Awareness raising and education events for end-users, including community engagement and focus group discussions for targeted HHs, considering the mobility and time availability of the beneficiaries
- Supplier-led market activation activities, including roadshows, demonstrations, and door-to-door marketing

Enabling environment and policy advocacy:

- Advocacy for market-based approaches in the Energy and Environment Technical Committee led by MINEMA, integrating lessons from the RBF4R
- Engagement with development partners, such as the World Bank, together with the EnDev ReCIC project and RE4R II to explore pathways for the inclusion of refugees in national energy subsidy programmes as an exit strategy

Gender mainstreaming

Access to clean cooking is a priority to increase energy access, as it provides health benefits and reduces the workload for women and girls.⁶⁵ Saving time on fuel-wood collection and cooking allows refugees to engage in other domestic, economic and leisure activities. Moreover, it reduces the risk of sex and gender-based violence, which is often linked to firewood collection.

The RBF4R approach is considered as gender sensitive, with an ambition to be transformative. It enables the highly vulnerable among a vulnerable group to participate in a market and improve their energy access. The informed participation of e.g. vulnerable women, people with disabilities, and children at risk will be ensured from the point of the selection of suppliers to the joint development of awareness raising measures to the RBF verification. For the latter, the project explores options to work with refugee women as verification agents.

⁶⁵ Gender analysis for Energising Development Rwanda, 2021.

<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to implement or complement activities, leverage additional impacts, financing (incl. co-financing), etc., and / or support interconnections with other sectors.</p>	<p>Endev will collaborate closely with the relevant stakeholders in the humanitarian sector, including UNHCR with a specific focus on refugees' protection matters, and MINEMA, which is overseeing interventions in the humanitarian space, including the implementation of the CRRF pledges.</p> <p>Complementary initiatives and opportunities to leverage:</p> <ul style="list-style-type: none"> • Practical Action, as the implementing partner of this component and RE4R II • SIDA as the funding entity of RE4R II and only other energy access donor in the refugee space. EnDev will ensure close alignment and collaboration throughout the project implementation • EAQIP, World Bank funded initiative with RBF stove subsidies targeting the Ubudehe categories 1-3, implemented country-wide, but not in refugee camps • ReCIC, EU co-financed EnDev component: collaboration on technical level
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <p>Financial – is there a viable business case in the absence of the project, or sustained alternative funding?</p> <p>Institutional – is there an enabling environment with supportive institutions?</p> <p>Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?</p> <p>Technological – is technology and know-how for replacement and repair available?</p> <p>Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?</p>	<p>Financial: Other initiatives can build on the mechanism developed for upscaling or integration into a country-wide subsidy scheme. To facilitate the inclusion of refugees in national subsidy schemes, the RBF4R scheme shall align where possible with existing GoR subsidies.</p> <p>Institutional: Ownership from camp to country level will be achieved through the inclusion and participation of all partners. Inclusion in national subsidy programmes will be advocated for with relevant stakeholders.</p> <p>Ecological: This component contributes to the NDC as well as CRRF by reducing the reliance on firewood for cooking and thereby, reducing depletion of natural resources in the camps' surroundings.</p> <p>Technological: HTC stoves will be identified that meet national quality standards and the different needs of the refugees.</p> <p>Social: Building on the implementing partner's participatory approach,⁶⁶ interventions are demand-driven and aim to increase market-participation and customer-choice.</p>

⁶⁶ [Core principles of PMSD - Practical Action](#)

<p>What is the exit strategy and/or ideas for follow-up financing?</p>																											
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>5,931</td> <td>5,931</td> <td>5,931</td> <td>246,106</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>Support to the Rwandan Standards Board (through EnDev ReCIC – EU-co-funded)</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Indicator 1: Participation in awareness creation</td> <td>10,000</td> <td>100%</td> <td>100%</td> <td>10,000</td> </tr> </tbody> </table> <p>Narrative</p> <p>The RBF4R component is designed in the spirit of efficient donor coordination. EnDev will meet the need for an additional demand side subsidy through the provision of an RBF to further lower the reduced prices of the RE4R II intervention, reaching vulnerable refugee HH that could otherwise not be reached. Based on data from RE4R I and initial affordability assumptions, the attribution for EnDev is estimated at around 40% (see pictogram above).</p> <p>Through the EnDev ReCIC project, EnDev Rwanda contributes to the output indicator 3.1. EnDev Rwanda has previously already contributed through the support to developing an Energy Compact with the GoR.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	5,931	5,931	5,931	246,106	Outputs	Applicable	Details	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Support to the Rwandan Standards Board (through EnDev ReCIC – EU-co-funded)	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	Indicator 1: Participation in awareness creation	10,000	100%	100%	10,000
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impacts described in the ToC.	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 31,4 % of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 29,9 %</p> <p><input checked="" type="checkbox"/> LNOB+: 30,8 %</p> <p>This activity is focusing on HTC and LNOB+ at the same time. However, the above budget share includes also sub-component 3.3, which is only LNOB+ (without HTC), as well as budget for the HTC MTF study, which is not specifically targeting LNOB+.</p>

Electricity sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the electricity sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to 	<p>Rwanda’s energy landscape witnessed rapid changes over the period 2014-2023. Electricity access increased from 19% in 2014 to 77% in February 2023 (51.1% on-grid and 25.8% off-grid). The GoR has made a number of strategic and policy reforms in the energy sector to achieve universal access to electricity by 2024 by providing access to 100% of households, through off-grid and on-grid connections.</p> <p>In August 2021 MININFRA adjusted their off-grid electricity access targets from 48% to 10.1%, reducing mini-grid sites from approximately 2000 sites to 181. Given the high electrification rate and the reduction in off-grid targets, a strategic shift to higher tier access through PUE will continue to be promoted by EnDev in Rwanda, following the implementation of two recent PUE interventions.⁶⁷</p> <p>In Rwanda, PUE is closely linked to agriculture: Agriculture employs more than 60% of the population⁶⁸ and contributes to 26% of the gross domestic product (GDP). As the majority of smallholder farmers depends on rainwater for irrigation, the GoR highlights irrigation as a means to increase agricultural productivity and improve resilience by targeting 102,284 ha of land by 2024 (from a baseline of 48,508 ha, i.e. doubling the area of irrigated land). Roughly half of Rwanda’s arable land (1,151,000 ha), i.e. 589,711ha has potential for irrigation.⁶⁹</p> <p>Given this high potential, the RAB and the World Bank have already developed subsidies between 50-75% on solar water pumps (SWP) under the Small-Scale Irrigation Technologies program (SSIT) and Sustainable</p>
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⁶⁷ EnDev collaborated with AVSI to support the up-take of PUE at existing mini-grid sites and piloted through RVO innovation fund the first Cooling-As-A-Service model in Rwanda.

⁶⁸ World Bank, Data, <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=RW>

⁶⁹ MINAGRI (2018). [Strategic Plan for Agriculture Transformation: Planning for the Future](#). Kigali, Rwanda.

<p>household access)</p> <ul style="list-style-type: none"> • Economic development / productive use • Social Development • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Agricultural Intensification and Food Security project (SAIP), respectively. Despite this significant incentive to stimulate the sector, these instruments are not performing due to bureaucratic challenges toward suppliers and the affordability barrier by the end-user. Therefore, the market for SWPs remains nascent, with even the market leaders only selling around 20 SWPs a year. None or a negligible amount of SWPs have been sold via instalment-based payments due to the perceived risk and value of equipment.</p> <p>The key market barrier is a lack of suitable business models which can address the affordability of SPIS for smallholder farmers. Despite the existing subsidies, the CAPEX of SWPs remains too high for smallholder farmers, while suppliers are reluctant to provide consumer payment schemes. An additional challenge for solar irrigation in Rwanda is that notwithstanding the high operational costs, farmers often opt for diesel water pumps as they receive a 50% subsidy under SSIT and are more than 10 times cheaper than solar irrigation systems (considering exclusively CAPEX).</p>
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Electricity sector: Sub-Component 3.1 – Off-grid access and PSP Hydro

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>Strategic position: EnDev has been supporting the market development of both grid and off-grid connected projects since 2009 and has been a catalyst for market development in the electricity sector. Simultaneously, EnDev has supported the GoR in building up its capacities to accelerate on- and off-grid electrification. As a result, the GoR has reached a 77% access rate (as of February 2023).</p> <p>Endev’s strategic positioning is shifting in the light of high electrification rates, the governments’ nation-wide solar home systems programme, and the outlook for mini-grids in Rwanda. Considering these developments, EnDev will continue to coordinate closely with the GoR in light of its upcoming new development phase by the end of 2024, which will define a new Energy Sector Strategic Plan up until 2032 (with new on-grid and off-grid targets).</p> <p>Objective: The objective of the two components is to promote and accelerate private mini-grid and on-grid micro-hydro development in Rwanda while contributing to the continued improvement of the enabling environment.</p> <p>Endev’s comparative advantage: EnDev’s implementation experience has provided valuable input for partners’ policies and programmes, some of which consisted of leveraging EnDev pilots, including the ProPoor RBF⁷⁰.</p> <p><i>PSP Hydro</i> EnDev assisted in the development of the first three privately-owned hydro power plants in Rwanda through grants and technical assistance, as well as the development of first power purchase agreement. EnDev has also raised</p>
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⁷⁰ The project was upscaled by the World Bank and GoR to a 30 Mio USD programme.

<p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>awareness regarding the benefits of privately-owned projects and helped to set up the necessary enabling environment, which resulted in the GoR leasing a significant portion of small hydropower sites to private developers. As such, EnDev was a crucial catalyst for the market and has brought the market to maturity.</p> <p>To date the project has supported three hydro power plants with 2,874 kW have been commissioned with roughly 49,000 people benefiting from access to electricity.</p> <p><i>Mini-grid RBF</i> Despite the progress in electrification and the development of an increasingly conducive enabling environment for the mini-grid sector, the market remains nascent with significant challenges to developers, primarily related to the ongoing changes to the National Electrification Plan, political will, financing and project viability.</p> <p>The EnDev Village-Grid RBF, which ran from 2014-2020, provided access to electricity to over 10,000 people, 350 MSME's and 20 social institutions, creating over 100 jobs. Overall, the VG RBF helped raise the profile of the mini-grid sector, not only through its provision of financing, which enabled some of the first private mini-grids in Rwanda to be built, but also through its involvement in the sector as a prominent stakeholder.</p> <p>Approach: The component will continue implementation of the existing mini-grid RBF and PSP hydro component.</p> <p><i>PSP Hydro</i> The PSP hydro aims to construct the remaining four hydro power plants during this programming period. Given the current stage of the three remaining projects, PSP Hydro will be supporting the construction and monitoring the operation of the power plants while advocating with public institutions, since the private investors in the sector still lack a strong representation.</p> <p><i>Mini-grid RBF</i> In January 2022, EnDev Rwanda launched a new RBF model. The intervention will provide RBF incentive to up to 2 mini-grid developers supplying electricity to rural areas that will not be connected to the grid according to the NEP. The intervention encompasses the collaboration with BRD, which aims to facilitate access to pre-commissioning financing and bridge the gap until incentives are paid out. EnDev Rwanda will also continue to advise and work closely with government and donors, to further strengthen the enabling environment and ongoing issues (e.g. changes to NEP demarcations, uncertainty regarding grid-arrival etc.)</p>
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<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Implementer base: EnDev has built long-standing relationships with a range of government and non-governmental stakeholders over the past years including the responsible line ministry, MININFRA, the energy utility, REG/EDCL, and the Rwanda Utility Regulatory Authority (RURA).</p> <p>Key partners include:</p> <ul style="list-style-type: none"> ▪ The utility, REG, and its two subsidiaries, EUCL and EDCL, will remain key partner for monitoring commissioning and ensuring the long-term sustainability of the sector. ▪ BRD, who is administering the World Bank funded <i>Renewable Energy Fund</i> (REF) and the Swedish International Development Cooperation Agency's (SIDA) guarantee fund. The REF provides direct financing to mini-grid developers, complementing the RBF by providing pre-commissioning financing. ▪ RDB, who leads contract negotiations with developers on behalf of the GoR, will remain a key partner to ensure PPA's (power purchase agreements) are negotiated and signed.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement 	<p>Financial: Both components focus on the financial viability of the infrastructure and support in access to finance and technical assistance.</p> <p>Institutional: The institutional environment for both on-grid hydro project and mini-grids has improved significantly. Nevertheless, political risks remain, which requires close coordination with the GoR.</p> <p>Ecological: Under PSP hydro, EnDev's impact assessment showed minimal ecological impact while the ecological sustainability of solar mini-grids relies on the proper disposal of components, particularly batteries. Overall, the interventions will positively contribute to emissions reductions.</p> <p>Technological: Most technology is imported with replacement parts available from suppliers, while most developers have the required know-how.</p> <p>Social: Ensuring social sustainability is largely outside of EnDev's control under the mini-grid and PSP hydro component. Electricity tariffs are regulated by RURA.</p>

<p>and repair available?</p> <ul style="list-style-type: none"> • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>																																	
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⁷¹ The number is based on the adjusted number of social institutions connected through mini-grids.

⁷² The number is based on the adjusted number of productive uses connected through mini-grids.

<p>programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p> <p>2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>These activities are carried over from previous programming periods.</p>

Electricity sector: Sub-Component 3.2 – Off-grid PUE in the Agricultural Value Chain

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes

Based on the developments as outlined in 3.1, EnDev will position itself strategically in the area of productive use of energy. Within the upcoming programming period, the focus will be on solar-powered irrigation as well as solar cooling and drying in the agricultural value chain. This will build on previous interventions implemented on productive use of energy. In 2021-2022, EnDev Rwanda was working with AVSI in supporting 58 entrepreneurs in acquiring PUE equipment as well as developing relevant business skills.

Objective: Support the development and implementation of suitable business models which enable smallholder farmers to increase their productivity and income through the productive use of energy.

EnDev's comparative advantage: As shown in sub-component 3.1, EnDev has substantial experience in using RBFs as an instrument to foster the market development for energy products in Rwanda. Previous interventions have shown that such interventions have most success when working directly with the private sector. In addition, addressing the high market development potential of solar-powered postharvest technologies,⁷³ EnDev launched the first solar powered Cooling as a Service (CaaS) pilot in Rwanda in 2022 and will integrate related lessons in this new sub-component.

Approach & activities: At the core of the sub-component will be an RBF scheme, which incentivises SPIS suppliers to develop and test business models encompassing instalment-based payments (PAYGO, harvest-based payments, etc.), to assist smallholder farmers' in overcoming the affordability challenge of SWPs and to make SWPs more competitive to diesel water pumps. The instalment-based / PAYGO schemes will be set-up through the suppliers.⁷⁴ Companies are eligible to the RBF independent of whether they participate in the SSIT and SAIP subsidy schemes. Yet, it is likely that most companies will aim to benefit from the SSIT/SAIP subsidy and the RBF simultaneously.

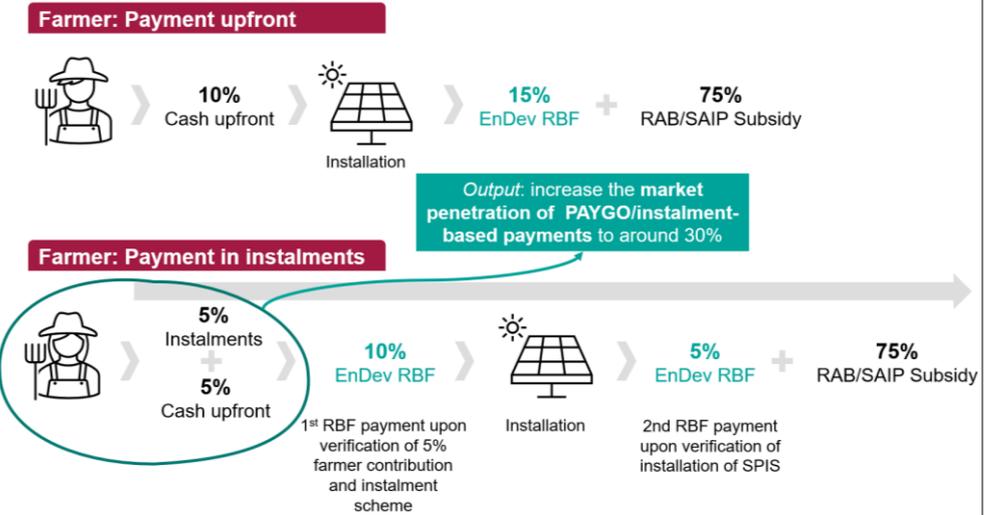
⁷³Puri, Manas et al. (2021) [Renewable energy for agrifood chains in Rwanda](#). Food and Agriculture Organisation of the United Nations (FAO), Rome.

⁷⁴ The PAYGO models EnDev anticipates supporting in the sub-component are lease-to-own, "consumer finance retail" models, which involve customers paying for the solar water pump in small instalments over a period typically of 24 months. On PAYGo, instalment payments are usually made via mobile credit, by sending a text message. However, there may be instances of non-digitally enabled systems in which case payments would be collected by suppliers in cash. We anticipate that non-digital payments will be minimal considering the penetration of mobile money in Rwanda; however, this sub-component includes both in its design.

Digitally-enabled systems can also feature a remote monitoring system that can be activated via mobile network connection. This program will include systems enabled with remote PAYGO functionality and those without remote monitoring systems as we expect that a number of current SAIP/RAB suppliers have not advanced to this level.

LNOB+ (incl. the target group).

The modalities of the RBF are depicted below.⁷⁵ The example assumes that the supplier of the SPIS is also part of the SSIT/SAIP subsidy.



Mercy Corps/Energy4Impact will, through a grant agreement, implement the following activities together with EnDev and administer and monitor the RBF system, including the verification of system installations and farmer payments.

Activities are targeting the private sector, farmers as well as government and financial institutions.

Private sector

- Support companies in developing business / financial models for instalment-based/PAYGo business models, including monitoring of payment rates to increase market knowledge and supplier confidence
- Support companies to deploy their SWP stocks in Rwanda through linkages to pilot sites, demo farms, and co-operatives and evaluate the most viable target market
- TA support to SWP companies to access SAIP and RAB subsidy schemes, if required

Farmers

- General agronomic advice/training, including on irrigation practices, solar irrigation, post-harvest handling and storage, as well as market information for various growing seasons
- Awareness raising activities, such as education days on district level, farmer mobilization meetings on-site and radio shows, with a particular focus to also mobilize female farmers
- Farmer surveys to inform the evidence base for PAYGo uptake including viable schedules of instalments

Government and financial institutions

⁷⁵ The RBF model has been designed to incentivize suppliers to extend instalment-based payments by offering access to a 1st RBF payment pre-installation of the system. This is paid once the farmer's deposit has been confirmed and with proof of an agreed-upon instalment schedule. The aim is to help improve liquidity for suppliers and free up cash flow for them to continue to scale and service other farmers.

	<ul style="list-style-type: none"> • Engagement with RAB to shape the enabling environment in a manner which allows more flexible business models to participate in government and World Bank subsidy schemes • Facilitate further access to financing, building of capacities in financial institutions, provision of advisory support to develop dedicated loan products for SPIS and facilitation of linkages with potential farmer clients • Advocacy with MINAGRI, MININFRA and MoE and their subsidiaries on fostering the up-take of SPI through a market approach <p>Supporting intervention on solar cooling and drying In exchange with partners, it was observed that farmers often struggle to translate their productivity gains through SPIS into a corresponding increase in revenue. This appears to be due to their low bargaining power. Addressing this, EnDev will support four pilots on post-harvest cooling and drying technologies, which allow farmers to store their produce and negotiate a better price, while at the same time reducing post-harvest losses.</p> <p>Gender mainstreaming According to a 2017 report by the Gender Monitoring Office of the GoR, almost 80% of agricultural workers are women, but have considerably less access to resources- such as land, production inputs and finances – and less access to markets than men.⁷⁶ Most female farmers are therefore merely subsistence farmers or farm workers. The sub-component addresses these and related matters through measures including but not limited to ensuring that credit/PAYGO scorecards are designed to overcome traditional barriers to lending to women, and by aligning meetings and trainings with women farmers` schedules</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>In addition to its political partner, MININFRA and EDCL, EnDev will collaborate closely with the relevant stakeholders in the agricultural sector, in particular MINAGRI and RAB, who is implementing both SSIT and SAIP (the latter on behalf of the World Bank), as well as local stakeholders such as micro-finance institutions.</p> <p>Complementary initiatives and opportunities to leverage:</p> <ul style="list-style-type: none"> • E4I/Mercy Corps will support the implementation of this component. E4I spearheaded sector development through the Solar Irrigation in Rwanda project (2018-2020) • The Interconnected Development Pathways Project (2021-2024), funded by the Rockefeller Foundation, is collecting on-farm data on the benefits of SPI • GOGLA/EDP via GIZ implemented Water & Energy for Food (WE4F): to increase enabling environment of PUE technologies, including Rwanda. To begin work on a market assessment
<p>Please describe how the results achieved can be anchored in a self-supporting and</p>	<p>Financial: The creation of an instalment/PAYGO based payments market will in the long-term reduce the need for additional top-up subsidies and support a sustainable market development.</p>

⁷⁶ Gender Monitoring Office (2017). [Gender Profile in Agriculture](#). Kigali, Rwanda.

<p>sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Institutional: Collaboration with RAB and MINAGRI will ensure ownership and support to strengthen the enabling environment, allowing companies to implement similar business models in the long-term.</p> <p>Ecological: Warranty and end-of-life solutions will be incorporated in this component, with relevant training for partners</p> <p>Technological: Promoted technologies will meet high quality standards, promoting companies with a long-term outlook that can provide repair and maintenance.</p> <p>Social: Business models and repayment schemes will consider the socio-economic status of customers, minimizing the risk of over-indebtedness.</p>
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<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please</p>	<p>Electricity sector: Component 3.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to electricity</td> <td>218⁷⁷</td> <td>0</td> <td>432</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.2 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td><input checked="" type="checkbox"/></td> <td>Development of 2 business plan for consumer payment schemes on SPIS</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	PU: Access to electricity	218 ⁷⁷	0	432	Outputs	Applicable	Details	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Development of 2 business plan for consumer payment schemes on SPIS
Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025												
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Outputs	Applicable	Details													
Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	Development of 2 business plan for consumer payment schemes on SPIS													

⁷⁷ Of which 155 through access to SWPs, and 50 through the solar cooling and drying intervention.

fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

For each indicator, please provide

1. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and
2. the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.

Electricity sector: Component 3.2 – Table 3

Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025
Indicator 1: Awareness raising outreach to farmers	1600	0	1600
Indicator 2: Farmers reducing post-harvest losses	100	0	100
Indicator 3: Jobs for women created through PUE ⁷⁸	20	0	20

The component will be implemented in districts where either SSTI (government funded) or SAIP (World Bank funded) are active. SAIP has shown to have a higher capacity to attract SWP sales in their districts than SSTI due to government budget constraints and swifter repayments. Based on the different funding lines and including EnDev’s mobilization efforts, there is an estimated attribution of 65%.

With the development of business models for instalment-based payments for PUE equipment, EnDev Rwanda is also contributing to the Output Indicator 2.2.

Approx.30% of total budget

Approx. contribution to thematic budget for:

LNOB+: 0%

⁷⁸ Including the results of sub-component 3.3

Please also highlight whether this component contributes to the thematic budget share for LNOB+.

Electricity sector: Sub-Component 3.3 –PUE for refugee livelihoods

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).

This sub-component is a complementary activity for the RBF4R sub-component. Therefore, a brief summary is provided below:

Context: According to the preliminary baseline data collected by Practical Action, access to electricity ranges between almost 60% (Kiziba and Mugombwa) and 88% in Nyabiheke. At the same time, 36% of refugee HH heads have no income due to unemployment and therefore rely on assistance, whereas 16% of refugee and host community members are generating income from their own businesses or are self-employed.

Livelihood activities are considered a crucial aspect of any intervention targeting displacement settings. As part of the graduation policy of the government of Rwanda, MINEMA strongly emphasizes the need for improved livelihood opportunities in the refugee camps and sees productive use of energy as a promising pathway. EnDev is complementing the activities under the component on RBF for refugees with targeted productive use of energy support for 50 female refugee entrepreneurs through the adoption and use of stand-alone solar systems, while creating jobs and stimulating micro-enterprise development.

Objective: Increase the market penetration of solar-powered appliances, or solar kits to power MSME appliances, among refugee entrepreneurs to increase their revenues and support livelihood development.

Approach & activities: EnDev is building on its previous experience on supporting entrepreneurs with PUE appliances under the mini-grid project, which highlighted a great need and appetite for business development support, coaching and grants to cover the portion of the costs of the appliances. Focusing on the off-grid areas in the camps⁷⁹ and working together with Practical Action, the component will provide financial support to selected micro- entrepreneurs, through the provision of financial incentives to access solar systems and PUE equipment, as well as business development support.

The intervention will fully focus on female entrepreneurs in businesses such as tailoring (sewing machines), hair saloons (e.g. hair dryers, tongs and clippers) and hospitality industry (e.g. fridges, TV screens).

⁷⁹ Only (part of) the administrative and communal infrastructure in camps is grid-connected. According to UNHCR, household electrification has only been discussed for Mahama camp, without further follow-up from the government.

	<p>For small restaurants, the project will explore the option to pilot together with the female entrepreneurs' electric pressure cookers. This might be a particularly viable business model at the refugee camp business centres, which are grid connected.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev will work closely with the relevant stakeholders in the humanitarian sector, including UNHCR and MINEMA.</p> <p>Complementary initiatives and opportunities to leverage:</p> <ul style="list-style-type: none"> • Practical Action, as the implementing partner of this component and RE4R II, • SIDA as the funding entity of RE4R II and only other energy access donor in the refugee space: Close alignment and collaboration throughout the project implementation • Economic Inclusion of Refugees and Host Communities in Rwanda (EcoRef), a BMZ and EU-funded project implemented by GIZ Rwanda, has experience in providing business development support to refugee and host community entrepreneurs, currently implemented until the end of 2023. The component will seek synergies where possible to provide targeted support and energy access for micro- and small entrepreneurs.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that 	<p>Financial: Support to entrepreneurs aims to develop a financially viable business model, and provide linkages with grassroots organizations and longer-term financing interventions/BDS support</p> <p>Institutional: Ownership from camp to country level will be achieved through the inclusion and participation of all government partners throughout the project, including MINEMA and UNHCR stakeholders.</p> <p>Ecological: Warranties and repair will be incorporated into the collaboration with suppliers, considering also end-of-life management.</p> <p>Technological: Promoted technologies will meet national quality standards and companies will ensure sufficient capacities for repair and maintenance.</p> <p>Social: Building on the implementing partner's participatory approach,⁸⁰ interventions are demand-driven to increase market-participation and customer-choice. Where possible, the project will ensure to include host communities in their interventions.</p>

⁸⁰ [Core principles of PMSD - Practical Action](#)

<p>(unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>									
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Electricity sector: Component 3.3 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to electricity</td> <td>42</td> <td>42</td> <td>432</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.3 – Table 2 N/A</p> <p>Electricity sector: Component 3.3 – Table 3 N/A</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	PU: Access to electricity	42	42	432
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<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+</p>	<p>The budget of this sub-component is part of the RBF4R component.</p>
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Safeguards and risks	
<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Excessive use of water in irrigation systems depletes scarce water resources. <u>Safeguard's measure:</u> Emphasis on TA on good agricultural practices as an accompanying measure to the promotion of solar-powered irrigation systems.</p> <p>Potential leakage of refrigerant from cold storage. <u>Safeguard's measure:</u> Requirement of technology to use non-toxic cooling agents, e.g. R290.</p> <p>E-waste from solar-powered technology presents an environmental hazard. <u>Safeguard's measure:</u> Collaboration with suppliers requires after-sales services, including maintenance and repair, and will also emphasize proper end-of-life management of systems.</p> <p>Beneficiaries, including smallholder farmers and refugees, risk over-indebtedness through investing into the promoted technology. <u>Safeguard's measure:</u> EnDev and implementing partners will design mechanisms seeking to minimize the risk of over-indebtedness, e.g. through linking instalment payments to harvest seasons.</p> <p>Interventions in refugee camps may trigger or aggravate conflicts with the host community. <u>Safeguard's measure:</u> EnDev will work closely with camp and host community stakeholders, incl. UNHCR, MINEMA and the district governments, to mitigate and mediate conflicts, if necessary.</p>

Budget

Please indicate your requested core budget using the table "Budget overview".

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table "Final budget for project period incl. co-financing".

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	3,104,415.00	
2	European Union (including BMZ contribution)	5,709,000.00 (1/11/2020 - 31/10/2025)	Reducing Climate Impact of Cooking in Rwanda through improved cooking systems" (ReCIC)
	Total estimated budget	8,813,415.00	

18. Senegal

Acronyms

ABC	Advanced Biomass Cookstove
ACCESS	Project "Access to financing for SMEs" (GIZ)
AFD	Agence Française de Développement <i>French Development Agency</i>
ANSD	Agence National de la Statistique et de la Démographie (Senegal) <i>National Agency for Statistic and Demography (of Senegal)</i>
ASER	Agence Sénégalaise d'Électrification Rurale <i>Senegalese Rural Electrification Agency</i>
BAD	Banque Africaine de Développement <i>African Development Bank</i>
BDS	Business Development Services
BLEEN	Biogas-LPG-Electricity-Ethanol-Natural gas
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung Federal Ministry for Economic Cooperation and Development
BOAD	Banque Ouest Africaine de Développement <i>West African Development Bank</i>
CERER	Centre d'Études et de Recherches sur les Énergies Renouvelables <i>Center for Studies and Research on Renewable Energies</i>
CNRA	Centre National de Recherche Agronomique <i>National Center for Agricultural Research</i>
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EnDev	Energising Development
ESMP	Environmental and Social Management Plan
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FTT	FAO-Thiaroye fish processing technique
GBE	Grüne Bürgerenergie <i>Green People's Energy</i>
GCF	Green Climate Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GoSN	Government of Senegal
HTC	Higher Tier Cooking
ICS	Improved Cookstove
IGA	Income Generating Activity
IRENA	International Renewable Energy Agency
ISCOS	Istituto Sindacale per la Cooperazione allo Sviluppo <i>Trade Unions Institute for Development Cooperation</i>
IsDB	Islamic Development Bank
ISO	International Organization for Standardization
ITAC	International Technical Advisory Committee
JET	Just Energy Transition
KfW	Kreditanstalt für Wiederaufbau <i>German investment and development bank</i>
LNOB	Leave no one behind
LPG	Liquified Petroleum Gas
(M)FI	(Micro) Finance Institution
MoU	Memorandum of Understanding

MTF-P	Multi-Tier Framework – Project level (EnDev methodology)
NDA	National Designated Authority
NDC	Nationally Determined Contributions
NGO	Non-governmental Organization
PED	Programme Energies Durables (GIZ) <i>Sustainable Energy Programme</i>
PESEREE	Programme d'Enseignement Supérieur pour les Energies Renouvelables et l'Efficacité Energétique (GIZ) <i>Higher Education Program for Renewable Energies and Energy Efficiency</i>
PM	Particulate Matter
ProAccess	Promotion of 'Access to electricity' (EU Co-financing of EnDev SN)
PUE	Productive Use of Energy
PV	Photovoltaic
RBF	Results-based Financing
RE	Renewable Energy
RWI	Leipniz Institut für Wirtschaftsforschung <i>Leibniz Institute for Economic Research</i>
SDG	Sustainable Development Goal
SENELEC	National electricity company of Senegal
SHS	Solar Home System
SI	Social Institution
SN	Senegal
ToC	Theory of Change
UNDP	United Nations Development Program
UNHCR	The UN Refugee Agency
WB	World Bank

Summary and key data

<p>Promoted technologies</p>		<p>Improved cookstoves, eCooking, grid extension, mini-grids, SHS</p>
<p>Type of Energy</p>		<p>Biomass, solar</p>
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev SN is the incubator of RE-Innovations for the off-grid sector in Senegal since 2006. With approx. 20 million EURO EnDev cumulative core funding, approx. 40 Mio EUR were raised in co- and parallel funding for fast scaling. The EnDev-lead cluster of energy access programs is assisting the GoSN to fulfil policy targets like ‘NDCs’ and ‘universal access to electricity’.</p> <p>The main contribution of EnDev to the NDC targets was the development of the ICS market between 2006-2020. This work is now continued within the EnDev/GCF project (and a share of results is attributed to EnDev). Higher Tier cooking in Senegal is currently only available in terms of LPG, mainly as a breakfast fuel. In 2023-25, the project will explore how to make HTC work for the population in Senegal, particularly for the LNOB. Therefor a lot of research and piloting will be done.</p> <p>Productive uses of biomass energy are not yet reflected in the NDCs. EnDev is systematically identifying large consumers of (non-sustainable) wood fuels in rural areas and develop more efficient solutions (e.g. fish smoking). The project will provide the NDA and the respective line ministries with the necessary data for a future consideration of these sub-sectors in the NDC revisions.</p> <p>EnDev SN realised that its current approaches for rural electrification are well promoting sustainable access, but at the expense that significant parts of the village population are left behind without access. To better align with the objectives of “universal access” and “LNOB+”, project revised its approaches for the electrification of rural households with the objective that in future, no household shall be left behind without at least a basic level of access to electricity after the implementation of the activities has been completed.</p> <p>In the context of the Green Peoples Energy Program (GBE), the EnDev-led cluster of Energy Access has developed innovative approaches for promoting sustainable access to energy in social institutions and small enterprises (e.g. access to finance, coaching etc.). EnDev will continue this work after the end of the current GBE funding.</p> <p>To be more gender transformative, marginalised female target groups are supported to become economic empowered in energy value chains (production of ceramic liners of ICS; women in fish smoking; women groups as retailers of picoPV systems) as part of the LNOB+ interventions.</p> <p>For 2023-25, there are several funding opportunities up-coming (e.g., GBE phase 2; P+; EnDev Health2), and the bilateral energy</p>	

	program PED received significant additional funding for the next phase. Therefore, the outlined planning in this document will be subject to changes as EnDev SN will adjust the planning flexible based on the realised opportunities.		
Programming period	01.07.2023 - 31.12.2025	Indicative core budget	EUR 3,000,000
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	8%	65%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	9,845 people	N/A	4,227	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Cooking / thermal energy for households	746,334 people	0	0	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for social infrastructure	70 SIs	0	16	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.
Electricity and/or cooking / thermal energy for productive use / income generation	455 MSMEs	0	275	e.g. eCooking, higher tiers, vulnerable groups, demand, etc.

Country context

<p>Please briefly outline</p> <ol style="list-style-type: none"> the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector) EnDev's overarching objectives in the markets being supported EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations) 	<p>GoSN is targeting universal access to electricity by 2025. By using domestic natural gas, 95% of the population shall be reached with the national grid. Off-grid solutions shall serve 5% of the rural population permanently. In 2022, 58.2% of rural households have access to electricity. GoSN is collaborating with many donors and programs financing the scaling of the national grid or of the off-grid sector (e.g. AFD, USA, WB, EU, KfW, BOAD, GCF, ECREEE, IRENA, BAD and IsDB). EnDev SN is the long-term partner of GoSN for developing innovations in the off-grid sector. It is supporting a broad range of technologies and is applying various approaches (e.g. RBF, BDS coaching, investment fund) for transforming the rural energy access sector for households, social institutions, and small enterprises.</p> <p>GoSN is discussing with its donors about the meaning of “Just Energy Transition” (JET). Should Senegal start exploiting its natural gas (and setting the country on a medium-term fossil development path)? Or would it be feasible to achieve its development targets with renewable options that could prepare Senegal for a net-zero future?</p> <p>In the cooking energy sector, the NDC target for efficient cookstoves is an annual market volume of 800.000 ICS in 2030. <u>EnDev/GCF</u> has</p>
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scaled this market already from 137.000 in 2020 to 418.000 ICS in 2022.

Higher Tier Cooking is not (yet) an important topic in Senegal. The only larger BLEEN-energy in Senegal is **LPG**. EnDev SN will systematically explore all different HTC options that are not yet addressed by other actors. There are no markets for efficient technologies for many productive uses of biomass energy. This sub-sector is also not reflected in the NDCs.

There is no external orientation on LNOB in Senegal: GoSN has no official definition (source: UNDP, SDG [Voluntary National Review Report 2022](#), p.78-79), [UNHCR](#) reports on their country website for Senegal only 11,799 refugees by December 2022, and the national [poverty mapping](#) from ANSD 2016 shows that the majority of the poor are living in the areas where EnDev and EnDev/GCF are working with particular focus. For supporting the objective of universal access to electricity, all key interventions of rural electrification of households have been adjusted to leave no one behind. Complementary, three key interventions have been elaborated for the economic empowerment of women in marginalised situations.

EnDev has a much smaller annual budget than many other actors of the energy sector in Senegal (e.g. only 1% compared to the Millennium Challenge Account). To provide significant support to sector transformation, EnDev Senegal depends on two strategies.

- a) Leverage of co-financing: with cumulatively EUR 20 million EnDev core funding, about EUR 40 million in co-and parallel funding were mobilised between 2006-2022. In 2023-25, EnDev core funding will be complemented by the following co-and parallel fundings:
- Green Peoples Energy (BMZ)
 - Climate friendly cooking (BMZ/GCF)
 - ProAccess (BMZ/EU)

All 4 programs are managed in the framework of a sub-cluster “Access to Energy” with a joint management and service structure.

- b) Mainstreaming: EnDev SN has been convincing stakeholders to use their own funds for the scaling of EnDev’s Renewable Energy innovations (examples: the first mini-grid design was replicated about 700 times by other donors, the new mini-grid design is already the template for 133 new mini-grids financed by the Islamic Development Bank).

ITAC advised EnDev SN that it needs to improve on results. This is true when focussing exclusively on activities financed by EnDev core funding. However, this is not a sign of poor performance, but the consequence of the incubator role of EnDev. For fast transformation, proven EnDev-innovations are scaled with complementary funding or by parallel programs. EnDev SN has large results in the sector, but too little attribution of these results to EnDev core funding.

The problems and barriers of “access to modern energy products and services in Senegal” differ strongly between the different sub-sectors (cooking, rural electrification), sub-sub sectors (e.g., rural electrification for households, rural electrification for productive uses and social infrastructure) and the subsequent technologies (e.g., grid,

	mini-grid, SHS, picoPV, etc.). Consequently, four separate ToCs have been developed for each of the subsectors, each of them structured in separate sections for each technology.
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Cooking sector	
<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Cooking energy for household (see 2.1)</p> <p>The national scaling of the ICS market is done by EnDev/GCF. Complementary, EnDev SN is piloting approaches on sustainable fuel production (see 2.1.1). Some women-(producer)-groups of ceramic liners for the ICS were left behind by EnDev/GCF. Under LNOB+, EnDev SN will support these groups with assets, training and BDS for efficient liner production and marketing. They will improve their income and assure their place in the value chain (see 2.1.2). EnDev SN learned from the MTF-P study that the kitchen concentration of PM is a limiting HTC-factor. EnDev SN will pilot ECooking (in mini-grids; see 2.1.3) and Ethanol stoves (see 2.1.4). Most HTC solutions are very expensive (e.g., electric ovens, LPG stoves, Biogas digesters, Advanced Biomass Cookstoves). EnDev Senegal will explore alternative options how to make HTC work for LNOB in collaboration with the EnDev/GCF program. adding forced air into firwood stoves and improving the ventilation in kitchens (see 2.1.5).</p> <p>Cooking Energy for productive uses (see 2.2)</p> <p>EnDev SN developed and tested a new fish smoking technology (named “nopalé” = relax) which has been ranked by the Ministry of Fisheries as “the best innovation of the sector in the last 20 years”. The field test demonstrated a strong performance (fuel use -80%) and high user acceptance. EnDev signed an MoU with ISCOS, the platform of EU-NGOs in Senegal, for the first scaling of nopalé. EnDev SN selected the cooperatives of female fish smokers as the target group for 2023-25. They have no access to the required investment capital for buying the technology. Under LNOB+, EnDev SN supplies a first lot of nopalé and trainings. With income from usage-fees, the cooperatives will maintain the nopalés and invest into further units. The focus on the cooperatives has been selected to ensure that they are not pushed out of the market by the stronger private sector actors. (see 2.2.1). The sector of the traditional bakery ovens is today where the fish smoking was 3 years ago. EnDev SN will start with technology development and the piloting (see 2.2.2). A complementary initiative is promoting solar bakeries with investment costs of over 100 TEUR per unit, which is prohibitive for small traditional bakeries.</p> <p>Support to the sector development (not included in ToC)</p> <p>(1) Provision of data on biomass use in PUE to the NDA, (2) capacity building of ministry staff (training, field visits), and (3) Implication of University (CERER) in the implementation (development and testing of innovations, training of producers, quality control and innovation sharing).</p>

Cooking sector: Component 2.1 – Cooking Energy - household

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).

The cooking component is structured in a first part on “conventional improved cooking activities” and a second part on the “new HTC options”.

Part I: Conventional improved cooking activities

2.1.1 Development of a national ICS market (EnDev/GCF)

The national scaling of the ICS market is implemented by [EnDev/GCF](#). The results are reported separately, but 2% annual increase of the baseline of 2020 is attributed to EnDev.

At the request of the Ministry in charge of the environment, EnDev SN is complementing the ICS work by piloting different options of sustainable biomass fuel production (e.g., [pigeon peas](#)). The question to be answered is: How many kg of “firewood” (woody stems) can be harvested per ha of intercropped pigeon peas per season?

About 6% of all ICS produced in Senegal are sold in neighbouring countries. If additional funding is acquired, EnDev SN will explore in a study if there is a potential and a benefit in supporting a regional expansion of the ICS market of Senegal after 2025.

2.1.2 Economic Empowerment of women groups in ceramic liner production for ICS (LNOB+)

EnDev SN is collaborating with six women groups that are engaged in the production of ceramic liners. Their small-scale production is very inefficient, and they fail to market their liners effectively. Each group requires a specific set of assets and trainings for increasing their productivity and marketing. They need BDS support for developing the business side of their activity. For supporting their connection to the national demand for liners, EnDev/GCF will include them in a virtual marketplace. Thus, they will participate in a fast-growing national ICS market.

Part II: New HTC options

Higher Tier Cooking is not (yet) a priority of the government of Senegal. The following tables provides an overview on the options available in Senegal and their consideration in this programming.

HTC Options		Consideration in the EnDev-programming 2023-25	
BLEEN	Biogas	No	Already done by the National Biogas Programme
	LPG	No	National market is already established (only breakfast-fuel)
	Electricity	Yes	See section 2.1.3
	Ethanol	Yes	See section 2.1.4
	Natural Gas	No	Fuel not available in Senegal
Advanced Biomass Cookstoves	No	Already implemented under EnDev/GCF program	
MTF-P level 3 or better	Yes	See section 2.1.5	

All selected HTC options are new to the sector in Senegal and also new to EnDev Senegal. The intention is to learn more about these solutions and to identify and prepare scalable solutions.

2.1.3 ECooking in mini-grids (HTC)

The national grid is not yet fit for large scale eCooking. But how about eCooking in mini-grids? This has not yet been tested in Senegal. The following questions shall be answered in a trial:

1) How do rural households adopt eCooking?

2) Does eCooking (in real stacking) reduce the PM-kitchen-concentration?

3) How do mini-grids have to be modified for integrating eCooking?

EnDev SN will test eCooking in two mini-grids 2.0 with 10 households each. First, the baseline use of the different cooking options will be assessed including PM measurements. The mini-grids will be modified for accommodating eCooking as required. The power-consumption of eCooking will be measured with smart meters. During the trial, the changes in the use of all stove/fuel systems will be analysed, including the impact on the PM-kitchen-concentration. Users will receive trainings on how to adjust their behaviour for appropriate use of eCooking equipment in their cultural context. Users will be asked about their perception of eCooking after some time of using it. Exchanges with other EnDev countries with eCooking trials will increase the understanding of eCooking.

Due to the restrictions on tariffs, it will not be feasible to introduce consumption-based payment of electricity for the trial. The economic assessment will therefore remain speculative.

The results of the trial will be shared with the stakeholders of the sector in a stove camp. Recommendations on eCooking in mini-grids will be shared with the GoSN. If found feasible, a mini-grid configuration "2.0 ec" will be developed.

2.1.4 Ethanol stoves (HTC)

A local ethanol company is producing 11 million litres of fuel-grade ethanol annually that they wanted to sell as fuel for cooking. But they failed to find a stove accepted by the users. The large households in Senegal require more powerful stoves than commonly sold. EnDev SN will support the company in the international and national search for an adequate stove technology. Based on the results of the research, recommendations will be formulated for the GoSN.

2.1.5 Make HTC work for LNOB (HTC)

75% of EnDev-survey-households are cooking in very enclosed (primary) cooking places with solid biomass stoves. This is promoting high PM-kitchen-concentrations. Unfortunately, most of these households are too poor and live too remote for having access to BLEEN solutions or ABC stoves for many years to come. But there are indications that HTC can be achieved by other improvements than by exchanging the stove. RWI determined in their research in Senegal, that there is a significant correlation between the ventilation of kitchens and the PM-kitchen-concentration. Aprovecho Institute in Oregon has shown that the use of the JET-flame ventilator in a firewood stove is drastically reducing PM emissions (-84% compared to the open fire in Senegal), and is reaching ISO tier level 3 in PM. It is also increasing the fuel use efficiency. EnDev SN will work with EnDev/GCF in developing a set of innovations for poor households

	<p>that can allow them to benefit from HTC services. This includes the development of a methodology for how make these innovations countable in the EndeDev monitoring system.</p> <p>To further reduce the kitchen concentration of PM, a user-centered design process will be applied. At the beginning, the needs and preferences of the women who are using closed kitchens are assessed. Options to maintain these advantages while improving the ventilation of the kitchen will be jointly explored with the women and evaluated. In collaboration with researchers and producers, the results will be further refined.</p> <p>The prototypes will be discussed with women groups for verification or modification. Finally, dissemination approaches will be developed. EndeDev will evaluate if the combination of all three measures will deliver a cooking system that is responding to the criteria of HTC, while at the same time being affordable for the users and accepted by the poor and vulnerable. In this process it will also be assessed how to develop a methodology for HTC that is not only looking at the stove, but also at the kitchen ventilation.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>In the field of cooking energy for households, the EndeDev work of developing the market of ICS between 2006 and 2020 is now continued and scaled by new funding of BMZ, co-financed by GCF (“EndeDev/GCF”). In this process, the project is collaborating closely with private companies (ICS producers) and finance institutions (access to finance).</p> <p>EndeDev SN is working with research centers and government agencies in the implementation of the field trials of pigeon peas (CNRA), eCooking (ASER, CERER), and kitchen ventilation (CERER). A national stove camp is used to share innovations in the sector.</p> <p>There are not many donors active in the field of cooking energy for households. A World Bank program is in preparation that includes amongst others also an ICS intervention. EndeDev has been consulted in the process for good coordination.</p> <p>For the JET-flame, EndeDev will collaborate with the Aprovecho Research Centre which is spearheading the development of the technology and the research for its application globally. For the scaling, EndeDev will collaborate also with the EndeDev/GCF project.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ol style="list-style-type: none"> a. Financial – is there a viable business case in the absence of the project, or sustained alternative funding? b. Institutional – is there an enabling environment with 	<p>2.1.1 Development of a national ICS market (EndeDev/GCF)</p> <ul style="list-style-type: none"> • Financial: The sustainability of the ICS market has been under a strong stress test during the covid19-lock-down of the country in 2020. Annual sales dropped from > 200.000 to 137.000 in 2020. However, the sales recovered fast in 2021 (267.000) and reached an all-time high in 2022 (418.000). This is a sign of a very strong sustainability of the market as all stoves are sold at sustainable price-points without subsidy. • Institutional: ICS producers are organized in associations at regional level. These are supported by the local chamber of crafts in the management of the needs of the producers. • Ecologically: Producers have been trained on Environmental and Social Management of their businesses. A triple grievance mechanism has been installed. However, the extraction of clay and

<p>supportive institutions?</p> <p>c. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?</p> <p>d. Technological – is technology and know-how for replacement and repair available?</p> <p>e. Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>sand for the production of liners is minimal compared to the construction sector in Senegal.</p> <ul style="list-style-type: none"> • Technologically: For the user of the ICS, the creation of a national market provides access for everyone everywhere for the replacement of their stove. • Social: The EnDev/GCF project phase has been built on extensive baseline studies that confirmed that the products are still on high demand in the new regions. With the implementation of 2.1.2, one of the challenges of the project will be resolved. <p>2.1.2 Women group ceramic liner production (LNOB+)</p> <ul style="list-style-type: none"> • <u>Financial</u>: Women groups produce for the rapidly growing ICS market. Investments and BDS training will improve their business case. • <u>Institutional</u>: women producer groups will be integrated into the ICS value chain (see under 2.1.1). • <u>Ecological</u>: The ESMP of the EnDev/GCF program will be applied. • <u>Technological</u>: National supplier of equipment. • <u>Social</u>: It is an LNOB+ intervention, hence addressing inequality. <p><u>Exit strategy</u>: integration of women groups in the virtual market for ceramic liners and direct linking with ICS producers of their region.</p> <p>2.1.3 ECooking in mini-grids (HTC)</p> <ul style="list-style-type: none"> • <u>Financial</u>: The economic viability of eCooking will not be assessed as the charging of consumption-based tariffs in mini-grids is not yet allowed. Therefore, we can only theoretically compare the cost of cooking with electricity with the baseline cooking. • <u>Institutional</u>: <u>It is still not decided if operator-based mini-grids will be attributed soon to the concession holder or not. This will have a decisive influence on the future of eCooking in mini-grids.</u> • <u>Ecological</u>: <u>eCooking based on solar-powered mini-grids is generally a very eco-friendly solution.</u> • <u>Technological</u>: The supply-chain for eCooking equipment is not yet established for Senegal. This would be feasible in case eCooking would become a general feature of mini-grids in SN. • <u>Social</u>: If eCooking would be found feasible and viable in mini-grids, it would allow to bring clean cooking to target groups which otherwise would be left behind for a very long time. <p>2.1.4 Ethanol stoves (HTC)</p> <ul style="list-style-type: none"> • <u>Financial</u>: The promotion of cooking with ethanol will not start within this project. The aim is to help a large ethanol company to identify a suitable ethanol stove for the continuation the trials they already implemented with their own funds. Hence, the solution will be from day 1 based on private sector funding. • <u>Institutional</u>: Cooking with ethanol is not yet a priority of the government. However, this could change in case of success. The creation of a favorable framework remains still to be done in that case. • <u>Ecological</u>: The production of fuel-grade ethanol is a by-product of the sugar industry of Senegal. However, the energy input needs to be assessed in the ecological evaluation.
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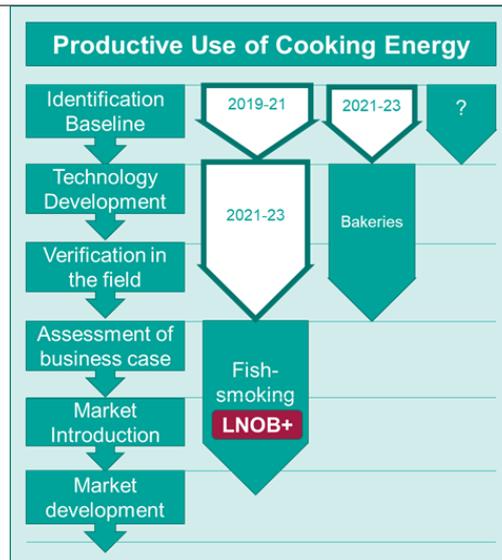
	<ul style="list-style-type: none"> • Technological: This question will be addressed once a suitable technology has been identified, tested, and accepted by the users. • Social: The previous trials resulted in the rejection of the technology by the users (fire power too low). It remains to be seen if there is a different technology that could satisfy the different user groups in the country. <p>i. Make HTC work for LNOB It is far too early to assess the potential sustainability of the innovation. First of all, it needs to be proven that with the three changes, the cooking conditions will change to HTC- tier level based on the MTF-P system. Secondly, it needs to be found out if these solutions are acceptable and appreciated by the LNOB+-target group. Thirdly, it needs to be elaborated, which approaches would be suitable for promoting the three innovations and how it can be assured, that the LNOB+ target groups also can benefit from the innovation.</p>																				
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. 	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>746,334</td> <td>0</td> <td>0</td> <td>2,913,402</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2 N/A</p> <p>Cooking sector: Component 2.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Indicator 1: Annual sales of ICS (EnDev/GCF)</td> <td><i>per year, 168.000 ICS additionally sold to the 2022 result</i></td> <td>0</td> <td>0</td> <td><i>586.000 annual ICS sales 2024</i></td> </tr> </tbody> </table> <p>Narrative The focus of the 2023-25 programming in the household cooking energy sector of EnDev Senegal is on the explorations of options for HTC. All different options are reflected. The main purpose is to create the empirical base for the GoSN to take decisions for future investments on HTC. The actual creation of new access is done under EnDev/GCF with an attribution of 2% growth of the baseline to EnDev core in 2020. One LNOB+ intervention is promoting the economic empowerment of women groups in the production of ceramic inserts for ICS.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	746,334	0	0	2,913,402	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	Indicator 1: Annual sales of ICS (EnDev/GCF)	<i>per year, 168.000 ICS additionally sold to the 2022 result</i>	0	0	<i>586.000 annual ICS sales 2024</i>
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<p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 33% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 26%</p> <p><input checked="" type="checkbox"/> LNOB+: 51%</p>

<h3 style="text-align: center; color: #00A68F;">Cooking sector: Component 2.2 – Cooking Energy - productive uses</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the</p>	<p>Process heat in rural value chains is often generated from wood fuels with very inefficient technologies. This contributes to the deforestation of Senegal. This sector has been overlooked by stakeholders for a long time. For this reason, there is hardly any data available on the magnitude and gravity of this problem. EnDev SN designed a process model applied to systematically address the most relevant cases (see graphic below).</p>

relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).



2.2.1 Economic Empowerment of cooperatives of poor female fish processors (LNOB+)

Traditional fish-smoking is a large consumer of firewood. GoSN installed many FTT kilns which have been developed in Senegal under the guidance of FAO. Unfortunately, the female fish processors find the FTT not very functional, not very efficient, and not convenient to use. Hence the majority of FTT are currently not in use.

In the programming 2021-23, EnDev SN selected the fish-smoking as the first PUE in the biomass energy sector for the development of a new technology. 2 years later, the technology is performing well in field-tests and will be ready for scaling from 7/2023 onwards.

The technology was developed under close implication of women from the fish-smoking cooperatives in Bargny and Mbour and the research centre CERER. The women created the name of the technology: nopalé (wolof: relax), as with the new technology they can sit next to the kiln and relax, while before they were always in the smoke.

The next step in the classic EnDev core business **would be** to launch market introduction and support the involvement of private sector actors on the supply side as well as the demand side, most likely with a result-based-finance approach and a sensitisation campaign.

However, there would be the danger that this approach would leave behind several thousand female fish-processors who are organised in cooperatives and who are operating with very little working capital and very basic technologies. They would not be able to afford the investment of approximately 700 to 1,000 EUR per fish-smoking kiln, neither individually, nor collectively. Starting with the stronger actors in this case implies the risk that the weaker actors will be denied access to the technology, the scarce fish resources, and to the market for smoked fish due to the superior quality of the products stemming from the new nopalé technology.

Based on this gender analysis, it deems better to start with the cooperate sector in order to ensure that the majority of (mainly female) actors of the traditional fish smoking sector are not left behind (LNOB+ approach). The main development steps are:

1. Training several companies in the construction of nopalé that can jointly serve all the selected site of fish smoking activities. This

will be followed by quality control and efforts to standardise production processes.

2. Installation and handover of a first lot of nopalé units to cooperatives on selected sites.
3. Train women cooperatives in proper technical use of the nopalé. They also will be advised on hygiene and product safety, managing income from usage fees, organising maintenance and on business skills.
4. If found feasible, some sites will be used to test pigeon pea stems (see 2.1.1) as sustainable, carbon neutral source of biomass fuel for fish smoking.
5. A field study on the impact of nopalé on the fuel use in fish smoking and the income situation of women groups will be implemented.
6. Stakeholder of the fishing sector will be made aware of the benefits of nopalé in the context of a stove camp at CERER, during field visits, by a film documentary and through participating in international meetings. This could leverage external funding of a faster transformation of the sector.
7. The commercial fish-processors outside the cooperative systems will be invited to observe and even to test the technology. They will be referred to the commercial nopalé providers for access.
8. EnDev will assist the Ministry of Fisheries as well as the NDA in integrating nopalé in their sector strategies.

The RBF approach for scaling of the technology within the commercial sector of fish-processors is subject to additional funding either in this programming, or in the next programming, or with the support of the co-funding of another donor.

There is the potential that the world bank is developing a program through the ministry of environment for the blue economy, which is including the traditional fish smoking. This could be another opportunity to leverage an alternative path for fast transformation of the sector.

Meanwhile, the Ministry of Fisheries and Marine Economy has recognised the Nopalé as a highly appreciated and very efficient fish-smoking technology. EnDev SN has been requested to test if the FTT kilns could be modified based on Nopalé-design features. The first test of the concept was successful in terms of suitability and acceptance. Now the first pilot units are under construction. The modification of FTT into “No-FTT” will be a second activity on fish-smoking serving the same target group (women cooperatives) under this key intervention. It is important to note that within the cooperative, each woman is working as an independent business. However, they are taking turns for using the kilns as none of them has the need to use the full capacity of a kiln. Therefore, each kiln is serving approximately 3 women. The real number of women benefitting from the installed kilns will be assessed during implementation based on the records of the cooperative on the payment of the usage fees.

2.2.2 Improved Bakery Ovens

The chamber of crafts and local authorities in the 14 regions of Senegal have registered app 8.000 traditional bakeries in the country. A quantitative field study revealed that 60% of these bakeries are no longer functional. However, with an average daily wood use of 55 kg,

	<p>the active traditional bakeries use more than 60.000 t firewood per year. This makes them a relevant target group for the intervention. EnDev SN will select a few traditional bakers to become partners in a user centred design process. Experts in biomass energy and in bread baking will visit bakers at their places to understand their current baking process with its requirements on heat distribution and temperature over time. They will assess the current fuel and combustion system and discuss with the user what should be maintained and what should be changed (and for what reason). Based on the feedback, a solution will be developed and built jointly with bakers and research staff of CERER at the research centre. Bakers will test the prototype and give their feedback, that will be considered in an adaptation process.</p> <p>The second step is the modification of existing bread baking ovens or the construction of new baking ovens in the field, in conjunction with traditional bakers and their organisation. During field testing, the reduction of specific fuel consumption per bread will be calculated comparing the traditional bread oven and the new technology. A branding will be done (local name of the technology), and the communication on the results will start including stove camp, field visits etc. for bakers-organisations, ministries, and donors. The market introduction and scaling will follow in the next phase from 2025-27.</p> <p>2.2.3 Next PUE (not in ToC)</p> <p>In parallel to the piloting of bakery ovens and the scaling of fish-smoking barns, EnDev SN will identify already the next sub-sector of biomass use in rural value chains and initiate the baseline study in preparation of the programming 2025-27.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>In the development of the technologies, the research centre CERER and the target groups are the key collaboration partners. In the field test, the local representatives of the Department of Fisheries and the Department of Water and Forests are implicated in the facilitation and supervision of the pilots. The chamber of crafts will supervise the field testing of new improved bakery ovens. The fish smoking women cooperative is part of a federation. This structure will be used for supporting the scaling in 2023-25. The NGO ISCOS is scaling in collaboration with EnDev the first fish-smoking kilns with their own funds. They are planning to mobilize more funds for further scaling, particularly in the south of Senegal. The new WB program in preparation is planning to have activities on fish-smoking. EnDev SN will coordinate with them for mainstreaming the EnDev Technology. EnDev Senegal is also benefitting from experiences of EnDev Malawi. Today, GIZ Gambia has started to test with support of EnDev SN the Nopalé concept for their own fish-smoking interventions. Thus the nopalé is a good example of south-south innovation transfer and adaptation.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p>	<p>2.2.1 Economic Empowerment of cooperatives of poor female fish processors (LNOB+)</p> <p><u>Financial</u>: Based on the size of the cooperative, between 8 and 24 nopalé units will be donated. Additionally, the FTT units will be transformed in No-FTT as per agreement with the Ministry. The</p>

<p>a. Financial – is there a viable business case in the absence of the project, or sustained alternative funding?</p> <p>b. Institutional – is there an enabling environment with supportive institutions?</p> <p>c. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?</p> <p>d. Technological – is technology and know-how for replacement and repair available?</p> <p>e. Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>cooperatives will use their income from usage fees to maintain the nopalé and no-FTTs and for the purchase of new nopalé units.</p> <p>Institutional: The approach will be implemented with the support of the ministry in charge of fishery, which is also the guardian of the cooperatives.</p> <p>Ecologically: the nopalé is reducing firewood use by 75-95% (based on “controlled smoking tests”. The fuel use reduction of the No-FTT has not yet been tested but is assumed in a similar range. The reduction of smoke emissions is visually significant, but there is no approved methodology yet available for the quantification.</p> <p>Technologically: several companies at different sites will be trained as service provider for the installation and maintenance of the Nopalé and No-FTT;</p> <p>Social: It is a LNOB+ intervention, explicitly targeting women groups that otherwise would have been left behind.</p> <p>This is still the beginning of the market development. After the commercial sector of fish smoking has been reached (through an RBF with the next funding), the market will be big enough for an exit of project support.</p> <p>2.2.2 Improved Bakery Ovens</p> <p>Within the period of this programming, all preparations will be done for the market introduction in 2025-27. Sustainability of the intervention will be assessed once the technology has been developed.</p>																
<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p>	<p style="text-align: center;">Cooking sector: Component 2.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to cooking</td> <td>277</td> <td>0</td> <td>275</td> <td>277</td> </tr> </tbody> </table> <p style="text-align: center;">Cooking sector: Component 2.2 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.2: suppliers with new business plans for PUE systems</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>5 suppliers of Nopalé fish smoking kilns supported in development of business plans</td> </tr> </tbody> </table> <p style="text-align: center;">Cooking sector: Component 2.2 – Table 3</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">Narrative</p> <p>Nopalé will be established as the desired technology choice by the ministry of fisheries and the ministry of environment for all programs working on fish-smoking. The ministry of fishery will stop promoting FTTs and establish a process for the full transformation of FTTs into No-FTTs. The NDA will use detailed monitoring data to improve her</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	PU: Access to cooking	277	0	275	277	Outputs	Applicable	Details	Indicator 2.2: suppliers with new business plans for PUE systems	<input checked="" type="checkbox"/>	5 suppliers of Nopalé fish smoking kilns supported in development of business plans
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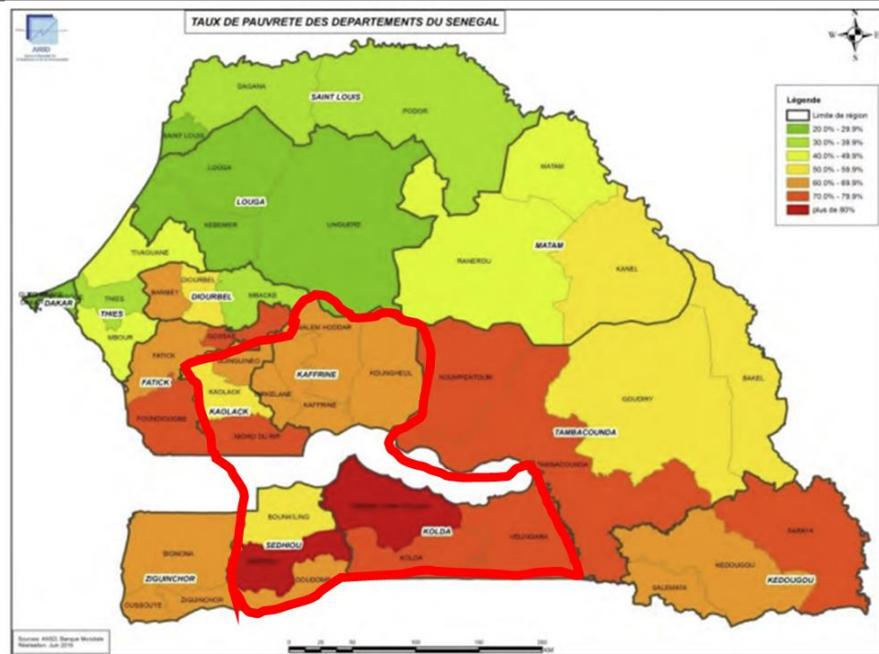
<p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>reporting on climate impacts of fish smoking and other productive uses of biomass.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 20% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input type="checkbox"/> HTC: 0%</p> <p><input checked="" type="checkbox"/> LNOB+: 93%</p>

Electricity sector	
<p>Please briefly describe</p> <ol style="list-style-type: none"> the current state of the market based on the ToC for the electricity sector, highlighting key barriers how key EnDev interventions / components help to 	<p>Electrification of rural households (see 3.1)</p> <p>The overall challenge for the sector of rural electrification is how to assist GoSN in achieving the universal access target in 2025. This is increasingly difficult as people living in the very remote rural areas of Senegal may not be reachable with market-based approaches.</p>

overcome barriers and contribute to transformation in one or more of the following ways:

- a. **Market development**
(developing a market for energy access technologies – mainly relating to household access)
- b. **Economic development /**
productive use
- c. **Social Development**
- d. **Poverty alleviation**
(leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.



EnDev has been promoting rural electrification in 4 regions with poverty rates of 50 to > 80% in the regions of Kaolack, Kaffrine, Sédhiou, Kolda ([ANSD, 2016, p 20](#))

In the past, EnDev SN focussed on a market-based approach that is favouring households with sufficient purchase power to afford their electricity bills. This focus was chosen to promote the financial sustainability of the service provision and long-term re-investments into maintenance and repair by the operators of the systems. However, this approach did not address the needs of the very poor and therefore did not help to fill the gaps to prevent that people are left behind. It is inevitable that this concept alone cannot achieve universal access to electricity.

EnDev SN has therefore reviewed its approaches for the electrification of rural households to make them better adjusted to the needs of the poor and vulnerable for the promotion of access with all relevant technologies in an effort to leave no one behind.

The expansion of the national grid is only effective if the households are connected. The utility SENELEC recently changed its indicator from “reaching villages with the grid” to “increasing households with access to electricity”. EnDev is increasingly in discussions with SENELEC on its approaches.

For connecting more households to the national grid, EnDev will be piloting a pro-poor RBF jointly with SENELEC in the EnDev intervention zone. (see 3.1.1). The first generation of mini-grid is limited in its sustainability. Because of its limited capacity, priority was given to connect households that can afford to pay their electricity bills, leaving the poor households behind. A better configuration “mini-grid 2.0” is piloted and evaluated by EnDev that will allow to provide access even to the very poor households in the villages. EnDev SN is supporting ProAccess and ASER and IsDB in the scaling of the technology and the promotion of the concept in the sector (see 3.1.2).

	<p>The ‘fee-for-service’ approach for SHS will be phased out. In collaboration with SENELEC and in alignment with the ProAccess, EnDev will pilot an RBF that shall directly support the poor (LNOB+) as well as enhance market development (see 3.1.3). Small and affordable products are not offered where the rural poor live. EnDev SN is assisting 15 women groups to become retailer and first level repair experts for PicoPV systems in collaboration with large suppliers. This will lead to economic empowerment of women as well as supporting basic access in regions with high poverty rates. (see 3.1.4).</p> <p>Electrification of SI and PUE (see 3.2) Intervention concepts on SI and PUE in the EnDev-led sub-cluster “Access to Energy” have been developed and implemented under the funding of Grüne Bürgerenergie (GBE). This program will phase out in September 2023. The electrification of health posts with income generation for sustainability will be continued at a small scale (see 3.2.1). The promotion of stand-alone PV-PUE systems is a proven success and will be expanded under ProAccess and EnDev SN to increase the number of regions covered (see 3.2.2). EnDev will continue coaching RE-project developers in the development of bankable project proposals (see 3.2.3).</p> <p>Sector support (not in ToC) In collaboration with the GIZ/PED program, EnDev Senegal is supporting the sector with IT support by integrating the real time performance data of mini-grids of different donors on the EnDev digital dashboard. EnDev will produce and provide communication products to promote new innovations in the sector such as mini-grid 2.0. EnDev will support the sensibilisation of targeted EnDev-communities on the recycling of batteries.</p>
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<h2 style="text-align: center; color: #00A68F;">Electricity sector: Component 3.1 – Rural Electrification – households</h2>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>GoSN is under tremendous pressure to deliver towards the declared ambition of universal access in 2025. So far, nearly 50% of the rural population still does not yet have access to electricity. One of the reasons is that the rural population particularly in the Centre, the East and the South of Senegal is very poor. GoSN is urging its agencies, the energy companies (e.g. SENELEC), the donors and other stakeholders of the sector to contribute faster to achieving the goal. By developing pro-poor approaches for all major types of technologies (grid, mini-grid and stand-alone systems), EnDev SN and the EU-co-financed ProAccess is reacting to the demand for aligning the sector to the current requirements of the government. The level of results may not yet suffice to contribute significantly to the universal access in 2025, but the project will give the GoSN a range of proven instruments to advance fast in 2026-2030. To do so, EnDev is in ongoing discussions with the SENELEC and ASER for assuring a good alignment of approaches.</p>

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).

Technology	Key-interventions in EnDev Programming 2023-25	Activities in co- and parallel funding
National Grid	Pro-poor RBF including in-house installations (LNOB+) to connect households to the grid	n.a.
	If the national grid is reaching EnDev mini-grids, EnDev is facilitating the transition	n.a.
Mini-grid	Phasing out the mini-grid 1.0 approach	ProAccès: up-grading mini grids 1.0
	Installation of 2 pilot units of mini-grid 2.0 including field testing of pilot units	ProAccès: installation of 2 pilot units mini-grid 2.0 including field testing
Stand-alone systems	Phasing out SHS fee-for-service	n.a.
	RBF for stand-alone systems (picoPV and SHS) with the “pro-poor approach of ProAccès” combined with market development elements in EnDev target areas	ProAccès: pro-poor RBF for SHS for the electrification of the most remote villages in EU-intervention zones
	Women groups as retailers and first level repair for pico-PV systems	n.a.

3.1.1 Connecting poor households to the grid (LNOB+)

The EnDev intervention zone for rural electrification is including regions with the highest poverty rate in Senegal. The utility SENELEC is realising that not many households are connecting themselves to the grid spontaneously. SENELEC invited EnDev to collaborate in the search for a workable mechanism that can help increasing the electrification rate for the poor population. The “direct targeting of the poor households” based on an official government register of poor households by SENELEC resulted in social tensions within the communities. It turned out that many equally poor households are not on the list. EnDev is envisaging to test in 10 pilot villages a pro-poor offer for all households to avoid social conflicts. However, for the reporting of LNOB+ specific results, only households that are on the poverty list will be considered. The service includes the connection to the grid and safe inhouse installation at a highly subsidised level. The project will support in this process the operators of mini-grids to become service providers of safe inhouse installations. SENELEC will assess the EnDev approach for further scaling outside of EnDev intervention. Households not able or not willing to pay the remaining small own contribution will be offered instead a highly subsidised pico-PV system (with a symbolic own contribution remaining to pay) for ensuring a minimum level of access for all households in the village. No households in these 10 pilot villages shall be without at least a minimum level of access at the end of 2025. All households of the village that are on the government poverty list will be reported under LNOB+. All other households under the normal EnDev results.

3.1.2 Mini-Grid 2.0 – inclusion of the poor (LNOB+)

The first concept for mini-grids has shown two major weaknesses: it was not very sustainable, and it was excluding the very poor from being connected. In most cases, the capacity of the mini-grid 1.0 was too small to accommodate all households of the village. Hence the connection fee was a kind of selection criteria to ensure only financially strong households would be connected. The innovative concept of mini-grid 2.0 has been developed in the past 5 years in collaboration between EnDev and GIZ/PED. This concept is addressing both weaknesses. Technical innovations allow to improve the sustainability of the mini-grids 2.0. This includes the active promotion of commercial uses of electricity by small companies (e.g. mill, tailor etc.). And conceptual innovations allow to ensure that no one is left behind in the village in terms of access to electricity: 1) the capacity of the mini-grid is even considering potential population

growth of the village in the coming years (and for PUE); 2) In-house installation and connection fee will be highly subsidised to make the basic access level very affordable even for poor households. The households will be provided with an individual smart meter, allowing them to control their energy costs in real time once the tariff has been approved by the regulator.

Households not able or not willing to pay the remaining small own contribution for their connection to the mini-grid, or that are afraid that they will not be able to pay their electricity bill afterwards, will be offered instead a highly subsidised pico-PV system (with a symbolic own contribution remaining to pay) for ensuring a minimum level of access for all households in the village. No households in these 10 pilot villages shall be without at least a minimum level of access at the end of 2025

All households of the village that make use of the basic tariff level or the picoPV system and that are on the government poverty list will be reported under LNOB+. All other households under the normal EnDev results.

EnDev SN will install two more mini-grids 2.0 that will be delivered at the beginning of the new programming period. All stakeholders will be sensitised on the new technology and trained on technical and financial issues.

In these two villages, up to three social institutions will be connected to the mini-grid (school, health post, mosque) and 10 streetlights installed. The operator of the mini-grid will not charge the community for these electricity consumed by these services.

There will always be the spontaneous connection of small enterprises to the mini-grid. However, the program will additionally select five women-owned or women-managed enterprises for the support of PUE.

EnDev will collaborate with ProAccess to provide sufficient empirical evidence about the benefits of the new configuration that will be used to convince the stakeholders to adopt the new model.

While piloting has just started in the current phase and is supposed to continue in 2023-25, the national partner ASER will already start its replication in scale based on a funding of IsDB (133 mini grids).

EnDev will support ASER to scale the concept in a first selection of sites (from identification of sites up to reception of final installation).

These new mini-grids will be integrated into the remote-control platform of EnDev that allow the performance assessment of each mini-grid on a dashboard. As the IsDB investment does not include the Li-batteries, ASER likes to compare durability parameters between the installations of EnDev and ASER/IsDB. EnDev as the inventor of the concept 2.0 will be implicated in the activities of different donors to ensure proper application of the concept. EnDev will also advise ProAccess on the implementation of the innovation fund for the upgrading of some mini-grids that were previously created under EnDev with the configuration 1.0.

3.1.3 Stand Alone systems – RBF for “Pro poor” (LNOB+) and “market development”

At the beginning of EnDev SN in 2006, SHS were expensive and not available in Senegal. As the EnDev implementation zones were amongst the poorest regions of Senegal (up to '>80%' of the households in the category "poor"), the best solution at the time was a "fee for service"-concept in which households are only charged for the use of the electricity. 17 years later, individual stand-alone systems have become very affordable for individual households and are distributed by national companies including financing services. However, the suppliers are focussing on the "low hanging fruits", leaving behind the poor households living in the most remote villages. In the previous EnDev programming, EnDev SN planned to support the companies to extend their offer into remote areas. Due to limitations of fund, this activity was on "standby" and later picked up by the EU for the ProAccess co-funding of EnDev. Hence the promotion of SHS in the most remote villages based on a pro-poor RBF will be done by the EnDev-led sub-cluster as part of ProAccess. In the initial 172 villages with an operator-based fee for service approach, the service provision is less and less functional. Many of these villages are already or will be soon connected to the expanding national grid. However, 38 villages will not be reached by the grid for a long time. Some of these villages will be allocated by ASER to other donors for the installation of mini-grids. For the villages that will neither be connected to the grid nor to mini-grids, EnDev SN will develop in line with the ProAccess program a combined approach of "pro-poor" and "market development" RBF to ensure that all households will at least have a minimum level of access to electricity. This will be achieved by using pro-poor system-price subsidies for solar kits offering basic energy services, whereas for solutions with a greater capacity the focus is on RBF-incentives paid to the companies for developing the market. The approach will be aligned with the RBF mechanism that is currently under development for the Pro-Access program. It will ensure that all poor households will have at least a pico-PV system for basic access to electricity. The approach will be tested in at least 10 villages. If additional funding is available, it will be expanded to all remaining 178 EnDev villages that will not be reached by the grid or a mini-grid. Only households that

- have been reached with a subsidized stand-alone system under the pro-poor approach **and**
- that are on the government poverty list will be reported under LNOB+.

All other households that gain access to a stand-alone system will be reported under EnDev core.

3.1.4 PicoPV – Economic Empowering of women groups as retailers servicing very poor population (LNOB+)

The access to quality PicoPV systems for poor rural households is very limited despite its need and fit for the target groups. EnDev has started an approach of empowering women groups by providing training on business skills, an initial stock of PicoPV systems (as a revolving fund) and technical training for first level maintenance and repair in collaboration with the suppliers of the systems. This will allow poor women in marginalised regions to become last mile actors of the supply chain providing access to very poor target groups.

	<p>Customers of the women groups will be reported under LNOB+ in case their names are on the poverty list of GoSN. Otherwise the results will be reported under EnDev core.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>The EnDev-lead sub-cluster ‘Access to energy’ is coordinating with the bilateral energy program PED (GIZ) that is the principal partner of the ministry in charge of energy. In the next phase, PED will receive significant additional funding, which will require a revision of the division of tasks. EnDev SN also collaborates with other GIZ programs on access to finance (ACCESS) and job-creation (SI Jobs, Réussir au Sénégal, PESEREE).</p> <p>EnDev SN is a permanent member of several consultative groups at the ministry in charge of energy. It is also participating in the donor group of the energy sector.</p> <p>EnDev is supporting ASER in the implementation of donor funded programs such as for the 133 mini-grids financed by IsDB. For the promotion of stand-alone systems, EnDev will be collaborating with supplier companies of these technologies for the establishment of distribution and retailing structures into these areas. This may also include the involvement of Finance Institutions.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ol style="list-style-type: none"> a. Financial – is there a viable business case in the absence of the project, or sustained alternative funding? b. Institutional – is there an enabling environment with supportive institutions? c. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? d. Technological – is technology and know-how for replacement and repair available? e. Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? 	<p>3.1.1 Connecting poor households to the grid (LNOB+)</p> <p>The pro-poor approach for increasing the connection of households to grid-connected villages is a reaction to the poverty priorities of Senegal (universal access by 2025).</p> <ul style="list-style-type: none"> • <u>Financial</u>: The financial sustainability is high as the households will be connected to the SENELEC who can compensate losses in rural areas with income from urban clients. • <u>Institutional</u>: <u>This RBF will be implemented in close collaboration with the utility SENELEC, ASER and village leadership.</u> • <u>Technological</u>: the capacity and stability of the grid is influenced rather by the development at national level (gas-to-power investments, battery storage investments, increase RE-generation for the grid, etc.) • <u>Social</u>: the pro-poor approach provides access even for the most disadvantaged households. <p><u>Exit strategy</u> is to introduce the new concept a of pro-poor RBF to the donor community of Senegal and lobby for its replication. Once the households are connected, the SENELEC is in charge of maintaining the distribution system. In case of failure of the in-house installations, the households have access to the company that did the installation through the village leadership.</p> <p>3.1.2 Mini-grid 2.0 – inclusion of the poor (LNOB+)</p> <p>The concept of mini-grid 2.0 has been developed to resolve explicitly the sustainability challenges of the first configuration.</p> <ul style="list-style-type: none"> • <u>Financial</u>: more PUE using electricity during daytime, increasing the income. • <u>Institutional</u>: GoSN still delaying introduction of harmonized tariffs and contracts for operators. • <u>Technological</u>: many innovations in the configuration 2.0 will improve the sustainability (e.g. Li-Batteries, smartphone-app for care-takers of mini-grids);

What is the exit strategy and/or ideas for follow-up financing?

- Social: the current flat rate tariffs are giving the rich users an advantage over the poor. Introduction of consumption-based tariffs will reduce burden of the poor in the future.

Exit strategy is to introduce the new configuration to the donor community of Senegal and lobby for its replication.

3.1.3 Stand Alone systems – RBF for “Pro poor” (LNOB+) and “market development”

This key intervention is implemented in close collaboration with ProAccess.

- Financial: The more powerful larger systems shall be supplied on the long run in a sustainable market. RBF companies are supported with incentives to develop sustainable distribution structures. The very small picoPV systems cannot be offered at a subsidised price beyond the duration of the intervention, However, they can serve as a stepping stone for poor households if the medium size products are offered with financing packages.
- Institutional: Supply structures will be available at the end of the intervention that can continue supplying stand-alone systems beyond the timing of the intervention.
- Technological: RBF companies will be obliged to provide warranties and mini after sales services. A range of technologies will be introduced to the target community, providing sufficient choice for long-term interest of the clients.
- Social: The approach is ensuring that even the most marginalised households will have a minimum level of access.

Exit strategy is to introduce the new RBF concept (pro-poor and market at the same time) to the donor community of Senegal and lobby together with ProAccess for its replication. The vision is that there is sufficient demand for stand-alone PV systems in and “on the way to” the remote villages that it will motivate the companies to continue supplying systems even after the end of the RBF.

3.1.4 PicoPV– Mobilising women groups as retailers

The implementation has just started, and it remains to be seen if this pilot is going to achieve sustainable results.

- Financial: Women groups receive a first batch of picoPV systems for commercialisation. The income from system sales provides a revolving fund for purchasing additional units. The groups are coached by BDS consultants to support the integration of the picoPV products into their business plans and to improve their financial management practices.
- Institutional: The strength of a women group depends on the character of the leaders. The link between the groups and the supplier of the community will still need to be developed and strengthened. The coaching of the groups by the BDS consultant will support the improvement of leadership.
- Technological: The systems are already on the market and sold by the companies in more peri-urban settings. So far there are no significant technical failures known.
- Social: This approach is poverty oriented with the idea to give women groups a chance to be more than just recipients of a

	<p>product. Clients of the women groups who are on the government poverty list will be reported under LNOB+. All other clients will be reported under EnDev core .</p> <p><u>The exit strategy</u> is that in the long run the suppliers of the picoPV systems develop a partnership with the women groups and see the benefit of investing in their capacity (financially, technically, etc.).</p>																														
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Electricity sector: Component 3.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>9,845</td> <td>4,227</td> <td>86,768</td> </tr> <tr> <td>SI: Access to electricity</td> <td>70</td> <td>16</td> <td>1,361</td> </tr> <tr> <td>PU: Access to electricity</td> <td>72</td> <td>0</td> <td>1,179</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.2: +25% customers reached by fin. products</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Distribution of pico solar products by women groups offering instalment payments; prepayment smart energy meters in mini-grids</td> </tr> </tbody> </table> <p>Electricity sector: Component 3.1 – Table 3</p> <table border="1"> <thead> <tr> <th>Additional quantitative indicators</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>Indicator 1: People: Access to off-grid electricity (EU-Cofi ProAccess)</td> <td>2.819</td> <td>1410</td> <td>2.819</td> </tr> </tbody> </table> <p>Narrative</p> <p>The main objective of EnDev SN in this programming period is to provide proven approaches for all relevant technologies (grid, mini-grid and stand-alone systems) that work in reaching the poor households that otherwise would be left behind. A good result would be if GoSN is using these approaches to lobby with large donors for its scaling in other parts of the country.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	9,845	4,227	86,768	SI: Access to electricity	70	16	1,361	PU: Access to electricity	72	0	1,179	Outputs	Applicable	Details	Indicator 1.2: +25% customers reached by fin. products	<input checked="" type="checkbox"/>	Distribution of pico solar products by women groups offering instalment payments; prepayment smart energy meters in mini-grids	Additional quantitative indicators	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	Indicator 1: People: Access to off-grid electricity (EU-Cofi ProAccess)	2.819	1410	2.819
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Electricity sector: Component 3.2 – Rural Electrification – SI and PUE									
<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).</p>	PV-Electrification of Health Posts								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 50%; text-align: center;">Current funding</th> <th style="width: 50%; text-align: center;">Programming 2023-25</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">3.2.1 PV-installations and PUE for Sustainability</td> <td style="text-align: center;">GBE until 9/23</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">Continuation of GBE approach in 10% of EnDev Health installations</td> </tr> <tr> <td></td> <td style="text-align: center;">EnDev Health 22</td> </tr> </tbody> </table>		Current funding	Programming 2023-25	3.2.1 PV-installations and PUE for Sustainability	GBE until 9/23	Continuation of GBE approach in 10% of EnDev Health installations	
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	EnDev Health 22								
<p>3.2.1 Sustainable electrification of health posts</p> <p>Until 09/2023, the Green People’s Energy Project (GBE) of the EnDev-led sub-cluster “Access to Energy” will continue to electrify more health posts and schools (including the generation of maintenance fund through PV-PUE).</p> <p>In parallel, EnDev is currently installing PV-systems in 120 health posts including fridges for vaccines based on a special funding of BMZ. Unfortunately, the modalities of this special funding do not allow the integration of the GBE-sustainability approach.</p> <p>EnDev will demonstrate how to make these investments more sustainable by applying the GBE concept on 10 of these 120 health posts (adding the component of income generating activities). The activity will be scaled once more funding has been acquired (e.g., in a second phase of GBE).</p> <p>It implies that communities identify a PV-service they require and are prepared to pay for (e.g. solar lanterns, cell phone charging, cold drinks etc.). The income is saved on a special account until maintenance is required.</p>									

Productive Use of Electricity		
	Current funding	Programming 2023-25
3.2.2 RBF promoting stand-alone systems	GBE until 9/23	Continuation of GBE approach
	Pro-accès	Coordination with ProAccess on the RBF approach
3.2.3 Access to finance for larger PV-PUE-Systems	GBE until 9/23	Continuation of GBE approach: <ul style="list-style-type: none"> • Coaching of project developers for loan application • BDS activities for loan recipients

3.2.2 RBF for stand-alone PV-PUE systems

GBE is successfully creating access to stand-alone PV-PUE systems through RBF contracts with RE companies and MFIs. The suppliers of the technology have continued selling their products after the end of the incentive payments and even started to replicate spontaneously the approach in other areas including the cooperation with the MFIs. GBE will implement this approach still until 09/2023. At the same time, stand-alone PUE equipment will also be promoted with an RBF in some selected regions of the ProAccess EU co-financing of EnDev. There will be a geographic differentiation between the two programs, and as much alignment on the approach of the RBF as possible. However, the focus of ProAccess is on the very remote villages in their areas, leaving space for more market-oriented activities in the more centrally located villages. EnDev core funding will pick-up the ongoing activities of GBE at the end of 2023 and continue the implementation. On the long run, suppliers shall have established outreach to all regions including cooperation banks and partnership with farmers organisations.

3.2.3 Coaching of rural RE-project developers for access to finance

Developers of projects for RE-investments for cooperatives or companies have difficulties to have access to loans from banks. They often do not understand which documents have to be provided, how to develop the proposal and how to submit them. At the same time, banks have funding lines for these investments but lacking knowledge on how to find applicants and how to assess these green banking investments. GBE developed an approach for the coaching of banks and project developers that is resulting in first approval of loans. GBE will implement this approach until 09/2023. EnDev will continue coaching RE project developers from the pipeline to increase the number of commercially funded projects, to increase the number of project developers that have the capacity and experience of developing bankable projects and to increase the number of banks that have experiences in financing RE projects. EnDev will also follow-up the projects that have been financed by banks to promote good implementation with advice and to measure and document the impact of the RE investment. EnDev will continue to collaborate with the GIZ ACCESS program that is promoting access to finance. They are developing an online portal for loan applications. EnDev will support applicants of the project

	<p>pipeline to be testing the online portal to access finance for their projects.</p> <p>Siemens energy is developing a blockchain finance project named “connect2evolve”. EnDev SN will be collaborating with this blockchain-project for a small number of projects. While the financing of the investments will be provided by international impact investors, EnDev will assist in the technical monitoring of the projects’ implementation and their impacts.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>3.2.1 SI (Health posts) This key intervention is implemented under the ministry of health and the ministry of energy. It is contribution to the effectiveness of the German investment into the development of vaccine production in Senegal for the population in rural Senegal.</p> <p>3.2.2 RBF for stand-alone PV-PUE systems This key intervention is implemented in cooperation with the suppliers of the technology, the micro-finance institutions and the farmers organisations of the targeted region.</p> <p>3.2.3 Coaching of rural RE-project developers for access to finance There are many projects working in the field of finance in Senegal. EnDev will particularly collaborate with the GIZ project ACCESS that is improving the access to finance based on an internet portal. Complementary, EnDev is collaborating with Siemens Energy in the context of their blockchain finance project named “connect2evolve”.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ol style="list-style-type: none"> a. Financial – is there a viable business case in the absence of the project, or sustained alternative funding? b. Institutional – is there an enabling environment with supportive institutions? c. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? d. Technological – is technology and know-how for replacement and repair available? e. Social – is the projects output well 	<p>3.2.1 SI (Health posts)</p> <ul style="list-style-type: none"> • Financial sustainability: This key intervention is an explicit reaction to sustainability challenges. Surplus PV-power is used to generate income for maintenance. • Institutional sustainability: The establishment of the income generating activities at the health post is done under the village leadership using a village committee for implementation. National NGOs support the installation of the structures and are coaching the stakeholders to ensure proper application of the concept. • Ecological sustainability: E-waste is addressed by the sector support on battery recycling (see under 3.1). • Technological sustainability: this activity is a direct response on the sustainability challenges as local health posts have no funding to pay for the maintenance and repair of solar systems. The income of IGA is paid into a dedicated account that will be used when there is demand for maintenance or repair. • Social sustainability: the health centre and the IGA are providing services for all the population of the village. Women and children benefit particularly of improved services at the health post. <p>Exit strategy: in the long run, the villages can maintain their systems on their own without support of the project. However, there are a lot of health-posts that still need to be reached. This will require significant funding.</p> <p>3.2.2 RBF for stand-alone PV-PUE systems This is a proven approach of GBE which already has shown market continuation after the end of the RBF intervention. The business case</p>

<p>appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>is viable for both the supplier of the PV-PUE technology as well as his clients. GBE is collecting business data that show the viability of their investment into the stand-alone PV-PUE systems.</p> <ul style="list-style-type: none"> • Financial sustainability: The financial sustainability has been proven by GBE as the supply chain continued after the end of the RBF-incentive payments. • Institutional sustainability: The program is establishing direct collaboration of MFIs and suppliers of stand-alone PV-PUE technologies that continue functioning after the end of the RBF (GBE experience). • Ecological sustainability: in general, solar water pumping might have a negative impact on the ground water table. However, if it is river water that is pumped on the field, it might also be the opposite. Overall, stand-alone systems are not so powerful to have a very significant impact on the water table. • Technological sustainability: The main technologies are solar water pumping, solar fridges and solar mills. They are well-proven technologies, and the national suppliers have many years of experience. • Social sustainability: Under GBE, there is a minimum threshold of 30% female-headed enterprises to be considered in the selection of clients for the stand-alone systems. <p>Exit strategy: Each RBF contract is concluded for a specific geographic zone and limited in terms of number of systems that will be supported. After that, the incentive is withdrawn. As the incentive is for the supplier while the clients are paying a market-based price, there is no limitation in the continuation of the business.</p> <p>3.2.3 Coaching of rural RE-project developers for access to finance</p> <ul style="list-style-type: none"> • Financial sustainability: the financial viability of the project is assessed by the banks. • Institutional sustainability: The coaching of project developers is done by national service providers. This allows further training after the end of the project. The GIZ/ACCESS program is establishing a virtual platform for loan application. EnDev will support stakeholders in using the platform. • Ecological sustainability: there is no specific technology, hence this cannot be assessed in general. • Technological sustainability: there is no specific technology, hence this cannot be assessed in general. • Social sustainability: GBE is assuring that at least 30% of the applicants are female project developers of female headed enterprises. <p>Exit strategy: Overall, there will be over time sufficient project developers and staff at FIs with relevant experiences in green banking to allow a further continuation of the sector without project support.</p>
<p>Please use table 1 to provide an overview of the component's outcomes, using</p>	<p>Electricity sector: Component 3.2 – Table 1</p>

<p>“adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>PU: Access to electricity</td> <td>106</td> <td>0</td> <td>1,179</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	PU: Access to electricity	106	0	1,179												
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	<p>Narrative</p> <p>EnDev will use the GBE approach to further demonstrate its effectiveness in order to convince the Ministry of Health and the Ministry of Energy that it should become the new standard for projects that health-posts ensure maintenance based on own generated funds.</p>																				
<p>Please provide a rough estimate of how much of the total budget is used to</p>	<p>Approx. 15% of total budget</p> <p>Approx contribution to thematic budget for:</p>																				

<p>achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+</p>	<p><input type="checkbox"/> LNOB+: 0%</p>
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Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>The e-waste, particularly the lead batteries, can constitute a risk for the environment. EnDev supported ASER in the establishment of a contract with a recycling company in Senegal that soon will be renewed. EnDev will assist in the facilitation of community processes for the implementation of the recycling process.</p> <p>The ICS program under GCF has developed an environmental and social management plan that is under implementation and is monitored.</p> <p>The LNOB+ interventions have been selected and designed to address (potential) negative social effects of the project implementation, in particular the leaving behind of women as producers in the RE value chain or as the users of the RE PUE product promoted by the project. All key interventions for improving access to electricity for people living in rural settlements are now focussed on LNOB+ to ensure that GoSN is getting closer in achieving universal access to electricity.</p> <p>The HTC interventions on eCooking, ethanol cooking and better ventilated kitchens are addressing the potential health risks of cooking with firewood.</p> <p>For most of the energy services promoted in this program, consumer financing is integrated in the implementation concept for reducing investment barriers.</p> <p>The piloting of food and fuel crops like pigeon peas as sustainable fuel for cooking is addressing the climate risks of cooking on non-renewable firewood. At the same time, the concept is built on the idea of synergy between the production of food and the production of fuel.</p>
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Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f quotation price above)	3,000,000	
2	EU	3,000,000	EU-Cofinancing “Pro-Accès” (RBF/Rural elec); Budget: 4.0 Mln EUR (thereof 1.0 Mln BMZ); Duration: 07/2022 – 06/2025
	Total estimated budget	6,000,000	

19. Sierra Leone

Acronyms

BDS	Business Development Support
CCA	Clean Cooking Alliance
CCT	Controlled Cooking Test
CES	Cooking Energy System
EFA	Environmental Foundation for Africa
EPA	Environmental Protection Agency in Sierra Leone
EPC	Electric Pressure Cookers
EPF	Employment Promotion Project
EU	European Union
EWRC	Electricity and Water Regulatory Commission
ICS	Improved Cookstove
IICS	Institutional Improved Cookstoves
GoSL	Government of Sierra Leone
GSI	Geostationary Satellite Images
KPT	Kitchen Performance Test
MHS	Ministry of Health and Sanitation
MoE	Ministry of Energy
NDC	Nationally Determined Contribution
RBF	Result Based Financing
REASL	Renewable Energy Association Sierra Leone
SAS	Stand Alone Systems
SIMS	Solar Installation Maintenance Structure
SHS	Solar Home Systems
TENN	The Energy Nexus Network
WB	The World Bank
WBT	Water Boiling Test
WFP	World Food Programme

Summary and key data

Promoted technologies				Mini-grids, SHS, eCooking, improved cookstoves
				Solar, biomass
Type of Energy				
Summary of proposed intervention(s)	<p>EnDev Sierra Leone's objective is to increase access to reliable, affordable, and modern cooking energy (incl. higher tier cooking) and off-grid solar technologies for households and social institutions.</p>			
Please describe your impact, the overall objective, and the key interventions i.e.:	<p>Improved and clean cooking</p> <p>EnDev aims to boost market development for improved and clean cookstoves by supporting both the supply and demand side of the market, as well as strengthening the MoE and the Compact to establish a conducive enabling environment for market growth. Dedicated activities for disadvantaged women and youth will contribute to the LNOB+ agenda. For HTC, EnDev will conduct a market study on the feasibility of different HTC technologies, and then pilot the most viable options.</p>			
	<p>Off-grid solar electrification</p> <p>EnDev's interventions in the OGS sector focus primarily on supporting supply-side capacities and strengthening the enabling environment. EnDev will provide BDS and technical trainings to private companies (incl. digitalisation trainings), utilise an RBF mechanism to extend commercial reach, and pilot the creation of nano-grids. EnDev will also support and strengthen REASL to increase participation, as well as support to conduct awareness-raising campaigns and utilise quality control standards and certification. To support the enabling environment, EnDev will engage stakeholders and host workshops between public and private sectors, and support government agencies to implement policy reform (tariff and quality controls). Additionally, EnDev will facilitate the active participation of women, disabled people, and youth in the OGS sector, and focus on electrification of existing social infrastructure.</p>			
Programming period	01.07.2023 - 31.12.2025		Indicative core budget	EUR 2,200,000
	Higher tier cooking (HTC)		Leave no one behind (LNOB+)	
Approx. TOTAL budget shares	5%		20%	
Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	23,260 people	N/A	3,400	Pico PV, SHS, Stand alone System, vulnerable groups, demand, etc.

Cooking / thermal energy for households	12,150 people	1,180	0	<i>ECooking, Improved cookstoves, higher tiers, vulnerable groups, demand, etc.</i>
Electricity and/or cooking / thermal energy for social infrastructure	336 SIs	0	85	<i>ECooking, higher tiers, vulnerable groups, demand, etc.</i>
Electricity and/or cooking / thermal energy for productive use / income generation	68 MSMEs	0	19	<i>ECooking, higher tiers, vulnerable groups, demand, etc.</i>

Country context

Please briefly outline

- the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
- EnDev's overarching objectives in the markets being supported
- EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

Sierra Leone is one of the poorest countries in Sub-Saharan Africa and globally, with a GDP per capita of USD 480 in 2020 (World Bank). The overall poverty rate in the country is 57%, with 10.8% of the population living in extreme poverty.

The Ebola epidemic caused long-lasting, negative socio-economic impact as well as revealed a deficient health system. Infrastructure is poor or non-existent and the country is extremely vulnerable to climate impacts, particularly along the coast which is affected by sea level rise, erosion, and flooding.

The country has one of the lowest electrification rates in the world. Approximately 6 million of Sierra Leone's 7.9 million population do not have access to electricity (World Bank, 2020). In urban and peri-urban areas the access rate is 51%, while in rural areas it is just 2%. Electricity access is neither reliable nor affordable, leading to massive and wide-spread theft of electricity.

Energy consumption is dominated by biomass, at approximately 80% of primary energy consumed, while wood fuel and charcoal meet nearly 97% of household cooking needs.

The Government of Sierra Leone (GoSL) seeks to achieve universal energy access (including both electricity and clean cooking) by 2030, of which 60% is expected to come from off-grid solutions. The National Energy Policy and the National Energy Strategic Plan (both 2019) together aim to increase electrification in rural areas and prioritise small-scale decentralized solar power through mini-grids or standalone systems. This is also reflected in the country's Nationally Determined Contribution (NDC), which aims for a 10% reduction of greenhouse gas (GHG) emissions by 2030 and 25% by 2050.

Regarding cooking energy, the GoSL has published the 2020 National Cooking Energy Action Plans (NCEAPs) and has initiated the multi-stakeholder Cleaner Cooking Energy Compact of Sierra Leone.

The realisation of these strategies and policies falls to the following institutions:

- Energy: The Ministry of Energy (MoE)

	<ul style="list-style-type: none"> • Electrification: the Electricity and Water Regulatory Commission (EWRC), which has the mandate to independently regulate the sector but currently lacks capacity • Cooking energy: the Ministry of Health and Sanitation, Environmental Protection Agency in Sierra Leone (EPA). <p>In line with the priorities of the GoSL, EnDev seeks to improve access to electricity and improved / clean cooking technologies for households, link income opportunities with environmental protection, support digitalisation across both sectors, and address RE/cooking energy related investors and entrepreneurs to support related market growth.</p> <p>To reach this objective, EnDev aligns and collaborates with key partners including the World Bank (WB), the World Food Programme (WFP), the European Union, Plan International, and other international organisations and development stakeholders.</p>
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Cooking sector	
<p>Please briefly describe</p> <ol style="list-style-type: none"> 1. the current state of the market based on the ToC for the cooking sector, highlighting key barriers 2. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways: <ul style="list-style-type: none"> ○ Market development (developing a market for energy access technologies – mainly relating to household access) ○ Economic development (productive use) ○ Social Development (access for social institutions) ○ Poverty alleviation (leaving no one behind and including access) 	<p>In Sierra Leone, 98.4% of households rely on biomass for cooking, with the majority use fuelwood (65.4%) followed by charcoal (33%). Access to ICS, higher-tier cooking solutions, and sustainable/clean fuels remains limited. The consumption rate of fuelwood far exceeds the replenishment rate to such an extent that desert encroachment, water scarcity, soil erosion, and soil infertility are now serious problems in the country.</p> <p>Fuelwood is primarily collected by households, while charcoal is informally produced in inefficient earth mound kilns and sold by independent producers. As a result of the informal nature of the business, charcoal prices are only a fraction of energy prices/kwh of other energy sources (e.g., electricity).</p> <p>The cookstove sector in Sierra Leone remains nascent. There is only one major, professional ICS producer with an industrial production facility in Freetown. A limited number of smaller companies are increasingly trying to enter the ICS and alternative-fuel market as well. Individual artisanal producers comprise the largest market share, and produce only small-scale, low-quality (low efficiency and durability) metal charcoal stoves.</p> <p>The major challenges facing the sector include low ability and willingness to pay, low consumer awareness of ICS benefits, limited access to finance for producers, a lack of quality standards or regulations, and a lack of willpower or budget for implementing national policies. Furthermore, women lack the capital and capacity to establish or scale their own businesses. Consequently, 90% of individuals involved in stove production are men.</p> <p>In line with the SDG 7 Cleaner Cooking Energy Compact of Sierra Leone (hereinafter ‘the Compact’), the Cooking Energy Action Plan, and the country’s NDC, EnDev will support the Ministry of Energy (MoE) to establish an effective enabling environment for both the</p>

<p>in refugee settings)</p> <p>The ToC needs to</p>	<p>supply and demand side of the cookstove market. EnDev will strengthen qualified artisanal producers to improve their product standards, overcome finance gaps, and boost business opportunities, and will also provide business development support (BDS) and technical advisory for producers. This aims to support the creation of a conducive environment for the incubation and scaling of businesses in the sector (market development).</p> <p>Lastly, EnDev will contribute to poverty alleviation by implementing user-centred design processes that involve economically disadvantaged (like women and youth (LNOB+) for fuelwood ICS in remote areas and small-scale charcoal briquette production in urban areas.</p>
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Component 2.1 – Cooking Sector Market Development

<p>Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).</p>	<p>EnDev will undertake the following interventions in the cooking sector:</p> <p>Policy advice and capacity development: EnDev will support the MoE to create an effective enabling environment for the cooking sector by supporting the implementation of the Compact. Established in 2021 by the MoE, the Compact provides a foundation for joint action to increase the use of improved and cleaner cookstoves and reduce deforestation across the country. While the Compact has been signed, there has been limited action to enact it; knowledge gaps remain, there's a lack of coordination and engagement among compact members, and no budget has been allocated for implementation. EnDev will therefore lead coordination between key national (like TENN – The Energy Nexus Network of Dr Kandeh Yumkella, clean cooking associations et al) and international actors (like WFP, EU, Plan International et al), including the MoE, and create a coordination unit for joint action. EnDev will also support the development of a digital platform which will publish essential information and studies regarding the cooking energy sector. Lastly, EnDev will advise the MoE on financing options (e.g., international funds, carbon finance) for implementation of the Compact.</p> <p>In addition to the Compact, EnDev will provide policy advice and capacity development towards creating access to more quality and efficient ICS. In coordination with other partners and relevant government bodies, EnDev will support the GoSL to improve standardization of ICS. However, Sierra Leone lacks a functioning test centre, and efficiency testing of ICS is not widespread. EnDev will therefore support the establishment of two rudimentary ICS efficiency testing facilities (ideally, one in Freetown and one in Kenema), which will support entrepreneurs to test and certify their stoves.</p> <p>Evidence, learning transfer, innovation: Interlinked with the information platform (see above), EnDev will also address the lack of relevant market information by encouraging and supporting producers and importers to conduct their own market assessments to improve their product selection through a centralised online system. Cooking energy related innovations are supported (energy efficiency).</p>
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Trainings, BDS: To increase the number of ICS producers operating in Sierra Leone, EnDev will provide tailored trainings and BDS to existing producers as well as those interested in entering the market. This includes support for artisanal producers to grow, professionalise, and produce quality stoves. To address the current lack of diverse ICS designs, product design and innovation capacity will be an integral part of the training.

Already existing producers of quality ICS will be provided with technical support to improve their production in terms of cost efficiency and scale. This will include support for developing locally produced machinery to reduce the high investment costs for industrial-scale ICS production.

There will also be dedicated BDS, trainings, and financial support for economically disadvantaged women (**LNOB+**) to support their participation and empowerment in the ICS sector. Furthermore, EnDev will provide technical assistance to economically disadvantaged women and youth (**LNOB+**) on the production of clay liners and firewood ICS (in rural areas) and charcoal briquette production (in urban areas), thereby increasing livelihoods and improving production quality. The training will include user-centred design processes to increase the number of producers designing and manufacturing quality stoves that reflect customer demand and are therefore widely adopted. This will be implemented also through support Collaboration with suitable partners (e.g., TENN's 'Innovation Hub', TVET colleges, etc.).

Access to Finance: EnDev will pilot an RBF scheme to encourage suppliers to offer affordable, high-quality ICS to rural and remote customers (high transportation cost and lack of distribution channels remains a challenge). Depending upon the success of the pilot, further RBFs will be considered for the next programming cycle.

Partnerships and alliances: A national ICS producer association was established in 2020, with the objectives to harness efforts in clean cooking policy, advocacy for support of the sector, capacity building and access to international funding. However, it has not yet played an active role and lacks support. EnDev will provide moderation and coordination to strengthen the association so that it becomes a functioning body.

Awareness-raising: In close collaboration with producers and both public and private sector actors, EnDev will conduct the following awareness-raising measures:

- Collaborate with ComNet, a radio-network of 50+ stations in rural Sierra Leone, to include remote areas in outreach and awareness programs on ICS for households, businesses, and institutions
- Conduct a marketing campaign with cooking demonstrations to show the advantages of ICS vs. the three-stone fire
- Promote alternative communication channels (e.g. theatre, music presentations) on the subject.

	<p>EnDev will also work jointly with WFP to provide an institutional cooking energy package to schools in the national school feeding program, which is explicitly focused on schools in poorest-of-the-poor settings (LNOB+). This entails: 1) the provision of an institutional improved cookstove (IICS), 2) operations and maintenance training, 3) training on the construction of dry fuelwood storage, 4) training on efficient cooking, and 5) awareness training for school children on efficient cooking and, if possible, community-owned wood replanting.</p> <p>Lastly, to support HTC (which is almost non-existent in Sierra Leone, and its potential unknown) EnDev will first conduct a market study, including feasibility and economic viability of different HTC technologies (e.g., Tier 4 biomass stoves with briquettes, pellets with gasifier, eCooking for rice). The most viable option identified will be piloted in cooperation with partners (e.g., WB). Additionally, there may be a high potential for electric rice cookers and pressure cookers, particularly for restaurants and/or health stations in (mini)- grid connected areas (PUE). EnDev will conduct a feasibility, cost-benefit analysis, and acceptability test in one of its previously installed mini-grids. If positive, EnDev will then support marketing campaigns, advocate for eased import tariffs, and support whole sellers in distributing the e-cookers in the respective areas. Feasibility of PAYG schemes will also be assessed.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>EnDev's activities are based on close collaboration with national and international partners. As the leading agencies responsible for cooking energy, EnDev works with and supports the MoE, the MHS, and the EPA.</p> <p>To implement the Compact, EnDev will work closely with key partners including the MoE, international actors (CCA, WFP, WB, UNDP, Plan International etc.) national partners (TENN, national cookstove producer alliance) and the private sector. To establish product testing facilities, EnDev will collaborate with and support universities as well as the MoE. EnDev will also cooperate with the WB to pilot viable HTC technologies.</p> <p>EnDev will seek alliances with other NGOs, GIZ projects (e.g. the EPP (Employment Promotion Project, the local GIZ health project), or international actors (e.g., UNOPS, EU) that are working on cooking energy, deforestation, health, gender, and/or income-generation topics to leverage experiences and build synergies.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ol style="list-style-type: none"> 1. Financial – is there a viable business case in the absence of the project, or sustained alternative funding? 2. Institutional – is there an enabling 	<p>By working with and strengthening the MoE and other national actors, fortifying the sector association, and driving forward implementation of the Compact, EnDev is strengthening the institutional framework for the cooking sector.</p> <p>The collaboration with the MoE on national quality standards and testing facilities will also contribute to technological sustainability. Negative environmental impacts will be significantly reduced by improving fuel usage and quality, and by implementing circular economy techniques (i.e., supporting production of charcoal briquettes from organic waste) where possible.</p>

<p>environment with supportive institutions?</p> <p>3. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?</p> <p>4. Technological – is technology and know-how for replacement and repair available?</p> <p>5. Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial sustainability will be ensured by building strong business cases together with producers, while engagement with national partners and local communities / groups provide ownership and minimise social tensions.</p>																																
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e. corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <p>i. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>12,150</td> <td>1,350</td> <td>2,400</td> <td>12,150</td> </tr> <tr> <td>SI: Access to cooking</td> <td>102</td> <td>6</td> <td>15</td> <td>102</td> </tr> <tr> <td>PU: Access to cooking</td> <td>50</td> <td>9</td> <td>8</td> <td>50</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input checked="" type="checkbox"/></td> <td>RBF, BDS, technical trainings provided to producers</td> </tr> <tr> <td>Indicator 3.1: improved framework conditions</td> <td><input checked="" type="checkbox"/></td> <td>Government, national, and international partners engage with and implement the Compact. National quality standards implemented. Support for duty-free waivers on ICS products</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td><input checked="" type="checkbox"/></td> <td>Leadership and support for the Compact and sector association</td> </tr> </tbody> </table> <p>Narrative</p> <ul style="list-style-type: none"> EnDev aims to strengthen and expand the ICS market by providing BDS and trainings to producers, financing scaled-up production, and supporting innovation. An RBF will encourage commercial 	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	12,150	1,350	2,400	12,150	SI: Access to cooking	102	6	15	102	PU: Access to cooking	50	9	8	50	Outputs	Applicable	Details	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	RBF, BDS, technical trainings provided to producers	Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Government, national, and international partners engage with and implement the Compact. National quality standards implemented. Support for duty-free waivers on ICS products	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	Leadership and support for the Compact and sector association
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<p>ii. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>markets to expand into rural areas. Awareness-raising will increase consumer knowledge and drive demand.</p> <ul style="list-style-type: none"> • By supporting producers, EnDev will help to develop employment and income opportunities (particularly for women and youth). • By promoting ICS and HTC, deforestation and GHG emissions will be reduced, and health and safety of households improved
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 55% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> HTC: 5% <input checked="" type="checkbox"/> LNOB+: 10%

Electricity sector

<p>Please briefly describe</p> <ul style="list-style-type: none"> • the current state of the market based on the ToC for the electricity sector, highlighting key barriers • how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways: <ul style="list-style-type: none"> ○ Market development (developing a 	<p>The market for off-grid solar (OGS) products in Sierra Leone remains in the pioneering phase. The main barriers to market growth are low profitability (worsened by Covid-19), high import costs, weak distribution channels, limited local production capacity, lack of technical and management expertise, and insufficient infrastructure. Consequently, the price of OGS products remains higher than in other comparable markets. The lack of after-sales service (maintenance and repair) combined with the short lifespans of low-quality products is harming consumer trust and contributing to environmental waste.</p> <p>While the GoSL has published numerous plans to support the sector (see Section 1. above), there is a general absence of effective policies (e.g., implementing quality standards and import control) to support market growth. Meanwhile, the Renewable Energy Association in</p>
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<p>market for energy access technologies – mainly relating to household access)</p> <ul style="list-style-type: none"> ○ Economic development / productive use ○ Social Development ○ Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>Sierra Leone (REASL) exists, but lacks leadership and organization, suffers from discrimination and distrust, and lacks buy-in or awareness regarding its potential benefits.</p> <p>Nonetheless, the market is growing due to significant financial resources invested by international donors and some isolated investors. Public demand for affordable OGS products remains high, especially given the limited extent and severe unreliability of the grid, and the expense of mini-grid connection. However, willingness and ability to invest in quality products remains a significant barrier.</p> <p>EnDev will therefore provide BDS and technical trainings to private companies, utilise an RBF mechanism to extend commercial reach, explore direct financing for acquisition of spare parts, and pilot the creation of nano-grids. EnDev will also provide leadership within REASL to generate buy-in, trust, and awareness, as well as support REASL to conduct awareness-raising campaigns and utilise quality control standards and certification. To support the enabling environment, EnDev will engage stakeholders and host workshops between public and private sectors, and support government agencies to implement policy reform (market development).</p> <p>Additionally, EnDev will facilitate the active participation of women, disabled people, and youth in the OGS sector (LNOB+ and poverty alleviation and focus on electrification of existing social infrastructure (social development)).</p>
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<h3 style="color: #00A68F; margin: 0;">Component 3.1 – Off-Grid Solar Market Development</h3>	
<p>Please describe the modalities (e.g. RBF-mechanism) <u>and</u> key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> ● Training, BDS ● Access to Finance ● Evidence, learning transfer, innovation ● Policy advice and capacity development ● Partnerships and alliances ● Awareness Raising <p>Make sure you describe how activities in the</p>	<p>EnDev's activities in the electrification sector in Sierra Leone aim to promote market development for OGS products and increase energy access overall. The project will focus on the following key interventions to achieve this goal:</p> <p>Training, BDS: EnDev will provide trainings and tailored BDS to companies already active in OGS sector, as well as new market entrants. BDS will focus on business plan development, marketing approaches and communications strategies, access to finance, and improving data quality and sales reporting using digital tools.</p> <p>EnDev will also integrate e-learning tools/platforms and digital apps (e.g., IT4Renewables, RE Connect) within BDS and trainings to promote digitalisation of the sector. Improved data collection and widespread use of digital tools will also increase donor support (EU, WB, USAID, GEAPP, SE4All, etc.), facilitate access to finance, and put political goals into action. Additionally, EnDev will establish a data research/IT training centre (focus on IT4Renewables, GSI data collection and analysis, etc.) specifically for women, youth, and disabled people to facilitate their participation in the OGS sector (LNOB+).</p>

<p>relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes LNOB+ (incl. the target group).</p>	<p>The lack of dedicated sales agents and trained technicians for maintenance and repairs also remains a significant challenge. EnDev will therefore 1) identify and provide trainings for technicians on installation and maintenance to support long-term after-sales servicing, 2) provide a dedicated technical training program for women and disabled people to become sales agents and technicians (LNOB+). This will include a fund specifically for women to afford tuition fees at engineering TVET institutions and support them with internship experience at private companies (LNOB+). This will enable local stakeholders to operate and maintain RE systems effectively, as well as create job opportunities.</p> <p>Access to Finance: Limited access to finance is a significant barrier to market development in Sierra Leone. EnDev will first conduct a need and feasibility study for a potential RBF, then, depending on the measures identified, implement an RBF mechanism to support companies to lower commercial prices and expand their product offering and commercial reach.</p> <p>In addition to trainings for maintenance and repairs, EnDev will explore financing options (e.g., supply-side subsidies (SSS)) to support companies to purchase spare parts. Based on the results of the study, SSS may be considered in the next programming cycle or pursued through co-financing.</p> <p>Evidence, innovation: Solar PV systems in rural / hard-to-reach communities are not fully optimised for maximum electricity output and use, increasing the cost of PV electricity for potential customers. EnDev will therefore pilot the creation of nano-grids, thereby optimising electricity supply and demand schedules and reducing costs for household clusters. EnDev aims to pilot five nano-grids across the country to generate lessons-learned for future implementation at scale.</p> <p>There is a lack of cooperation between national government, local government, and the private sector to establish a maintenance network for existing PV installations (particularly for social institutions (SIs)). EnDev will therefore pilot a Solar Installation Maintenance Structure (SIMS). SIMS is driving the development of a shared maintenance strategy between private sector companies, the MoE, local councils and maintenance service providers. Translated into a national maintenance roadmap, it is targeting financing for maintenance that is dedicated towards existing SIs in two up-country pilot areas (Kenema and Kono).</p> <p>Partnerships and Alliances: EnDev will provide leadership and coordination to strengthen buy-in and trust for the industry association, REASL. This will involve hosting dialogue and workshops with existing members as well as potential members to increase awareness of the benefits of organisation and thereby generate widespread participation.</p>
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	<p>Awareness-Raising: Once strengthened as an association, support will then be provided to REASL to conduct awareness-raising regarding existing OGS technologies and their benefits, product quality and certification, as well as financing options. These campaigns will synergize with EnDev's own awareness-raising (e.g., community-based awareness on sustainability, recycling, climate change, biodiversity preservation, gender equality, etc.), as well as RBF interventions. As a result, willingness to invest in quality products will increase, thereby boosting sales and profitability.</p> <p>Policy advice and capacity development: EnDev will provide policy advice and develop capacities for REASL and the GoSL (i.e., national standards bureau) on the creation and implementation of quality control standards and certification. This will result in the implementation of a nationwide standard and quality certification scheme, along with the requisite government capacity for enforcement and private-sector participation. Going together with awareness-raising, quality certification will raise awareness and build trust among the population, increasing willingness to pay for quality products.</p> <p>To address the high tariffs on RE products, which contributes to higher prices, EnDev will host workshops and engage with stakeholders (e.g., the EWRC) to adjust tariff policies and regulations. The removal of tariffs barriers for OGS will reduce product prices, increase demand, and boost market expansion.</p> <p>These interventions will enable EnDev to promote the development of the OGS sector in Sierra Leone, increase energy access, create job opportunities, and generate income.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Ministry of Energy (MoE) is the primary and official partner for EnDev's interventions in the electrification sector. The MoE's primary responsibility is to formulate and implement policies and projects on energy and provide oversight functions across the entire energy supply chain, including for other government agencies. The EWRC, EPA, and the Ministry of Finance and Development Planning will also be important partners.</p> <p>To provide training programmes, EnDev will work closely with local universities (e.g., Kenema Polytech, Eastern Technical University (ETU)), as well as TENN and the GIZ Employment Promotion Project (EPP) to leverage their past experiences with similar activities. For awareness-raising, EnDev works with regional, tribal, and communal ambassadors.</p> <p>Co-financing from the EU will be pursued to develop PUE technologies on pre-existing mini grids.</p> <p>Additional international partners include UNOPS, the WB, KFW, and EFA.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking</p>	<p>By strengthening private companies and bolstering the sector association (REASL), the component will contribute to the financial sustainability of the sector, independent of donor initiatives.</p>

- into account the following sustainability dimensions:
1. Financial – is there a viable business case in the absence of the project, or sustained alternative funding?
 2. Institutional – is there an enabling environment with supportive institutions?
 3. Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects?
 4. Technological – is technology and know-how for replacement and repair available?
 5. Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided?

What is the exit strategy and/or ideas for follow-up financing?

In every intervention EnDev works to build local ownership at every level possible (legally, socially, and culturally), ensuring social acceptance (**social sustainability**).

Institutional sustainability will be ensured through the close collaboration with the MoE and other government agencies, as well as regional and local governments, councils, or authorities.

The technical trainings and financial support for spare parts will furthermore ensure proper installation, maintenance, and repair (**technological sustainability**).

Finally, by facilitating the use of solar-powered technologies, EnDev will minimise the usage of diesel-driven generators and biomass energy, thereby reducing GHG emissions (**environmental sustainability**).

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e. corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).

Electricity sector: Component 3.1 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025
People: Access to electricity	23,260	3,500	23,260
SI: Access to electricity	234	54	234
PU: Access to electricity	18	8	18

Electricity sector: Component 3.1 – Table 2

Outputs	Applicable	Details
Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	RBF mechanism, BDS and technical trainings boost market share and profitability of scalable companies.
Indicator 3.1: improved framework conditions	<input checked="" type="checkbox"/>	Stakeholder engagement, workshops, and capacity development for government improves framework conditions.

<p>For each indicator, please provide</p> <p>i. the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and</p> <p>ii. the total target for the period until 12/2025 or 06/2024 for PoPs</p> <p>using the “Programming 2023 – 2025” features of the ODM.</p> <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<p>Indicator 3.2: added value of support given to stakeholder networks</p>	<p><input checked="" type="checkbox"/></p>	<p>Support for sector association REASL, implementation of digital tools and web portal for use across networks</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	<p>Approx. 45% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 10%</p>		

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>Ensuring social acceptance (social sustainability) is sometimes a risk, as – especially – PUE is competing with manual labour. EnDev, therefore, includes and considers the existing socio-economic infrastructure in its promotion activities. It considers manual labourers as marginalized groups and looks at utilizing LNOB+ activities and approaches to offset any potential negative impact by always thinking ‘employment options’ through growth induced ‘by access to energy’. Related trainings and programs are offered locally, pre-empting negative socio-economic impacts.</p>
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The risk of a reduced **environmental sustainability** is always given when development is driven by economic growth. The world's current economic growth paradigm is carbon-based and carbon intensive. If, for example, access to SAS allows local fishermen to run refrigerators financed by RBF tools, the technical ability to fish beyond sustenance is established. Unchecked, this can lead to an example of the tragedy of the commons, where all fishermen now take fish out of the rivers for more market sales. Unchecked and dangerously deplete stocks.

To avoid this kind of impact – and especially because an alternative, low-carbon economic paradigm is not easily available and politically supported in the country – growth should always be accompanied by monitoring. EnDev does this by using on-site volunteers that report on economic/social/environmental changes via the EnDev IT tool. Secondly, together with other international players (e.g., the International Growth Center (IGC)), EnDev is further developing its evaluation and monitoring tool by including assessments based on Geostationary Imaging Systems (QGIS), to be able to monitor remotely and over longer periods of time. Even after EnDev exit from Sierra Leone, the local government will have access to local remote monitoring and evaluation. Critical ecological development can be detected early on, and counter measures put in place.

To mitigate risks like the one's described above, we always plan our activities with a feedback cycle by impacted communities through socio-economic engineering in local languages. We have an outreach and information dissemination drive within EnDev that links every intervention to information about the environment and human behaviour in it. For this purpose, we employ a women-youth-theatre group, called the "Eco-Power Girls". Through play and song they link the use of ICS or PV to their original idea of mitigating human impact on nature and showcase the consequences of what happens if we do not.

EnDev has an MoU agreement with a network of more than 50 communal radio stations. They regularly broadcast programs and educational shows on the issue of the environment and the ecology. Through this communication network we try to identify local healers that depend on access to a bio-diverse ecology in their environment and bring them onboard our intervention.

Budget

Please indicate your requested core budget using the table “Budget overview”.

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	2,199,670.76	
	Total estimated budget	2,199,670.76	

20. Tanzania

Acronyms

BCC	Behaviour Change Communication
CCA	Clean Cooking Advocate
CCDF	Clean Cooking Diversification Fund
EAMD	Energy Access Market Development
REA	Rural Energy Agency
GoT	Government of Tanzania
MECS	Modern Energy Cooking Services
REA	Rural Energy Agency
RESPOND	Renewable Energy Services & Products as an Opportunity in National and Displaced Markets Project
TACCS	Tanzania Association of Clean Cooking Stakeholders
TAREA	Tanzania Renewable Energy Association
TREEP AF	Tanzania Rural Electrification Expansion Program Additional Financing
VPO	Vice President's Office

Summary and key data

Promoted technologies	 	ECooking, improved cookstoves
Type of Energy		Biomass
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Tanzania’s approach is market development – expanding the pioneering market in cookstoves for greater access, deeper penetration, and broader service provision with the majority of cookstoves being sold to disadvantaged women. Building on the current EnDev cookstove programming (2013-22), we will:</p> <ul style="list-style-type: none"> • Establish our proven cookstove technical and business development approach to cultivate new producers in two new regions (total regions to reach 20 by 2025) and bring 11 emerging markets to pioneering phases. • Entrench market penetration of quality improved cookstoves (ICS) in three markets from pioneering to expansion phases by refining innovative demand-side behaviour change communication (BCC) strategies paired with results-based financing (RBF) around successful cookstove champions. • Evolve market development towards mature phases in our two most developed regional markets by introducing higher-tier cooking (HTC) options. This includes expanding eCooking efforts with private sector such as PAYGO solar companies through a EUR 50,000 Clean Cooking Diversification Fund, which will provide small milestone-based grants (for market establishment), paired with per unit sales incentives (for initial sales cost relief). <p>Under the enabling environment workstream, EnDev, alongside Tanzania Renewable Energy Association (TAREA), will further representation of MSMEs in the cooking sector in national energy frameworks to localise ICS agendas with the Vice President’s Office (VPO) and newly announced clean cooking initiatives with Ministry of Energy. This includes support to the newly established Tanzania Association of Clean Cooking Stakeholders (TACCS) with stakeholders across the sector including HTC and ICS.</p> <p>EnDev will extend its RBF expertise to the Rural Energy Agency (REA) by providing technical assistance to design solar home system and cookstove RBF components of World Bank Tanzania Rural Electrification Expansion Program Additional Financing (TREP AF).</p>	
Programming period	01.07.2023 - 31.12.2025	Indicative core budget EUR 2,119,782
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)
Approx. thematic budget shares	12%	46.5%

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Cooking / thermal energy for households	909,042 people	21,600	568,466	

Country context

Please briefly outline

1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
2. EnDev's overarching objectives in the markets being supported
3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

Country Context

The Government of Tanzania (GoT) has committed to reduce greenhouse gas emissions by 30-35% by 2030, with energy as one of the priority mitigation sectors (NDC, Tanzania, 2021). Relevant identified energy mitigation actions include:

- Expanding natural gas for power production, cooking, transportation, and thermal services.
- Promoting climate-smart rural electrification, including micro/mini-grid renewable generation.
- Reducing charcoal consumption via affordable alternative energy sources.

Despite these ambitions, Tanzanian families universally rely on biomass for cooking with firewood (60.9%) alongside charcoal (28.8%) recorded in HHs. According to Tanzania's Energy Access Use Situation Survey II of 2020, electrical connectivity (grid or solar) was recorded amongst 36% HHs (68% urban, 19% rural). As such, eCooking is increasingly relevant solution for more urbanised areas of Tanzania with large available market potential given that less 3% of households have been identified as owning modern cooking appliances (MECS, 2022).

EnDev Positioning

EnDev (implemented in Tanzania by SNV) is the leading national program driving cooking sector development and will continue to scale rural and peri-urban access efforts in parallel with new UNIDO, European Union, and SIDA urban cooking projects for alternative fuels and higher-tier stoves. In the 2023-2025 period, we will hone and tailor our supports within regional markets based on the state of local cooking sector development.

Sector Alignment

The transition away from biomass fuels is a key national priority; however, clean products and fuels (LPG, electricity, advanced stoves) require high initial investment (EUR 50-200) that are unaffordable for rural families relative to local cooking alternatives (EUR 2-10). Scaling local ICS for immediate access to efficient options to reduce charcoal/wood consumption is essential while favourable policies and incentives to reduce clean cooking costs are realised.

GoT continues to articulate cooking as a national priority. Recent developments within GoT include a new working group being formed under the Prime Minister and Ministry of Energy with goals to transition 80% of Tanzanians to clean cooking technologies by 2032.

	<p>The VPO will support this effort especially coordinating the biomass cooking sector. With several new clean cooking initiatives launched in 2022 there is a renewed focus on adoption of stove quality standards and active biomass fuel regulation.</p> <p>EnDev will build upon its GoT agreements to broker sector partnerships with lead cooking agencies and develop RBF incentive frameworks with the REA.</p>
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Cooking sector

<p>Please briefly describe</p> <p>a. the current state of the market based on the ToC for the cooking sector, highlighting key barriers</p> <p>b. how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:</p> <ul style="list-style-type: none"> • Market development (developing a market for energy access technologies – mainly relating to household access) • Economic development (productive use) • Social Development (access for social institutions) • Poverty alleviation (leaving no one behind and including access in refugee settings) <p>The ToC needs to be submitted in a separate excel file based on the respective template.</p>	<p>EnDev Tanzania’s approach is market development – expanding the pioneering market in cookstoves to greater access, deeper penetration, and broader service provision cookstoves available to disadvantaged women (65% of sales). EnDev Tanzania envisages a number of local ICS producers in higher population density areas to grow to semi-industrial scale, achieving production volumes beyond 1,000 units per month and offering a diverse range of stoves for different income strata of the population. Modern and clean cooking solutions are expected to further their market reach from main urban centres to wider peri-urban and rural small-town markets as consumer demand for clean cooking is triggered as a personal development priority through BCC campaigns.</p> <p>Market Development: EnDev will increase focus on scaling ICS product quality relative to national standards and enhance brand identity, foreseen as a precursor to quantitative scaling for semi-industrial ICS producers. The 3Es approach (Establish, Entrench, Evolve) does this through targeted market-level driven intervention packages, which look to tailor technical and business development support based on the market transition taking place (e.g. from pioneering to expansion phases of market development).</p> <p>As cooking markets develop, we will build upon a national ICS platform with the government and TAREA, which was established in 2019-2021 and has contributed to the endorsement by the President of Tanzania to a national campaign and working group for clean cooking announced in November 2022. EnDev will strengthen the capacity and coordination amongst lead agencies in the VPO, Ministry of Energy and REA to develop tangible and practical incentives to advance improved and clean cooking in Tanzania. In general, enabling environment work will need to be adapted to the ongoing realignment in the cooking space with the President’s clean cooking initiative initiated in 2022.</p> <p>Poverty Alleviation: Stoves are produced and sold by local enterprises with a strong emphasis on developing women-led businesses. Cooking solutions availed are intended to be affordable for the majority of Tanzanians with quality ICS options available for as a little as EUR 2. This enables the programme to viably place the cost and time saving benefits of ICS access within reach of the most vulnerable of rural markets, including refugee hosting communities of Kigoma region, ensuring a leave no one behind (LNOB) approach.</p>
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Cooking sector: Component 2.1 – The 3E’s - Cooking Market Development

Please describe the modalities (e.g. RBF-mechanism) and key interventions / activities (e.g. behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- Training, BDS
- Access to Finance
- Evidence, learning transfer, innovation
- Policy advice and capacity development
- Partnerships and alliances
- Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).

EnDev will tailor regional cookstove market development through successive stages of the EnDev Energy Access Market Development (EAMD) framework, taking local markets from pioneering through expansion stages. The program will deepen its penetration in established markets to broaden production and distribution for improved access to affordable and quality cooking solutions for rural families.

EnDev will expand the roster of quality ICS producers with up to 25 new local producer intakes to sustain a national roster of 120 enterprises (50% women-led) operating throughout mainland Tanzania, which will collectively disseminate upwards of 150,000 cookstoves annually by the close of 2025. EnDev will continue to hone its market development goals throughout 20 regions of mainland Tanzania with three distinct approaches relative to states of regional energy access market development (Establish, Entrench and Evolve).

1. Establish our proven cookstove technical and business development approach to cultivate new producers in 2 new regions (from 18 regions in 2022 to 20 regions by 2025) and bring 11 emerging markets to pioneering phases. The programme works to develop markets from their earliest inception with a focus towards the development of pre-commercial cookstove producers who are supported to accelerate the transition of high performers to pioneering commercial enterprises.

Planned Activities: The cooking component works with local enterprises to develop the ‘Jiko Matawi’ – a multi-purpose ICS capable of using both firewood and charcoal, depending on the preference of the user. The programme nurtures entrepreneurs through successive stages to develop rural markets for introduction of the Jiko Matawi via the 5Is approach (See Table 1). The approach includes five stages of programme supports that combine technical and BDS training, paired with access to non-monetised performance incentives. The entry level ceramic stove is affordable to the poorest of the poor (typically disadvantaged women).

Table 1: Improved Cooking Market Establishment - 5Is approach	
Identification	Delivery of Market Intelligence to gauge supply and demand side dynamics;
Initiation	Stove camp training with artisans in Matawi production, costing, design refinement and initial marketing methods;
Incubation	Local supply chain relation building and onsite ICS enterprise coaching paired with the introduction of non-monetary performance incentives in the form of small production tooling-equipment and marketing tool supports (typically less than <200 EUR);
Investment	Emerging Champions are identified and availed access to individualized business development, marketing, and a medium sized one-time investment to assist production scaling (larger equipment, production site modernization <500 EUR);
Independence	Entrepreneur-led marketing supports stimulating market chain expansion.

2. Entrench market penetration of quality ICSs in three additional markets (from three in 2022 to six in 2025) from pioneering to expansion phases. As establishment approaches phase out, the programme will begin the roll out of innovative demand-side supports to further stimulate the market, along with shifting RBF supports from

smaller ticket, non-monetary supports to larger ticket items amongst Champion-level producers scaling their operations towards semi-industrial production levels.

Planned Activities: The programme focuses activities on markets where there is demonstrated ability to meet market demand peaks amongst Champions with strong potentials for consumer market engagement (high population density, general positive economic trends, etc). In these regions, high-density market district 'hubs' and local ward level (3-6 villages) market 'nodes' are identified for delivering demand-side BCC strategies promoting clean cooking products and practices at community event and door-to-door household awareness raising.

Demand stimulation delivered by community-driven BCC campaigns in market nodes is led by Clean Cooking Advocates (CCAs), who enable adoption of ICS through promotion of cooking, health, nutrition, and environmental practices. The programme will scale the messaging of BCC throughout the wider market hub by further employing social media video messaging and radio, in parallel with distribution capacity building of CCAs to wider market extents.

As the demand for cooking products increases, the programme will mature its RBF for select cookstove Champions via access to higher ticket items necessary to scale stove production. With support of EnDev and local consultants, select Champions will develop a 3-year growth plan intended to focus their scaling efforts and as a condition to apply for kickstarting financing in the form of a one-time larger ticket item of <2,000 EUR (facility upgrades, machining, etc).

Initial market testing of Entrench activities by EnDev in 2020-21 have been positive with producer growth of 30-50% per annum relative to their previous year's sales or that of the comparable market controls.

3. Evolve market development in the two most developed regional markets by conclusion of the programme in 2025. As these markets mature in the Entrench approach, the programme aims to diversify access to modern cooking options and strengthen national sector development.

Planned Activities: EnDev will integrate the promotion of eCooking products (rice cookers, multi-cookers, infrared and induction stove, electric pressure cookers) into maturing peri-urban and rural cooking markets through diversification of retail channels with EnDev energy partners in the private sector with established sales-distribution and/or consumer financing mechanisms, such as select PAYGO solar companies with subscriber segments using solar home systems as a grid back up. A total of EUR 50,000 will be made available in a Clean Cooking Diversification Fund providing small, milestone-based grants (for seeding new eCooking ventures)), paired with per unit sales incentives. The grant-based component will provide financing for the introduction of eCooking product lines (such marketing supports, demonstration activities, consumer product testing, etc) paid upon completion of tangible deliverables. Subsequent sales based

incentives will enable end price relief to consumers and accelerate roll out of newly introduced eCooking products. As a whole, the CCDF intends to overcome initial cost barriers to introducing new product lines amongst private sector players with established reach and active consumer networks. Market assessment, product eligibility and design of the fund will be done in 2023, initial roll out to companies intended begin 2024.

EnDev will further representation of MSMEs in the cooking sector in national energy frameworks to localise ICS agendas with VPO and newly announced clean cooking initiatives with Ministry of Energy. TAREA and TACCS will advocate to increase private-public engagement in the cooking sector and leverage the high potential to substantially scale the availability of quality products in the country. In particular, the programme will work with VPO and PO-RALG to initiate articulation of realistic enforcement of the newly developed national ICS standard (gazetted by Tanzania National Bureau of Standards, 2020) at local government and enterprise levels. In parallel, EnDev will support the REA to develop national RBF programming in electrification and cooking, with specific aims to facilitate local access to finance for greater inclusion of MSMEs and vulnerable, rural customer segments.

EnDev will explore the use of carbon credits derived from ICS sales in BCC intervention areas. The carbon credits secured should benefit project beneficiaries (customers and associated sales parties) with an agreed balance re-invested in the project to expand BCC components in new areas of Entrench markets for accelerating their maturity to Evolve status.

		Establish		Entrench		Evolve	
State of Market	MSME Orientation	Individual	Micro-Enterprise	Small Enterprise	Family Enterprise	Small Industrial	Med. Industrial
	EAMD Phase	Pre-Commercial		Pioneering		Expansion	
Avg. Market Sales / Month		<1,000		>2,000		>5,000	
Market Supports	Supply Side	Starter Materials	Results Based Incentives (RBI) (Non-Monetary Incent.)	Champion (TA + Asset)	Results Based Financing (RBF) (Monetary Incentives)	RBF Phase Out	RBI E-Cooking
	Demand Side	General Promo Materials (Fliers, etc)	Agent Match Making	Tailored Branding	Behaviour Change Communication (BCC)	BCC expansion E-Cooking	
	Enabling Environment	Localizing Standards (Producer Norms)	Localizing Reg. (LGAs)	Nat'l Multi-Stakeholder Collaboration Regulatory Advisory		Nat'l Multi-Stakeholder Collaboration - Policy Advisory	
Modalities	Primary	Training (Technical, BDS)		Evidence-Innovation - Demand Stimulation (BCC)		Evidence-Innovation (E-cook)	
	Secondary	Access to Finance (Non-Monetary)		Access to Finance (Monetary, BDS)		Policy Advice-Capacity Development	

Please highlight how the project cooperates and / or collaborates with local and international actors under this component to

- implement or complement activities,
- leverage additional impacts, financing (incl. co-financing), etc., and / or

EnDev works with a roster of rural-focused enterprises consisting of ~120 local stove makers who collectively disseminate +10,000 EnDev-ICSs/month. Half the roster and results are via women-led enterprises. 40 enterprises are at “Champion” status (100+ sales/month) – 13 of these are ‘select’ Champions with potential of >500 monthly sales eligible to access larger ticket items through Evolve market supports.

Resources leveraged increase rural economic activity and create local jobs as enterprises scale. However, the sector’s informal nature limits formal finance reach. As such, the project complements urban, commercially oriented finance of donors (e.g. EU, SIDA). The project

<ul style="list-style-type: none"> support interconnections with other sectors. 	<p>will work with TAREA and GoT to increase coordination and alignment of different initiatives.</p> <p>EnDev will support REA to develop locally inclusive RBFs in electrification and cooking under the WB TREEP AF.</p> <p>Since the 2020 close of the RESPOND project for clean energy in host-refugee communities of Kigoma, support to 16 ICS enterprises (6 women-led) continues via EnDev.</p>										
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> Financial – is there a viable business case in the absence of the project, or sustained alternative funding? Institutional – is there an enabling environment with supportive institutions? Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? Technological – is technology and know-how for replacement and repair available? Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial: EnDev scales existing enterprises for inherent financial viability. Incentives are earned upon verified delivery to ensure recipients are capable to invest.</p> <p>Institutional: Capacity building for TAREA leaves an entity to sustain public-private coordination. EnDev develops market awareness of GoT-led cooking agencies. GoT has requested EnDev to institutionalize performance financing expertise with REA.</p> <p>Ecological: ICSs use locally sourced ceramics that can be disposed in soils. Metal materials can be recycled via local collection services. ECooking suppliers are vetted to have component take-back schemes. EnDev cooperates with GoT on e-waste management.</p> <p>Technological: Enterprises are rural-localised to ensure replace-repair services near users. TAREA supports ICS quality assurance with the Bureau of Standards. ECooking complies with (inter)national standards and after-sales warranties.</p> <p>Social: EnDev improves perceptions of women-led enterprises within HHs and the community. Demand-side works engender behaviour change for health and environment. Both measures demonstrate to partners that gender is central to unlocking sustainable development benefits.</p> <p>Exit & Handover Strategy: Results are self-driven by enterprises. Demand and enabling measures build upon existing dynamics. Incentives are time-bound to stimulate first-movers and decline in value as profitability increases.</p>										
<p>Please use table 1 to provide an overview of the component's outcomes, using "adjusted numbers" (i.e. corrected for sustainability, attribution, and additionality).</p>	<p>Cooking sector: Component 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>909,042</td> <td>21,600</td> <td>568,466</td> <td>2,101,096</td> </tr> </tbody> </table> <p>Cooking sector: Component 2.1 – Table 2</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	909,042	21,600	568,466	2,101,096
Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025							
People: Access to cooking	909,042	21,600	568,466	2,101,096							

<p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e. until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e. capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	<table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 1.1: + 25% customers empowered to make investment decisions</td> <td><input checked="" type="checkbox"/></td> <td>Baseline completed in 2022, BCC intervention for treatment area to begin in 2023.</td> </tr> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td><input checked="" type="checkbox"/></td> <td>Scalable companies identified in 2022, growth is on pace to target.</td> </tr> </tbody> </table>	Outputs	Applicable	Details	Indicator 1.1: + 25% customers empowered to make investment decisions	<input checked="" type="checkbox"/>	Baseline completed in 2022, BCC intervention for treatment area to begin in 2023.	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Scalable companies identified in 2022, growth is on pace to target.
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Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	Scalable companies identified in 2022, growth is on pace to target.								
<p>Narrative</p> <p>LNOB+ Displacement (6.2% total sales): Sales from Kigoma Region based in host and refugee communities. All activities in this region have been absorbed by EnDev upon the closure of the humanitarian focused RESPOND project.</p> <p>LNOB+ Poorest of the Poor (40.3% total sales): The project is explicitly oriented towards ensuring opportunity development for rural enterprises to provide affordable improved cooking options to rural consumers.</p> <p>Measures for extent of poverty reach of the project are based on comparable market research conducted by 60 Decibels of solar company sales using a similar a village level female agent model and with products at a similar price range (entry level lanterns, task lights @ 5-15 EUR). Activity of solar company overlaps that of cooking program.</p> <p>Lean Data inclusivity measures benchmarking consumer income v. PPI indicate 77% of customers below general poverty level (\$3.20) and 43% of customers below extreme poverty level (\$1.90). This measure reach of the project to segments in extreme poverty (43%) are applied to the balance of total sales after accounting for LNOB displacement.</p> <p>HTC: Evolve market activities include expanding eCooking efforts with private sector including PAYGO solar companies through a EUR 50,000 Cooking Diversification Fund that will incentivise the sale of 4,000 eCooking devices in the period for an average incentive price of 12.50 per unit.</p> <p>Climate impacts: based on previous EnDev phases, CO2 avoided estimate/stove (average replacing wood/charcoal alternative) is 0.75 tCO2e.</p>										
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p>	<p>Approx. 58.5% of total budget</p> <p>Approx contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> HTC: 12%</p> <p><input checked="" type="checkbox"/> LNOB+: 46.5%</p> <p>Budget shares across the program are consistent to the LNOB+ considerations outlined above.</p>									

<p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	
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Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize or mitigate these risks?</p>	<p>The project works to increase decision-making power and control of resources for advancing female leadership as socially accepted business owners and operators by employing EnDev’s PALS and BCC methodologies. In partnership with ENERGIA in 2021-22, EnDev implemented its Gender Action Plan, including a gender value chain assessment, revamping BDS materials from a gender lens, involving men in the CCA programme and creating gender goals for the TACCS.</p> <p>All EnDev partners, including stove enterprises, are vetted and formally obliged to comply with safeguarding requirements for the prevention of child labour, discrimination, sexual harassment, trafficking and environmental protection. Amongst informal ICS enterprises, the program introduces relevant safeguarding elements during core training components.</p> <p>Environmental risk due to e-waste are managed via requirements for aftersales supports (takeback/refurbishment schemes, etc.) by larger commercial eCooking suppliers. E-waste policy will also be explored by TAREA towards developing an advocacy strategy within their enabling environment work.</p> <p>An Integrated Peace and Conflict Analysis (iPCA) has been performed for EnDev Tanzania by a global consultant. The iPCA defines the main factors of conflict, fragility and violence in the country affecting the project and its mitigation measures, external risks, and impacts observed in planning and implementation.</p>
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Budget

<p>Please indicate your requested core budget using the table “Budget overview”.</p> <p>Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing”.</p>	<p>Final budget for project period incl. co-financing</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #00a68f; color: white;"> <th style="width: 5%;">#</th> <th style="width: 45%;">Donor</th> <th style="width: 15%;">EUR</th> <th style="width: 35%;">Brief description of co-financing (max. 200 characters w/o spaces)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Core-budget (c.f. quotation price above)</td> <td style="text-align: right;">2,119,782</td> <td></td> </tr> <tr style="background-color: #00a68f; color: white;"> <td></td> <td>Total estimated budget</td> <td style="text-align: right;">2,119,782</td> <td></td> </tr> </tbody> </table>	#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)	1	Core-budget (c.f. quotation price above)	2,119,782			Total estimated budget	2,119,782	
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1	Core-budget (c.f. quotation price above)	2,119,782											
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21. Uganda

Acronyms

ABC	Africa Biodigester Component
ACE	Africa Clean Energy
ARE	Alliance for Rural Electrification
BCC	Behavioural Change Campaigns
BDS	Business Development Support
BGFA	Beyond the Grid Fund for Africa
CCA	Clean Cooking Alliance
CLASP	Collaborative Labelling and Appliance Standards Programme
COGS	Cost of Goods Sold
CRRF	Comprehensive Refugee Response Framework
DP	Development Partner
DSS	Demand Side Subsidy
EASP	Energy Access Scale Up Programme
EE	Enabling Environment
EEC	Energy Enterprise Coach
EOI	Expression of Interest
ESDS	Energy Solutions for Displacement Settings
ESMAP	Energy Sector Management Assistance Programme
GAP	Gender Action Plan
GCR	Global Compact on Refugees
GDC	Global Distributors Collective
GHG	Greenhouse Gas Emissions
GIZ	Gesellschaft für Internationale Zusammenarbeit
GONGLA	Global Off-Grid Lighting Association
GoU	Government of Uganda
GPA	Global Platform for Action
HH	Household
HTC	Higher Tier Cooking
HTCC	Higher Tier Cooking Component
ICS	Improved Cookstoves
IEC	International Electrotechnical Commission
IKEA-F	Ikea Foundation
IP	Implementing Partner
LNOB	Leave No-one Behind
MECS	Modern Energy Cooking Services
MEMD	Ministry of Energy and Mineral Development
MWE	Ministry of Water and Environment
OGS	Off Grid Solar
OPM	Office of the Prime Minister
PAYG	Pay-as-you-go
PUE	Productive Use of Energy
PV	Photovoltaic
REP Fund	Refugee Environmental Protection Fund
REA	Rural Electrification Agency
SCI	Save the Children International
SGBV	Sexual Gender Based Violence
SHS	Solar Home Systems
SIs	Social Institutions

SEFFA	Sustainable Energy for Smallholder Farmers Programme
SEforALL	Sustainable Energy for All
SERP	Sustainable Energy Response Plan for Refugees and Host Communities
SNV	Netherlands Development Organisation
UECCC	Uganda Energy Credit Capitalization Company
UEF	Universal Energy Facility
UNACC	Uganda National Alliance on Clean Cooking
UNBS	Uganda National Bureau of Standard
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugee
VSLA	Village Savings and Loan Associations
WorkGrEEEn	Working Group on Energy and Environment for Refugee and Host Community Population
ZOA	Dutch translation of South-East Asia
UNCDF	United Nations Capital Development Fund

Summary and key data

Promoted technologies		SHS, improved cookstoves, eCooking
Type of Energy		Solar, biomass
<p>Summary of proposed intervention(s)</p> <p>Please describe your impact, the overall objective, and the key interventions i.e.:</p> <ul style="list-style-type: none"> • Training, BDS • Access to Finance • Evidence, learning transfer, innovation • Policy advice and capacity development • Partnerships and alliances • Awareness Raising 	<p>EnDev Uganda’s objective is to increase access to reliable, affordable, and modern cooking energy (incl. higher tier cooking) and solar PV technologies for PUE beneficiaries, social institutions and households while ensuring no one is left behind incl. refugees & host communities. The planned interventions contribute to EnDev’s impact areas, Energising Lives (Area 1), Energising Opportunities (Area 2), and Energising Climate (Area 3).</p> <p>a. Training BDS EnDev will support RE companies through training and BDS (both cooking and solar) to improve business operations, increase investment readiness and resilience while also targeting female headed RE companies (solar) as well as HH/PUE beneficiaries (cooking).</p> <p>b. Access to Finance EnDev Uganda will launch a joint Results-Based Finance Facility for cooking and solar energy. Through this facility, RE sales will be facilitated across different product technologies, tier categories, and beneficiary targets.</p> <p>c. Evidence Learning Through knowledge sharing (e.g., eCooking pilot, demand side subsidy pilot, market intelligence) and exchange EnDev will continue contributing to communities of practice, working groups and sector coordination groups (including the humanitarian-energy nexus).</p> <p>d. Policy Advice EnDev will continue to promote the enabling environment through concerted input, together with the GIZ Energy and Climate Programme, into key policies and strategies (integrating humanitarian-based services). EnDev, will also support sector association to improve policy advocacy, gender equity, resource mobilization efforts, service delivery to private sector members.</p> <p>e. Partnerships EnDev Uganda will continue to build and strengthen strategic partnerships and alliances with sector networks, sector associations (national and global), other EnDev countries, development partners, government, and global energy coalitions.</p> <p>f. Awareness raising Through cooperation with the GIZ Energy and Climate Programme, the private sector, and associations as well as the Ministry of Energy and Mineral Development (MEMD), EnDev will continue to support gender sensitive awareness activities coupled with market activations/exhibition, highlighting benefits, applications, product availability and consumer financing options.</p>	

Programming period	01.07.2023 – 31.12.2025	Indicative core budget	EUR 3,200,391
	Higher tier cooking (HTC)	Leave no one behind (LNOB+)	
Approx. thematic budget shares	14.27%	36.62%	

Outcomes	Targets 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Further relevant results / indicators
Energy for lighting / electrical appliances in households	3,601 people	N/A	3,601	Through component 3.2; LNOB+ focused on refugees & host communities as well as gender
Cooking / thermal energy for households	46,669 people	2,652	1,800	Through component 2.1 & 2.2 including HTC & LNOB+ focused on refugees & host communities as well as gender
Electricity and/or cooking / thermal energy for social infrastructure	169 SIs	0	0	Through component 3.1
Electricity and/or cooking / thermal energy for productive use / income generation	566 MSMEs	0	48	Through component 2.1, 3.1 & 3.2; LNOB+ focused on refugees & host communities as well as gender

Country context

Please briefly outline

1. the country context (i.e. state of energy access; relevant overarching policies, strategies, and targets (incl. NDC targets); most important national partners; and main development partners working in the sector)
2. EnDev's overarching objectives in the markets being supported
3. EnDev's alignment with national policies and activities of key actors in the sector (incl. overarching collaborations)

Country Context

Uganda is a landlocked country in Eastern Africa, with a population of 47.2 million (3.6% annual growth), majorly living in rural areas. Uganda is also host to over 1.5 million refugees. The national electricity access rate is currently at 42%⁸¹. Rates are lower for rural areas and refugee settlements, where lack of access to electricity remains a major barrier to the socio-economic development. Although solar PV solutions are considered substantial for Uganda's universal energy access (outlined in Vision 2040-The National Development Plan III 2020/21-2024/5), uptake is hindered by lack of awareness, affordability & availability of high-quality products, especially in hard-to-reach rural regions. Regarding cooking energy, the sector has long relied on biomass (94%) as the primary source of energy, which has resulted in forest cover loss and increased vulnerability to climate change impacts. Efforts to shift towards alternative fuels and other cooking technologies are still in its infancy. The Government of Uganda (GoU) has established several national strategies/policies to address issues on energy access and climate change:

⁸¹ This figure includes electrification rates facilitated by the grid and by off grid solar solutions. It is also notable that there are other sources suggesting that the electrification rate is higher (56%), however it is not clear how these sources define access

The Energy Policy⁸² (2002 under revision); the Renewable Energy Policy (2007)⁸³, the National Climate Change Act (2021)⁸⁴ as well as the updated NDCs, that identify the energy sector as key regarding adaptation and mitigation measures (with the goal to increase the share of clean cooking technologies to 65% in 2035 and promote off grid solar solution with targets to be still defined).

Streamlining these policies/strategies depends on the GoU; MEMD, the Climate Change Department in MWE. National sector associations, as USEA, UNBS, UNACCC, UNREEEA (umbrella organisation) and the newly established NREP (under MEMD for optimising coordination) play a significant role for advocacy, market development, of the solar and cooking energy sectors.

There are several other national as well as international key actors and national players in the energy access space such as, OPM, UECCC, EASP, World Bank, CLASP, ESMAP, AVSI, USAID/Power Africa, SNV, BGFA, UNHCR, UNCDF, UNDP and the GIZ Energy and Climate Programme.

Overarching Objectives

EnDev Uganda aims to increase access to reliable, affordable, and modern cooking energy (incl. higher tier cooking) and solar PV technologies for PUE beneficiaries, social institutions, and households. Overall, the interventions seek to promote market penetration, awareness, and an enabling environment while at the same time ensuring that no one is left behind (LNOB+ - also considering priorities of EnDev's Gender Strategy).

Alignment with national policies and activities

EnDev Uganda is embedded in the GIZ Energy and Climate Programme with MEMD as the main political and implementation partner. EnDev cooperates closely with MEMD and has contributed for example to the draft Energy Policy. EnDev also works closely with GIZ ESDS, that supported the development of the SERP⁸⁵ aiming to aid the implementation of refugee emergency response and align it with long term interventions. EnDev also aligns activities with current NDC targets and has collaborated with the GIZ Global Carbon Markets Project to explore carbon financing options for solar and cooking energy. Moreover, EnDev coordinates with all DPs and stakeholders and related projects mentioned in section 0 and engages in donor coordination groups for energy and climate change.

⁸² Energy Policy (2002) aiming at meeting energy needs of the population for social and economic development in a sustainable manner

⁸³ Renewable Energy Policy (2007), with the goal to increase the use of modern renewable energy

⁸⁴ National Climate Change Act (2021) provides for coordination of climate change response measures

⁸⁵ Sustainable Energy Response Plan for Refugees and Host Communities- With funding from the German Federal Ministry of Economic Cooperation and Development (BMZ)

Cooking sector

- Please briefly describe
- the current state of the market based on the ToC for the cooking sector, highlighting key barriers
 - how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:
 - Market development** (developing a market for energy access technologies – mainly relating to household access)
 - Economic development** (productive use)
 - Social Development** (access for social institutions)
 - Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template

Cooking Sector (HH ICS)

The sector is in the expansion phase with variables in pioneering. The [COVID-19 pandemic had significant impacts](#) on market indicators that were previously in positive trends, including business models, after sales service and market penetration. Markets provide low-quality ICS, with growing share of semi-industrially produced HH stoves, including PUE models and efficient higher-tier cooking technologies (mostly imported, available in central Uganda). Awareness on benefits of clean cooking technologies (especially higher tier) is still needed. Companies have a significant need to professionalise business operations, production capacity, formalisation, compliance, and upscale potential to be investment ready. More efforts are needed to improve standards enforcement, sustainable financing mechanisms and incentivizing private sector growth to strengthen the clean cooking sector. Ministries and sector associations will continue to play a crucial role in streamlining policy frameworks.

In contrast, the eCooking (and advanced biomass ICS) sector is still in pre-commercial phase. Pilots for [market assessments](#), [research](#), design and innovation, and end-user asset financing models aim to improve perceptions, supply, [awareness](#), and [framework conditions](#). Efficient cooking is included in key policy documents, e.g., MEMD is currently developing an eCooking strategy.

Transformative Character:

a. Market development: Interventions aim to increase the number of formalized, semi-industrial cookstove companies in the market that upscale sales and production for HH (incl. HTC – specifically eCooking and advanced biomass ICS) and PUE ICS through market development and private sector support (i.e. RBF), improvement of strategic planning and investment readiness via tailored BDS support, enhancing compliance to UNBS Standards to ensure adoption of high-quality ICS, policy advisory support to ministries and sector bodies. Both support streams will include HTC companies and would be complementary to HTCC activities through e.g., joint stakeholder scoping, market assessments, gender support, tender/EOI calls for identifying suitable partners, etc.

b. Economic Development: Companies distributing PUE stoves will be contributing to energy access for income generation and employment, with a special focus on women through the technician training for maintenance and repairs, (including HTC + LNOB+), incentivizing companies to hire and train female staff across all operations, including in refugee and host communities.

c. Social Development: The GAP informs gender responsive planning and implementation to improve health and welfare, dignity, safety, time saving, employment (incl. incentives for female headed HHs, HTC companies, and PUE beneficiaries), to empower them by strengthening their capabilities and skills.

d. Poverty Alleviation: Despite the market-based approach of activities, there is a strong focus on LNOB, by using methods reducing burdens of marginalized female-headed HHs, including refugees.

Cooking sector: Component 2.1 – Cooking Energy

Please describe the modalities (e.g., RBF-mechanism) and key interventions / activities (e.g., behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- 1 Training, BDS
- 2 Access to Finance
- 3 Evidence, learning transfer, innovation
- 4 Policy advice and capacity development
- 5 Partnerships and alliances
- 6 Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).

- a. **Access to Finance:** EnDev will provide flexible and market responsive financing to ICS companies to enhance their distribution outreach and their production infrastructure through performance-based partnerships which focus on effectiveness and cost efficiency by providing support linked to verifiable results or priority activities to achieve upscaling.

Based on learnings from the previous phase, EnDev Uganda will launch one joint Results-Based Finance Facility combining targets for Component 2.1 Cooking Energy and 3.1 Solar Energy. Through this facility, several companies will be able to take part across different product technologies, tier categories (incl. HTC technologies), and beneficiary targets, via potentially rolling application windows for solar and cooking. EnDev will hire a Fund Manager to steer the company application process, manage the project implementation and incentive disbursement process, and coordinate submission of partner sales reports to EnDev. This will streamline RBF project management based on lessons learned and best practices from the same approach used for the COVID-19 Economic Relief Fund and the USAID Last Mile RBF. Through the partnerships, ICS/HTC companies will receive top-up incentives, with potentially strategic technical assistance that can be used to close production, sales, or marketing operations gaps to considerably and sustainably upscale business operations through creation of lasting production and distribution structures and the activation of markets. These partnerships are designed specifically to improve product offers, after-sales services, as well as distribution and awareness outreach and leverage HTCC synergies where applicable which also includes RBFs, Innovation Challenge Fund, government capacity building etc. (Contributes to **Output 2.1**).

- b. **BDS, Training:** Through targeted training, EnDev will support cookstove companies (both ICS and HTC) to improve business operations and structures, increase investment readiness as well as build resilience for sustainable growth, including supporting the companies to effectively target female-headed PUE beneficiaries and HHs. The BDS support will be implemented jointly with Component 3.1 Solar Energy, with both components also considering refugee settings, as well as building on experience from successful BDS implementation in the current EnDev phase.

In addition, EnDev plans to cooperate with the Green People's Energy (GBE) Small Project Fund recipient, the [Tukole Project](#) or a similar provider) for training and building a catalogue of technicians to repair and maintain higher-tier stoves (including support for training of female technicians and agents as per EnDev cooking GAP) (**Output 3.2**). RE enterprise staff capacity building for HTC SMEs could also be potentially combined/leveraged with Energy Enterprise Coach [EEC] under [Higher Tier Clean Cooking, HTCC](#) with CLASP – for Tier 3+ eCooking and advanced biomass cookstoves

- c. **Policy advice and capacity development:** EnDev will continue to cooperate with MEMD and key actors on strategic advisory support for sector policies e.g., development of eCooking (with MECS) and biogas strategy – both contributing to favourable HTC enabling environment, as well as supporting associations to improve effectiveness of awareness, policy advocacy, gender equity – linked to EnDev Cooking GAP (**Output 3.2**), resource mobilization efforts, service delivery to private sector members to ensure more sustained growth in the sector, with better knowledge management for potential investment and strategic partnerships (government capacity building and sector coordination support are also supported under HTCC, and the [Africa Biodigester Component](#) and will complement HTC related advocacy under Classic.
- d. **Evidence, learning transfer, innovation:** EnDev will share lessons learned from the on-going eCooking pilot through key knowledge products with regional/global implementers to inform the HTC Classic interventions, as well as contribute to the HTCC project with CLASP and ABC project. This will feed into the wider Community of Practice on clean and higher-tier cooking e.g., cooperation with MEMD to exchange on EnDev eCooking baseline findings for evidence advocacy under the eCooking strategy development, through Innovation/Challenge Fund EOIs, collaboration with Academic Institutions such as EALP under ABC, BDS Impact results, etc. Planned capacity building for RE companies on energy and climate nexus (incl. HTC) will contribute to knowledge base for accessing carbon financing through the GIZ Energy and Climate Programme. Higher tier supply chain interventions including construction of the first manufacturing facility ([ACE](#)) and supply chain setup under the Innovation Window eCooking pilot can showcase best practices to key sector players. All interventions will inform upscale potential of HTC.
- e. **Awareness Raising:** Through cooperation with sector associations and MEMD, MECS and Umeme (eCooking awareness), CCA User Insights Lab, etc. EnDev will continue to support awareness activities including participating/nominating partners for radio talk shows/panels to disseminate/discuss key thematic energy topics, link EnDev stove company partners to planned forums and market activations/exhibition opportunities

	<p>to conduct product demonstrations and penetrate new markets (incl. for HTC companies/beneficiaries).</p> <p>f. Partnerships and Alliances: Through strategic cooperation with sector associations and other national partners e.g., NREP, UECCC, Academic Institutions, energy implementers, and global energy coalitions e.g., CLASP, MECS, ESMAP, GET. Invest, Alliance for Rural Electrification, Global Distributors Collective, Clean Cooking Alliance, among others – EnDev can inform project approaches, contribute to studies, publications, and plenary discussions, as well as share to energy networks for key funding/innovation/collaboration opportunities (incl. for HTC).</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Implementation:</p> <ul style="list-style-type: none"> • Activities are aligned with MEMD, GoU policies, and NDCs. • Collaboration with the GIZ Energy and Climate Programme contributes to updating policies/strategies ensuring that clean cooking, market development is well reflected. Collaboration with the GIZ Energy and Climate Programme contributes to updating policies/strategies ensuring that clean cooking, market development is well-reflected. <p>Impacts, financing:</p> <ul style="list-style-type: none"> • Advancing market intelligence on eCooking, in cooperation with MECS through the RVO-EnDev Innovation Window (2022; EUR 250K) and eCooking and advanced biomass SME pipeline development with CLASP under HTCC (2023-25: EUR 1.85M) • Implementing the enabling environment pillar of the RVO-funded ABC Uganda through MEMD and SNV cooperation, to promote increased access to HH biodigesters and an enabling environment (2022-25; EUR 695K). <p>Interconnections: Sharing best practices on RBF design, BDS, climate and energy nexus, BCC, and gender transformative approaches with relevant actors e.g., GIZ Sector Network Energy, UECCC/World Bank EASP, GDC, ESMAP, CCA, GET Invest.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? 	<p>Financial:</p> <ul style="list-style-type: none"> • Partners only receive technical/financial assistance aimed at addressing critical funding and capacity building gaps <p>Institutional:</p> <ul style="list-style-type: none"> • BDS, market intelligence enables RE companies to grow and improve their operations • Policy advisory support improves framework conditions and is coordinated with MEMD, UNACC, development partners <p>Ecological:</p> <ul style="list-style-type: none"> • Partners must comply with national laws and standards • Products must meet EnDev’s performance requirements (incl. piloting HTC technologies)

<ul style="list-style-type: none"> • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Technological:</p> <ul style="list-style-type: none"> • Promoted ICS must be fit for context, with long-term availability, provision of localized after-sales and warranty services • Set up of first higher tier manufacturing facility ACE will reduce COGS including in Uganda and refugee settings (LNOB+) • Support for innovation, feasibility, upscale potential of HTC to meet GoU ambitions on clean cooking transition <p>Social:</p> <ul style="list-style-type: none"> • RBFs and BDS contribute to socio-economic transformation of rural regions through HH and PUE access to cleaner cooking solutions • Empowering youth and women through micro-entrepreneurship and PUE income generation, including gender incentives for recruitment/target beneficiaries to promote gender equality • Positive health impacts through uptake of ICS (incl. HTC) • Time saving and reduced SGBV risks for women collecting firewood through ICS.
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<p>Please use table 1 to provide an overview of the component’s outcomes, using “adjusted numbers” (i.e., corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev’s global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI)</p>	<p>Cooking sector: Cooking Energy 2.1 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>44,869</td> <td>2,652</td> <td></td> <td>2,222,092⁸⁶</td> </tr> <tr> <td>PU: Access to cooking</td> <td>266</td> <td></td> <td></td> <td>1,003</td> </tr> </tbody> </table> <p>Cooking sector: Cooking Energy 2.1 – Table 2</p> <table border="1"> <thead> <tr> <th>Outputs</th> <th>Applicable</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Indicator 2.1: +25% market share for scalable companies</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>EnDev Uganda was selected as a pilot country to report under this indicator and submitted the company segmentation tool in Q1 2022 based on OCS (Output Calculation Sheets) sales data for 12/2021.</td> </tr> <tr> <td>Indicator 3.2: added value of support given to stakeholder networks</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>EnDev Uganda was selected as a pilot country to report under this indicator however the template and guidance for</td> </tr> </tbody> </table>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	44,869	2,652		2,222,092 ⁸⁶	PU: Access to cooking	266			1,003	Outputs	Applicable	Details	Indicator 2.1: +25% market share for scalable companies	<input checked="" type="checkbox"/>	EnDev Uganda was selected as a pilot country to report under this indicator and submitted the company segmentation tool in Q1 2022 based on OCS (Output Calculation Sheets) sales data for 12/2021.	Indicator 3.2: added value of support given to stakeholder networks	<input checked="" type="checkbox"/>	EnDev Uganda was selected as a pilot country to report under this indicator however the template and guidance for
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⁸⁶ Differentiation between targets of component 2.1 & 2.2 is new, therefore the total is not yet differentiated between 2.1 & 2.2

<p>- can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1) the additional target resulting from the new programming (i.e., until 12/2025 or 06/2024 for PoPs), and 2) the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e., capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>		<p>reporting has not yet been shared by HQ.</p>
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Narrative</p> <p>Collaboration with the sector association(s) will lead to stronger advocacy and lobbying for the private companies. X cookstove companies will improve their business models enabling them to access needed funding through the targeted BDS support. Awareness raising for ICS and higher tier cooking technologies and after-sales options backed by soft-skills training of technicians will increase sustainability of clean cooking access. Market intelligence will inform government policy development and RE company marketing strategies as well as incentive/investment approaches to enable more cookstove companies to serve the HH, higher tier, and PUE segments.</p> <p>Overall, the interventions will contribute to increase in income for PUE beneficiaries, job creation in the RE companies and after-sales services, gender equality, access to modern education services and reduction in GHG emissions.</p>	<p>Approx. 26,89% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> HTC: 14,27% <i>out of the total EnDev Uganda budget</i> <input checked="" type="checkbox"/> LNOB+: 2,76%

Cooking sector: Component 2.2 – Cooking Energy for Refugees and Host Communities

Please describe the modalities (e.g., RBF-mechanism) and key interventions / activities (e.g., behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- 7 Training, BDS
- 8 Access to Finance
- 9 Evidence, learning transfer, innovation
- 10 Policy advice and capacity development
- 11 Partnerships and alliances
- 12 Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes to the promotion of higher tier cooking and LNOB+ (incl. the target group).

- a. **Access to Finance:** With the incoming EnDev DSS pilot project that will focus on the refugee context in Uganda, EnDev Uganda will phase out its current supply side cooking RBFs. The DSS Project (2023-25, Euros 4.9M) will leverage on structures and partnerships that have been built to date. It will work with some of the same and additional companies manufacturing and distributing improved cookstoves concentrating on closing the observed affordability gap among refugee and rural Ugandan customers, and thus contribute to building the markets within targeted refugee settlements.
- b. **Policy advice and capacity development:** EnDev will continue to cooperate with MEMD and key actors on strategic advisory support into relevant sector policies with the main aim of integrating humanitarian-based services into Uganda’s national service delivery system. The component will also provide feedback and share learnings from the implementation of the SERP to contribute to monitoring and evaluation efforts.
- c. **Awareness Raising:** Cooperating with the EnDev Uganda, DSS pilot and ESDS, the component will continue to support ICS companies and energy kiosks built under EnDev in gender responsive awareness raising activities ([EnDev GAP, priority area 3](#)) within refugee hosting and affected districts (**Output 3.2**). Focus will primarily be on ICS for HHs, but evaluation will include cooking solutions for PUE. The partners will participate in radio talk shows to discuss key thematic energy topics and conduct market drives to enhance product awareness and market penetration of quality cooking products. Further support shall be given to already existing partner companies or higher tier cookstove companies in terms of branding and setting up distribution hubs within the refugee settlements to strengthen their supply chains (**Output 2.1**). Awareness-raising within the refugee context shall be complemented by activities from DSS and ESDS.
- d. **Partnerships and Alliances:** (Refer to section 2.1). EnDev shall also work closely with GIZ ESDS, UECCC, REP Fund, UNHCR and other humanitarian sector networks (local and international) to inform on market-based approaches in the humanitarian-development-peace nexus with focus on energy.

<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Implementation: Activities are aligned with the CRRF⁸⁷ and SERP. The component closely collaborates with the GIZ Energy and Climate Programme, OPM, UNHCR and its implementing partners (IPs) as well as NGOs focusing on cooking energy such as Save the Children International and ZOA.</p> <p>Leverage: EnDev continues developing market intelligence leveraging activities under ESDS to support energy markets in displacement settings. Market gaps such as low purchasing power shall be supported by EnDev’s DSS pilot (4.9 million EUR) and the World Bank’s EASP.</p> <p>Interconnections: Under the humanitarian-energy nexus, EnDev refugee component shares its best practices on RBF design, market development in displacement settings, BDS, behavioural change and gender transformative approaches with other actors including GIZ Sector Network Energy, UNHCR, UECCC and GPA (Global Platform for Action).</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How 	<p>Refer to section 2.1 for Financial, Institutional and Ecological sustainability.</p> <p>Technological: EnDev Uganda promotes ICS fit for the context to meet underserved demand. Technologies are identified and selected against key performance criteria (i.e., national standards). Component activities are designed to lead to long-term availability of quality products that meet customers’ cooking preferences, and adequate provision of localized maintenance and repair value chains with clear aftersales, and access to warranty services. Serving customers in the refugee settlements as well as host communities is creating opportunities for upscaling and a self-sustaining ICS private sector in the mid- and long-run.</p> <p>Social: EnDev’s gender responsive awareness raising support on clean cooking solutions contributes to the socio-economic transformation of rural regions as it leads to reduced environmental degradation and health burdens. Further to that, improved service delivery (especially aftersales services) contributes to the creation opportunities for youth and women employment as sales agents or as productive users thereby improving livelihoods within mainstream sector business. (Refer to section 2.1 for additional benefits).</p>

⁸⁷ Comprehensive Refugee Response Framework

<p>does the project ensure that (unintended) inequality or social tension are avoided?</p> <p>What is the exit strategy and/or ideas for follow-up financing?</p>											
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e., corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e., until 12/2025 or 06/2024 for PoPs), and 2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. <p>The tables should be complemented by a short narrative (max.</p>	<p>Cooking sector: 2.2 Cooking energy for Refugees and Host Communities – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which HTC</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to cooking</td> <td>1,800</td> <td></td> <td>1,800</td> <td>2,222,092⁴</td> </tr> </tbody> </table> <p>Narrative</p> <p>Expected additional results include increased knowledge and attitude change from refugee and host community HHs on the use of ICS and PUE from key behavioural change messages from awareness raising activities and demonstration site visits. ICS companies improve on their business models enabling them to strengthen their supply chains. Market intelligence informs marketing strategies and investment decisions for more ICS companies to serve refugee and host community markets.</p> <p>Businesses that have accessed PUE technologies become more productive, and members within the businesses explore related opportunities of improved livelihoods (increased incomes, or increased job opportunities) thus improving the quality of life in the refugee and host community. While established local distribution hubs in the community lead to the formation of sustainable market linkages with quality product supplies and the provision of after sales services in displacement settings. Overall, the interventions are expected to reduce GHG emissions.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025	People: Access to cooking	1,800		1,800	2,222,092 ⁴
Outcomes	Additional 07/2023 – 12/2025	Of which HTC	Of which LNOB+	Total by 12/2025							
People: Access to cooking	1,800		1,800	2,222,092 ⁴							

<p>500 characters without spaces) to describe unquantifiable results (i.e., capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for higher tier cooking and leave no one behind</p>	<p>Approx. 15,55% of total budget⁸⁸</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 15,55% of the total EnDev Uganda budget</p>

⁸⁸ The refugee component is planned jointly (combining 2.2 & 3.2), the split between 2.2 & 3.2 is therefore an estimate

Electricity sector

Please briefly describe

- the current state of the market based on the ToC for the electricity sector, highlighting key barriers
- how key EnDev interventions / components help to overcome barriers and contribute to transformation in one or more of the following ways:

- **Market development** (developing a market for energy access technologies – mainly relating to household access)
- **Economic development /** productive use
- **Social Development**
- **Poverty alleviation** (leaving no one behind and including access in refugee settings)

The ToC needs to be submitted in a separate excel file based on the respective template.

Current State: Solar Sector

Markets for tier 1 to 2 SHS supplied to HH, SIs and PUE beneficiaries, including small-scale appliances, are in the expansion phase, albeit with several variables in the pioneering phase and few in the maturity phase. In refugee markets, HHs predominantly have a demand for tier-lighting with charging systems and tier 1 SHS, which fall within the market expansion phase. However, systems are primarily purchased using PAYG payment models. Due to the huge affordability gap, tier 2 systems remain within the pre-commercial phase.

For the enabling environment, the REA⁸⁹ has been absorbed by MEMD, thus delaying the finalization of the draft Energy Policy. There is an increased momentum towards quality compliance, with the UNBS having adopted IEC standards for the smaller systems in 2020. The SERP is being adopted as a guiding strategy to harmonize energy response for refugee and host communities.

The COVID-19 pandemic significantly affected the market's ability to pay, forcing RE companies to downscale and change business models. There are still factors limiting access for PUE and solar systems for SIs and HHs in rural and remote areas (especially refugee markets) that have slow growth. There is need for further professionalization and customization of business models to ensure business recovery and resilience for PAYG companies, and increase sales, geographic scope, networks and partnerships, market intelligence, enforcement of quality standards, marketing, and awareness.

Transformative Character:

Market development: Improve the sustainability and scale-up of existing business models (supply side) and thereby contributing to market development. EnDev Uganda intends to fill key gaps on both, supply, and demand side of the OGS market.

Economic development: Aim to achieve income and employment through energy access for PUE beneficiaries.

Social development: Foster social development by supporting market development that enhances energy access for social institutions. EnDev will support companies to sell affordable OGS solutions (including higher-tier solutions) to underserved SIs (schools).

Poverty alleviation: Reduce the access burden of OGS to marginalized HHs, including refugee and host communities through infrastructure development and strengthening supply chains.

⁸⁹ Uganda Renewable Energy Agency

Electricity sector: Component 3.1 – Solar

Please describe the modalities (e.g., RBF-mechanism) and key interventions / activities (e.g., behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:

- 13 Training, BDS
- 14 Access to Finance
- 15 Evidence, learning transfer, innovation
- 16 Policy advice and capacity development
- 17 Partnerships and alliances
- 18 Awareness Raising

Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.

If relevant, please highlight how this activity contributes LNOB+ (incl. the target [group](#)).

- a. **Access to Finance:** EnDev will use the RBF modality as its main approach to incentivise the OGS companies to expand outreach and product offerings. Refer to section 2.1 for more information about the planned cross-sectoral Results-Based Finance Facility.

Under the Solar Energy component, participating companies will be incentivised to reach underserved schools (incl. privately owned schools) and PUE beneficiaries with reliable and affordable electricity access through off-grid solar systems. To reach schools, and as such improve the learning experience for students including girls ([EnDev GAP, priority area 1](#)), companies will be incentivised to explore innovative solutions such as energy-as-a-service models. In addition, close attention will be paid to the alignment with similar efforts under the EASP project, which is currently planned to focus on public schools primarily. The RBF Facility will also be gender sensitive in its design, by designing additional incentives for reaching women-led businesses ([EnDev GAP, priority area 2](#)). Additionally, companies will receive different incentives according to the tier of access provided. As previously mentioned, EnDev will explore contracting the companies through a Fund Manager that will oversee the day-to-day operations and collaborations with the private sector companies. EnDev will continue to provide backstopping and technical advisory support. In a nutshell, EnDev will work with the fund manager to tailor the RBF approaches to the different beneficiaries i.e., PUE users and schools.

- b. **Training, BDS:** In addition to the RBF, EnDev will provide tailored BDS support to solar companies including training, coaching, mentoring and consultancy. The BDS will be handled as a consolidated effort for both cooking and solar companies. Assessments of needs will be done as required to inform the BDS support. The BDS will build onto the current ongoing BDS interventions with the aim to further investment readiness, financial literacy, business growth, business resilience and sustainability of business operations and address remaining gaps. This support will include a proportion of female-led solar companies ([EnDev GAP, priority area 2](#)).

EnDev will leverage innovations in after sales services for SHS, for example GBE's approach to the [Tukole Project](#). Under this project, SHS users and solar companies can access skilled repair and maintenance technicians through an app. These technicians are pre-vetted and trained. EnDev Uganda will support in awareness raising for this and similar initiatives for both the end-users and the solar companies. Additionally, EnDev will support already trained technicians including women with pertinent supplementary skills such as customer engagement and digital inclusion ([EnDev GAP, priority area 2](#)).

	<p>c. Awareness Raising: On the demand side, EnDev will continue to support BCC to facilitate adoption of OGS for PUE and SIs. These campaigns will highlight benefits, applications, product availability, consumer financing options and business cases for these technologies. This will be done through collaboration with MEMD and relevant sector associations including the USEA as well as the private sector partners.</p> <p>d. Policy advice and capacity development: EnDev will continue to support the enabling environment through concerted input, together with the GIZ Energy and Climate Programme, into the review of key policies and strategies, as well as supporting other sector actors as they roll out improved quality standards and e-waste management practices. This will include support to the recently launched NREP, the World Bank PAYG Toolkit, and knowledge exchange and input into sector working groups. EnDev will also continue to build capacity at USEA through collaborations and engagements as well as crucial activities such as awareness and market intelligence.</p> <p>e. Partnerships and alliances: EnDev Uganda will continue to build and strengthen strategic partnerships and alliances with sector networks, sector associations, other EnDev countries, development partners, government, and global energy coalitions. These include national partners such as MEMD, NREP, USEA, UECCC, UNREEEA, UNBS and other pertinent research and academic institutions, as well the GIZ Uganda Energy and Climate Programme, GIZ sector networks, GOGLA, ARE, SEforALL, GDC and the World Bank. This will inform project design and implementation, foster synergies, and add a multiplier effect to the project's interventions.</p> <p>f. Evidence learning transfer and innovation: Through knowledge sharing and exchange, contributions to communities of practice, working groups and sector coordination groups (including the humanitarian-energy nexus), EnDev will build on the body of knowledge in the sector. EnDev Uganda is already a key member of the working groups at the programme level as well as sector groups such as the Productive Use of Renewable Energy WG, chaired by USEA. EnDev will also continue to inform key project designs including the implementation of the World Bank EASP through knowledge and experience sharing. Additionally, a market intelligence activity shall be established in collaboration with USEA to map out market potential for the target beneficiaries (PUEs and SIs). This will inform market penetration and expansion plans of the private sector companies as well as explore sustainability of business cases for PUE users. This information can also form key messaging in the planned awareness activities.</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, 	<p>Alignment/interconnections:</p> <ul style="list-style-type: none"> • EnDev is part of the GIZ Energy and Climate Programme implemented in close collaboration with MEMD. EnDev collaborates closely with other projects in this programme as well as other DPs, sector networks, district local governments and co-financing implementers (SNV and RVO).

<ul style="list-style-type: none"> • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<ul style="list-style-type: none"> • Interventions are aligned with GoU's energy access and NDC targets. <p>Leverage:</p> <ul style="list-style-type: none"> • EnDev Uganda's market development efforts including the Last-Mile RBF (2019-22; USD 750k) have been followed, and scaled-up by other development partners e.g., BGFA, SEforAll's UEF, WB EASP, and the SDG 7 RVO facility (with some of the Last-Mile RBF partners participating scaling up the success of the Last-Mile RBF). • Tailored BDS continues to unlock funding for the companies. Co-financed projects as IKEA-F's regional SEFFA project (2021-23; EUR 8M) piloting sustainable PUE business models have significant scale up potential. • The capacity building with USEA resulted in USEA's collaboration with GOGLA, moving towards association sustainability.
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know-how for replacement and repair available? • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>	<p>Financial</p> <ul style="list-style-type: none"> • RBF enables companies to overcome funding gaps and to expand their operations • Tailored BDS unlocks public and private funding • Through collaborations with the GIZ Global Carbon Markets Programme, companies will explore carbon financing <p>Institutional</p> <ul style="list-style-type: none"> • Policy support improves framework conditions for companies • Capacity building strengthens USEA's advocacy • Contribution to WB PAYG toolkit to improve the operational environment of PAYG companies <p>Ecological</p> <p>EnDev continues to embed product quality standards and assess partners for proper e-waste handling practices</p> <p>Technological</p> <ul style="list-style-type: none"> • Planned skilling activity to enforce O&M technician pool • All partners to extend warranties and after-sales services <p>Social</p> <ul style="list-style-type: none"> • Interventions will create employment, increase income, and improve education experience • Interventions will be in line with the broader EnDev strategy and integrated in the component gender action plan

Please use table 1 to provide an overview of the component's outcomes, using **“adjusted numbers”** (i.e., corrected for sustainability, attribution, and additionality).

If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.

Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) – can be added to table 3 (see placeholders).

For each indicator, please provide

1. the additional target resulting from the new programming (i.e., until 12/2025 or 06/2024 for PoPs), and
2. the total target for the period until 12/2025 or 06/2024 for PoPs **using the “Programming 2023 – 2025” features of the ODM.**

The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e., capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.

Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the

Electricity sector: Solar 3.1 – Table 1

Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025
SI: Access to electricity	169		1,203
PU: Access to electricity	277	34	1,630 ¹⁴

Narrative

Expected additional results include increased uptake of SHS by RE companies PUE beneficiaries and SIs as a result of increased awareness. Capacity building for the sector association will lead to stronger advocacy and lobbying for the solar companies. Awareness raising of O&M and after-sales options backed by soft-skills training of technicians will increase sustainability of access. Market intelligence will inform marketing strategies and incentivise more solar companies to serve the PUE and SI segments.

Overall, the interventions will contribute to increase in income for PUE beneficiaries, job creation in the RE companies and after-sales services, gender equality, access to modern education services and reduction in GHG emissions.

Approx. 42% of total budget

Approx. contribution to thematic budget for:

LNOB+: 2.76% of the total EnDev Uganda budget

<p>scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+.</p>	
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<h2 style="color: #00A651; margin: 0;">Electricity sector: Component 3.2 – Solar for Refugees and Host Communities</h2>	
<p>Please describe the modalities (e.g., RBF-mechanism) <u>and</u> key interventions / activities (e.g., behaviour change campaign) foreseen under this component. Where possible, please refer the key intervention areas of the EnDev theory of change:</p> <ul style="list-style-type: none"> 19 Training, BDS 20 Access to Finance 21 Evidence, learning transfer, innovation 22 Policy advice and capacity development 23 Partnerships and alliances 24 Awareness Raising <p>Make sure you describe how activities in the relevant intervention areas logically and with minimal input, lead to the set outputs, outcomes and impacts set out in the ToC above.</p> <p>If relevant, please highlight how this activity contributes to LNOB+ (incl. the target group).</p>	<ul style="list-style-type: none"> a. Access to Finance: In order to sustainably improve market access to (solar) PUE technologies within the refugee context, EnDev shall provide technical assistance/ co-financing to one selected micro-finance institution (MFI) to build their capacity on structuring customized PUE and HH energy asset loans for refugee markets including easing access to finance to women involved in PUE activities (EnDev GAP, priority areas 1 and 2). <p>For the same reasons as mentioned above (refer to section 2.2), EnDev shall phase out supply side RBF interventions for OGS companies operating within the displacement settings. Equally, the EnDev DSS pilot project will work with existing and new partners on increasing access to quality OGS products within the same markets.</p> <ul style="list-style-type: none"> b. Training, BDS: In order to facilitate the adoption of solar PUE technologies within the humanitarian context, EnDev will provide PUE technical assistance to already existing small businesses or value-chain specific businesses operating within the refugee settlement. These businesses shall be identified and selected based on their scalability, investment readiness, have gender markers, and have existing market linkages to absorb increased productivity. The supported businesses shall further act as demonstration sites or learning centres on PUE in the humanitarian context for which interested businesses or individuals could refer to for purposes of knowledge exchange and business benchmarking. c. Awareness Raising: In partnership with OGS suppliers (distributors/vendors), EnDev (including support from DSS) will continue to support awareness raising activities within refugee hosting and neighbouring districts highlighting benefits, applications, product availability, consumer financing options and describing business cases for female and male customers in need of PUE (EnDev GAP, priority area 2). Partners including energy kiosks management team members will participate in radio talk shows to discuss key thematic energy topics. Other

	<p>market activation activities could include market drives or visits to VSLAs or women groups to enhance product awareness and understanding of the business cases of solar energy for the livelihood activities they are already engaged or interested in.</p> <p>Additional support will be given to selected, already existing OGS market suppliers in branding and setting up distribution hubs (similar as in cooking) within the settlement. This shall strengthen private sector participation within the refugee market and enhance their outreach endeavours to create demand, improve service delivery, and customer knowledge of the product.</p> <p>Refer to section 3.1 for Evidence, learning transfer, innovation, Policy advice, Partnerships, and alliances</p>
<p>Please highlight how the project cooperates and / or collaborates with local and international actors under this component to</p> <ul style="list-style-type: none"> • implement or complement activities, • leverage additional impacts, financing (incl. co-financing), etc., and / or • support interconnections with other sectors. 	<p>Alignment/interconnections: Activities contribute to efforts in implementing the GCR and are aligned with Uganda’s CRRF and SERP which both envision equal access and service provision for both refugees and host communities for affordable and reliable clean energy technologies to achieve socio-economic transformation and self-reliance. To this, EnDev Uganda continues to work closely with MEMD and collaborates with the OPM, UNHCR, ESDS and the WorkGrEEen sector working group toward the contribution of the humanitarian-energy nexus under its LNOB+ approach.</p> <p>Leverage: EnDev plans to leverage on the DSS pilot project (2023-25, Euro 4.9M) to accelerate HH solar access for refugees and host communities. Similarly, leverage on the WB and BGFA funded projects that aim at increasing market penetration and distribution outreach of OGS electrification for HHs and PUE.</p>
<p>Please describe how the results achieved can be anchored in a self-supporting and sustainable way taking into account the following sustainability dimensions:</p> <ul style="list-style-type: none"> • Financial – is there a viable business case in the absence of the project, or sustained alternative funding? • Institutional – is there an enabling environment with supportive institutions? • Ecological – does the project activity do no ecological harm? Is there proper handling of e-waste for electrification projects? • Technological – is technology and know- 	<p>Refer to section 3.1 for Financial, Institutional and Ecological sustainability.</p> <p>Technological: For the refugee context, EnDev Uganda promotes OGS home and PUE solutions based on market drivers that influence demand, with technology selection against key performance criteria, availability of supply and provision of localized maintenance and repair with clear after-sales and warranty services.</p> <p>Social: Through distribution support and BDS, EnDev Uganda contributes to the socio-economic transformation of rural regions through increased access to SHS, aftersales services, job opportunities, skills enhancement, and enabling gender inclusion in mainstream sector business. (Refer to section 3.1 for additional benefits).</p>

<p>how for replacement and repair available?</p> <ul style="list-style-type: none"> • Social – is the projects output well appreciated? How does the project ensure that (unintended) inequality or social tension are avoided? <p>What is the exit strategy and/or ideas for follow-up financing?</p>													
<p>Please use table 1 to provide an overview of the component's outcomes, using “adjusted numbers” (i.e., corrected for sustainability, attribution, and additionality).</p> <p>If your activities are contributing or could contribute to EnDev's global outputs, please fill out the relevant sections of table 2.</p> <p>Additional relevant quantitative indicators and targets – differentiated by energy type (electricity vs. cooking) and target group (people, PU, SI) - can be added to table 3 (see placeholders).</p> <p>For each indicator, please provide</p> <ol style="list-style-type: none"> 1. the additional target resulting from the new programming (i.e., until 12/2025 or 06/2024 for PoPs), and 2. the total target for the period until 12/2025 or 06/2024 for PoPs using the “Programming 2023 – 2025” features of the ODM. 	<p>Electricity sector: Solar for Refugees and Host Communities 3.2 – Table 1</p> <table border="1"> <thead> <tr> <th>Outcomes</th> <th>Additional 07/2023 – 12/2025</th> <th>Of which LNOB+</th> <th>Total by 12/2025</th> </tr> </thead> <tbody> <tr> <td>People: Access to electricity</td> <td>3,601</td> <td>3,601</td> <td>111,340 ¹⁴</td> </tr> <tr> <td>PU: Access to electricity</td> <td>23</td> <td>23</td> <td>1,510 ¹⁴</td> </tr> </tbody> </table> <p>Narrative</p> <p>Additional expected results include improved after sales service delivery by OGS companies within refugee and host communities as a result of increased awareness. Solar companies have more customised business models enabling them to commercialize refugee markets with flexible business modalities. Market intelligence informs marketing strategies and incentives for more solar companies to serve the HH and PUE segments.</p> <p>Overall, the interventions will contribute to increase in income for PUE beneficiaries, job creation in the RE companies and after-sales services, gender equality and reduction in GHG emissions.</p>	Outcomes	Additional 07/2023 – 12/2025	Of which LNOB+	Total by 12/2025	People: Access to electricity	3,601	3,601	111,340 ¹⁴	PU: Access to electricity	23	23	1,510 ¹⁴
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<p>The tables should be complemented by a short narrative (max. 500 characters without spaces) to describe unquantifiable results (i.e., capacity building, sector alignment, etc.) and how outcomes like to the impacts described in the ToC.</p>	
<p>Please provide a rough estimate of how much of the total budget is used to achieve the outcomes under this component. This information will be used to contextualise the scale of activities and outcomes for reviewers. It will not be a binding share or part of monitoring and reporting processes.</p> <p>Please also highlight whether this component contributes to the thematic budget share for LNOB+</p>	<p>Approx. 15,55% of total budget</p> <p>Approx. contribution to thematic budget for:</p> <p><input checked="" type="checkbox"/> LNOB+: 15,56% out of total EnDev Uganda budget</p>

Safeguards and risks

<p>Please describe possible environmental and social risks that may occur as a result of project activities during project implementation. Which safeguards measures have you planned to avoid, minimize, or mitigate these risks?</p>	<p>EnDev has conducted an integrated peace and conflict analysis which included Uganda and as well as a dedicated EnDev Uganda gender analysis (both in 2021). With support of ENERGIA, EnDev set up gender action plans for all components cooking energy, electricity, and refugee settings. Additionally, EnDev and ESDS conducted an e-waste baseline study in Uganda which will inform any future potential activities.</p> <p>Social Risks</p> <ul style="list-style-type: none"> • Gender: Care must be taken to avoid that those existing patriarchal structures do not result in the exclusion of women from the benefits of the project. To mitigate these risks EnDev's approach is to target woman specifically by incentivising sales of ICS and solar PV to woman headed households (RBF incentive in both cooking and solar PV) and continue to ensure gender responsive action by partners including energy kiosks for ICS and solar PV. • Refugees and host communities: Interventions in the refugee settlements might create tensions between hosting
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communities and the refugees creating a perception that refugees have access to various opportunities to countervail economic hardship as opposed to host communities. To avoid social tensions, EnDev plans all its interventions for refugees and host communities equally.

Environmental Risks

- E-waste: The increased uptake of solar PV might lead to bigger volumes of e-waste across the county. Partner solar companies are therefore required to provide quality systems certified by VeraSol or UNBS, as well as extend after-sales service (special incentive factoring in warranty). This should reduce e-waste by ensuring longevity of the systems. In addition, the project encourages best practice in e-waste as an added advantage in EnDev Uganda tender processes. Discussions with partners on further activities are ongoing but dependent on the availability of dedicated co-finance currently not yet available. EnDev has already conducted the baseline study able to inform any potential activities. For the refugee context ESDS will take lead to identify complementary initiatives to pilot activities started by IOM in one of the refugee settlements. Efforts could be supported by EnDev.
- CO2 emissions: Emissions increased through the verification exercise required for the RBFs. EnDev Uganda mitigates this risk by using of online meetings and webinars to share information. Use of phone verifications (at least 90% of all checks are done via phone). Geographical clustering to be done for field verifications so that additional greenhouse gas emissions through in country travel can be avoided.

Budget

Please indicate your requested core budget using the table “Budget overview.”

Please add additional co-financing (donor, amount) that also add to the project outcomes and activities for the programming period in the table “Final budget for project period incl. co-financing.”

Final budget for project period incl. co-financing

#	Donor	EUR	Brief description of co-financing (max. 200 characters w/o spaces)
1	Core-budget (c.f. quotation price above)	3,200,391	
2	IKEA Foundation	800,000	SEFFA (incl. share SNV)
3	USAID	150,000	SCCIF
4	DGIS	4,600,000	DSS
5	RVO	500,000	ABC
	Total estimated budget	9,250,931	

Funded by:



Ministry of Foreign Affairs of the Netherlands



Norad



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC

Coordinated and implemented by:



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Annex B



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Content

Context and introduction	450
1. Review of country proposals by the World Bank / ESMAP	451
Country-specific feedback	451
2. Review of country proposals by the Clean Cooking Alliance (CCA)	459
Portfolio-wide feedback.....	459
Country-specific feedback	460

Context and introduction

Annex B compiles the external review of the country proposals by EnDev's partners on both meta-level strategic orientation, as well as meso- and micro-level activity planning at the country level.

Upon finalization of the programming proposals in Annex A, EnDev has sought feedback from two of its strategic partners: the Clean Cooking Alliance (CCA) and the World Bank/ESMAP. The purpose of this engagement was to gather valuable insights and input regarding the thematic and country-level topics addressed in the programming proposals.

The feedback received from the Clean Cooking Alliance and the World Bank/ESMAP aimed to enhance the overall quality and effectiveness of the programming proposals, as well as EnDev's operations as a whole. Both organisations provided insights, recommendations, and suggestions based on their expertise and knowledge within their respective fields. Their inputs have included considerations related to policy frameworks, financing mechanisms, technological innovations, capacity-building initiatives and the identification of priority countries and regions for (joint) implementation.

All comments received from the World Bank/ESMAP and CCA are included in this annex in Chapter 1 and 2 of this Annex, respectively.

EnDev recognises the value of incorporating diverse perspectives and insights into the programming process. By actively seeking feedback from its strategic partners, EnDev reaffirms its commitment to collaboration, ensuring that the proposed interventions would be well-informed, relevant and effective in addressing energy access challenges at both thematic and country levels.

Ultimately, this engagement with the Clean Cooking Alliance and the World Bank/ESMAP not only enriches the programming proposals but also fosters stronger partnerships and synergies between EnDev and its strategic allies. By working together, these organizations aimed to advance the shared goal of sustainable energy access and contribute to global efforts to address energy poverty and promote clean and affordable energy solutions.

EnDev management very much welcomes the constructive and critical comments of the reviewers and appreciates the time they have invested to provide extremely thorough and insightful feedback.

1. Review of country proposals by the World Bank / ESMAP

Country-specific feedback	
Country	Feedback
Burundi	<ul style="list-style-type: none"> • The proposal is well aligned with some on-going (or soon to start) activities under the WB funded SOLEIL-Nyakiriza project. Areas of coordination and synergies with EnDev should be explored for the following activities: <ul style="list-style-type: none"> ○ The RBF currently being set up targeting both off grid and clean cooking companies – the FESEC was officially launched by GoB in March 2023. the first CfP for clean cooking will be launched in the coming months. The objective is to have an aligned approach across donors especially regarding market incentives. ○ The Facility providing TA to companies in the off grid solar and clean cooking sectors will be set up in the coming weeks. ○ Activities to support market development (incl. standards/testing) and end-user awareness are also planned under the project. • The WB through the SOLEIL project could also join the effort in improving the enabling environment and building capacity for clean cooking in the country. The WB project has for instance started to strengthen the capacity of CRMP but the effort should be continued. • The team is available to the EnDev team to discuss further (maybe during the next supervision mission in the fall).
DRC	<p>Cooking</p> <p>WB current energy sector operations do not directly support access to improved cooking solutions. However, Burnia is among the priority city targeted by the WB Access Governance and Reform of the Energy and Water sectors (AGREE) project. WB team welcomes the opportunity to coordinate market intelligence activities and capacity building efforts for the local authorities and CSOs. EnDev program complements the AGREE project by supporting government objective to increase access to clean cooking solutions. The WB team sees an opportunity for a close collaboration between EnDev and ANSER, particularly through the Mwindu Fund and the International Fund Manager’s team. The Mwindu Fund is expected to play a major role in national efforts to expand access to clean cooking. They would benefit from market intelligence and environment enabling activities and could also replicate and scale the EnDev interventions. In addition, the DRC Forest Project (P178642) under preparation, will comprise activities with clean cooking based on biomass and use the mechanisms established under the Mwindu Fund.</p>

	<p>Productive use of energy</p> <p>The WB team welcomes the PUE intervention focusing on Idjwi Island in South Kivu. WB and other partners such as GEAPP are coordinating efforts for the promotion and scale up of PUE activities to support both customers income generation and mini grid financial viability through demand stimulation. The WB team is currently finalizing a study that aims to conduct an in-depth analysis of the productive uses of electricity with high development potential, and to develop a roadmap to guide future interventions by the government, civil society and the private sector to promote the development of these productive uses of electricity. The consultant team leading this study is currently defining pilot projects that could be implemented in the short term via financing from WB AGREE project or with support from other partners. Lessons learned from EnDev past and planned PUE interventions could be leveraged in the design and implementation of these pilot projects. This is an opportunity for synergies and coordination between WB and EnDev teams. EnDev's plan to create linkages between different stakeholders involved in PUE (suppliers, financial institutions, end users) is also in alignment with WB strategy to support PUE scale up in DRC and in other countries in the region. It will be important to work with GoDRC to identify a champion on the GoDRC side who can drive and facilitate the development of PUE activities with all the relevant stakeholders. The team sees this as an opportunity for synergy and ongoing collaboration.</p>
<p>Ethiopia</p>	<p>The EnDev proposal has a strong focus on clean cooking, which complements the WB ADELE project well, which exclusively focuses on rural electrification.</p> <p>The promotion of PAYG solutions is very well aligned with the objectives of the ADLE component 3, off-grid electrification, which also seeks to accelerate the uptake of PAYG solutions, particularly through the introduction of an RBF that incentivizes PAYG uptake. Close cooperation would be welcome.</p> <p>Close coordination should be sought with the ADLE component 4, which seeks to electrify public institutions, and similar EnDev work, thereby maximizing the number of sites that will be electrified, and sharing lessons learned on approaches.</p> <p>The focus on building private sector capacity is very welcome and the approach to focus on strongest performing companies resonates in building a more vibrant market, and nurturing companies that have the ability to truly scale. The ADELE project will also provide TA to companies participating in the RBF. The TA will have a strong focus</p>

	<p>on gender, aligned with EnDev's concept. close coordination should be sought to maximize support available to companies.</p> <p>The support to ESEDA is very welcome. It's an important institutions that requires further strengthening and support. It is great to read that EnDev remains committed here.</p> <p>We also read with interest the work on e-waste. This is a key topic for us too. It is encouraging to read that EnDev seeks to strengthen the capacity of the ULAB, given a critical element in addressing e-waste is to have possibility of recycling.</p>
<p>Malawi</p>	<p>EnDev's electrification work in Malawi is aligned and complementary to MEAP's off-grid component, so I don't have much to comment on. A good part of their efforts will go into promoting electrification of productive activities and social infrastructure, which we are not doing under MEAP for the time being. We will seek to continue collaboration / coordination of activities we have in common, namely:</p> <ul style="list-style-type: none"> • business development support for off-grid solar companies • demand-side subsidies • e-waste policy and support to companies
<p>Mali</p>	<p>The program complements some of the work that we were undertaking under the Mali Rural Electrification Hybrid System project (SHER), closed in March 2023, which supports the hybridization of 45 mini-grids and the promotion of EE equipment in rural areas. The proposal questions the viability of this operation with statements such as "Know-how of solar/hybrid operation increases yet sustainable operation is still to be proved – financial management of diesel powered mini grids has been challenging and hybrids require even more (middle/longterm) planning with pression to reduce tariffs applied. EnDev considers this an important risk" or "Installations are popular while operation is not; bankable business-plans are lacking." No comment.</p> <p>A diagnosis of the electrification model was recently carried out under the SHER. It was found that a financial involvement of the operators is necessary to ensure the sustainability of the installations. In fact, it has been noticed that the model totally financed by public funds does not last because as soon as the installation enters the phase where spare parts are required, the operators no longer find interest in it. That is why, in the framework of the new operation under preparation, we require a financial commitment from the operator (between 20 and 30%).</p> <p>This raises the question of the impact on the tariff, which is already quite high in rural areas (and different per operator). Discussions are also underway to harmonize tariffs in rural areas with the involvement of the regulator, which so far only regulates the prices of the national electricity company.</p> <p>We had mixed results on the promotion and distribution of Lighting-Africa certified solar lanterns, despite the subsidies provided to</p>

distributors and the associated information and awareness raising campaigns. It is encouraging to see that the activities envisaged in the proposal will strengthen these efforts, though it is not clear whether the pico-PV equipment and solar lanterns that the EnDev partners will promote will be Lighting Africa-certified or will follow a different certification standard.

The idea of providing electricity in conflict areas, even though your analysis has shown that there is no private sector in the current security situation, is very appreciated. This demand-driven approach does not leave out the areas at risk and allows to contribute to the development of these communities. This innovative approach could also be based on the interest of the diaspora to invest in their community to develop it or consider joint ventures between international private companies with the necessary financing and local operators or private companies with the local knowledge.

The bank's new operation considers the latter approach for the hybridization (add solar to thermal plant) of some localities in conflict zones to increase community resilience by promoting social and economic development through access to clean energy. The objective of this hybridization is also to reduce the risk of gasoline diversion by armed groups.

The distribution of certified lighting africa solar lanterns has been a real success for SHER. Sales were slow when zoning restrictions were in place, but once these restrictions were lifted, the fixed results were outpaced (over 98,000 lanterns were distributed). It is important, however, that the proposal take into account the quality of the lanterns to be distributed to mitigate the invasion of the market by lower quality products.

The proposal to use the RBF is also a good idea. Several SSD installations have been made under the SHER, especially for households for which connection is not profitable. O&M is also provided by the operator for a monthly fee, for 12-18 months. For the new operation, it is planned to install SSDs in health centers and schools but not necessarily by the operators, as the target schools and health centers are far from the mini-grid.

The planned sensitization for the use of solar equipment is innovative. It will certainly have a very important impact on the productive uses, especially since an accompaniment through the RBF is foreseen.

Under SHER financing, women's associations in charge of local products processing units have been supported through solar equipment distributions. Specific training and literacy courses have also been offered to them. Your proposal could also be inspired by this. We intend to support women active in agriculture within the framework of the new operation by installing for a certain number of them irrigation systems to help increase their productivity.

The financing problem is real for businesses and consumers. Facilitating cooperation between (micro) finance institutions and companies Pico PV, SHS and PUE, EnDev solves the problem of payment and access to credit.

I particularly welcome the introduction of activities that aim to stimulate the equipment recycling and the clean cooking market segments, as they are not sufficiently addressed in our current engagement. These

	<p>are potentially areas that we could further explore as we prepare the next energy access operation in Mali.</p>
<p style="text-align: center;">Senegal</p>	<p>Clean Cooking</p> <p><u>LPG:</u> Senegal’s 2023 O&G Masterplan aims at boosting the development of the domestic LPG market and the introduction of competition through regulatory reforms incl. the establishment of a new licensing regime for production and distribution of LPG. Against this backdrop, the introduction of HTC alternatives such as electric cooking and ethanol (both largely unproven in the region) to compete with the established LPG market, appears questionable.</p> <p><u>E-cooking:</u> Electric cooking does not appear as a viable “LNOB” HTS alternative in rural Senegal as (i) electricity consumption of concerned households would inevitably increase far above the social tariff threshold, hence escalating electricity bills beyond reasonable affordability limits, and (ii) any major effort for the promotion of “middle class” electric cooking solutions would quickly result in overloading Senelec’s already saturated LV lines thus hampering/stalling ongoing grid densification efforts in favor of vulnerable populations by significantly increasing the need for grid reinforcement investments. For minigrids, the introduction of e-cooking would likely result in a similar tradeoffs, as (i) once the new electricity code is fully implemented, it will not allow for tariff models fundamentally different from Senelec’s, and (ii) the addition of “middle class customers” using e-cookstoves may indeed improve the margins/profitability of minigrid operations, but at the price of drastically reducing the overall number of vulnerable customers that could be provided with “lifeline” electricity services by the same operator. Finally, the Bank team is not sure how an e-cooking pilot could result in meaningful findings without an analysis of economic viability or consumption-based payments.</p> <p>Rural Electrification</p> <p><u>“Bottom-of-the-Pyramid” (BoP) access solutions:</u> EnDev’s “Pro-Poor RBF”/“LNOB+” approaches for both grid and offgrid sectors perfectly complement the Bank’s efforts under the ongoing US\$ 150m “PADAES” grid densification project to scale grid access of vulnerable populations by subsidizing last-mile connection cost and introducing low-cost internal wiring solutions or “readyboards” project.</p> <p><u>Energy access for rural health centers:</u> Similarly, Endev’s promotion of off-grid solutions for rural health centers matches the US\$ 5m activity under the PADAES project which aims to connect 200 health centers to Senelec’s existing grid while supporting the GoS’s inter-ministerial</p>

working group on sustainable budgeting and payment solutions for public sector electricity consumption.

- ⇒ EnDev and the Bank teams should closely coordinate their ongoing efforts on BoP and health center electrification by sharing their GIS based beneficiary lists and investment planning while actively supporting and following up with the GoS's above inter-ministerial working group.

“External orientation on LNOB”: Within the context of the PADAES, the GoS is using the RNU database as eligibility criteria for the provision of internal “readyboard” wiring solutions to vulnerable households. While the RNU is indeed not exhaustive and may still need many improvements (incl. a more exhaustive coverage and granular geolocation of eligible households), the Bank team is concerned that the circumvention and/or creation of parallel solutions/approaches to orient BoP activities (rather than supporting the GoS in the improvement of the RNU) may be counterproductive.

Enterprise development and credit support for offgrid sector: Another important area of collaboration b/w EnDev and the Bank is the provision of enterprise development services and credit financing to the Senegalese offgrid sector. Under the ongoing Regional Off-Grid Energy Access Project (ROGEAP), ECOWAS (through a mandated fund manager) provides enterprise development services, while BOAD facilitates the provision of credit to offgrid companies through local commercial banks.

- ⇒ EnDev teams, ROGEAP fund manager and BOAD should conduct joint investment committee meetings to closely coordinate and maximize the impact of jointly provided TA and credit support (potentially also including the development of a joint online portal for loan applications).

Results indicators (RI): The proposal correctly underlines that Selelec has adopted the more meaningful indicator of “increasing [the number of] households with electricity”. However, both MPE and UCS, the coordination unit of the GoS's national universal access program, still use the “villages with grid access” RI.

- ⇒ EnDev and Bank should jointly push for the use of the misleading locality-based RI to be banned/discontinued in all official reporting and access planning/M&E activities.

Paygo/Fee-for-Service solutions: Bank experience throughout Senegal and the sub-region suggests that the affordability limits of vulnerable populations in the sub-region are still too narrow to allow

	<p>for upfront purchase solutions of SHS, thus making the use of RBF-supported PayGo and fee-for-service solutions indispensable. We would therefore be interested in learning more about the types of stand-alone SHS EnDev considers as “very affordable”.</p> <p><u>Subsidy levels and price discovery:</u> With PADAES being focused on grid densification and ROGEAP only just starting, the Bank team has limited Senegal-specific information on WTP and affordability for offgrid market. This complicates finding the right “dosage” of subsidy levels to stimulate market development and demand w/o creating counterproductive market distortion or crowding out effects.</p> <p>⇒ Given the importance of coordinating RBF efforts and “getting subsidy levels right”, EnDev and Bank teams should collaborate closely to share analytical work and WTP data collected through price discovery mechanisms across Senegal and the sub-region.</p> <p><u>“Pro-poor approach to connecting households”:</u> Contrary to what is stated in the proposal, Senelec’s outdated current tariff structure with the 1st (heavily subsidized) tariff tranche being universally applied to the first 150kWh consumed by all households (incl. middle class and better-off households), Senelec is not able to “compensate” the negative margins on electricity services to vulnerable rural households with income from urban clients.</p> <p>⇒ Both EnDev and Bank teams should jointly continue pushing for a revision of the current tariff structure to allow for a more efficient and better targeted social tariff for lifeline consumption of vulnerable households with a much lower threshold.</p> <p>Just Energy Transition Partnership (JETP) <u>Least-cost decarbonization path:</u> In the Senegalese context, Gas-to-Power (GtP) and decarbonisation are clearly not an either-or-question”. Quite the contrary - in the short to medium term, i.e. given the limited variable renewable energy (VRE) absorption capacity of Senelec’s grid, GtP will play a critical role for the decarbonization of the power sector, incl. for the rapid substitution of polluting HFO-based generation as the baseload and spinning reserve needed for further VRE additions in both Senegal and its WAPP neighbors.</p>
<p>Uganda</p>	<p>The EnDev and World Bank teams have had several discussions about their respective programs in Uganda, so I am glad to see that the EnDev program is fully aligned with World Bank-funded interventions under the Electricity Access Scale-up Project (EASP) aimed at increasing access to energy (power and clean cooking) to household, commercial, and institutional customers in Uganda, including in refugee hosting districts.</p>

Since EnDev and EASP are considering similar interventions (e.g., access to finance and supply/demand side results-based financing for clean cooking and off-grid solar, energy-as-a-service model for schools, promotion of productive uses of energy), it would be critical to agree/formalize regular discussions during implementation to maximize alignment, synergies, and learning transfer, and avoid duplication. The World Bank anticipates that lessons shared from the implementation of EnDev activities will feed into the implementation of the EASP and vice-versa, therefore ensuring close and constructive collaboration will be of paramount importance.

We would like to share a few comments about some activities included in the EnDev program: (a) market intelligence with USEA to map PUE loads – Columbia University will soon complete a comprehensive mapping of productive use of electricity loads from agricultural activities across the country, which can be used for electrification planning/investments through national grid, mini-grid, and off-grid; (b) e-Waste from solar PV – the World Bank is developing an e-Waste management toolkit to support the preparation and implementation of projects promoting off-grid solar systems. The EASP has been selected as one of the few projects where this toolkit will be piloted. We will take note about the baseline study conducted by EnDev as we pilot the toolkit in Uganda.

We look forward to working with EnDev during the implementation of the EASP project activities.

2. Review of country proposals by the Clean Cooking Alliance (CCA)

Portfolio-wide feedback	
<i>Theme</i>	<i>Feedback</i>
User insights	<p>User-centred innovation is a key objective for CCA's Market Strengthening program. The User Insights Lab aims to surface new insights on end-users and support them across the user journey. The UIL also aims to increase the capacity of organizations across the clean cooking ecosystem to develop user-centred strategies and capabilities and to improve the user experience of clean cooking solutions, policies, and programs. Finally, the UIL aims to invest in infrastructure to support an increase in the pace of user-centred innovation through development of platforms to share knowledge on what works and what doesn't work.</p> <p>The UIL will continue to coordinate with EnDev teams to share knowledge it generates and is happy to explore new collaborations focused on awareness raising, behaviour change and broadly driving increased demand and sustained use of clean cooking solutions.</p>
Standards and labelling	CCA will be happy to continue to coordinate on efforts to support implementation of standards and labelling programs.
Gender	Great to see that each project has undergone a gender analysis and will include specific provisions to ensure gender is mainstreamed throughout the project. CCA is happy to continue to coordinate on mutual lessons learned from integrating gender into clean cooking initiatives.
Carbon and Finance	<p>CCA is developing research, materials and mechanisms for supporting access to carbon finance for clean cooking entrepreneurs that would be sharable across EnDev's programs as well as working to train financial institutions on securitizing carbon to de-risk investment in early-stage clean cooking ventures that could be linked to funding for EnDev program participants.</p> <p>CCA is sponsoring a digital innovation challenge in partnership with UNCDF that could provide tools and resources relevant to clean companies supported through EnDev programs.</p> <p>CCA has developed responsible carbon finance working groups that team members from each of the EnDev programs could join to integrate best practice into country programs.</p> <p>CCA is developing a training on carbon markets and finance for national alliances through our 4Cs initiative that EnDev supported cooking alliances could be considered to attend.</p>

	CCA is developing a unit economics tool for clean cooking companies that could be used as part of EnDev’s business support programming.
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Country-specific feedback	
<i>Country</i>	<i>Feedback</i>
Kenya	<p>User Insights – The User Insights Lab is conducting research projects in Kenya that may be of benefit to EnDev BCC and user-centred activities including research on the effectiveness of product labels to support customer purchasing decisions, research on end user subsidy targeting and design for clean cooking, and fuel stacking behaviours.</p> <p>CCAK Support – CCA is also supporting CCAK to strengthen its advocacy and policy development efforts so we will be happy to continue to coordinate on our support.</p> <p>Delivery Unit – CCA is establishing a clean cooking delivery unit in partnership with the government of Kenya that could act as a support vehicle to activities ongoing in Kenya</p>
Malawi	<p>User Insights – The User Insights Lab is connected with the EnDev team in Malawi to share insights on the design of demand side subsidy programs for clean cooking.</p>
Uganda	<p>User Insights – The User Insights Lab is connected with the EnDev team in Uganda to share insights on the design of demand side subsidy programs for clean cooking.</p> <p>UNACC Support – CCA will be happy to continue to share our learnings from supporting local alliances and coordinate as appropriate.</p>
Ethiopia	<p>ECCA Support – CCA will be happy to continue to share our learnings from supporting local alliances and coordinate as appropriate.</p>
Rwanda	<p>Delivery Unit – CCA is establishing a clean cooking delivery unit in partnership with the government of Rwanda that could act as a support vehicle to activities ongoing in Rwanda.</p>
Bangladesh	<p>Talent Study - CCA is working on a talent study that also focuses on women in the clean cooking jobs value chain – this could be relevant for work focused on accelerating jobs for women in the ICS value chain – happy to share findings that may be relevant for Bangladesh.</p>

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