External Evaluation - Energising Development Partnership Program

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Final Report

Authors
Geert Engelsman
Jörg Peters
Maximiliane Sievert
Gunther Bench
Hester Duursema

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Client
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Deutschland

RebelGroup International bv
Wijnhaven 23
3011 WH Rotterdam

T 010 275 59 90
F 010 275 59 99
info@rebelgroup.com

www.rebelgroup.com
KvK 24 49 48 47
IBAN: NL46 RABO 0102 3534 33

Acronyms

ACP-EU EF	African, Caribbean and Pacific-European Union Energy Facility
ADB	Asian Development Bank
AEI	Africa Electrification Initiative (World Bank initiative)
AFREA	Africa Renewable Energy and Access program (World Bank program)
BMZ	German Federal Ministry for Economic Cooperation and Development
DfID	United Kingdom Department for International Development
ECO	Energy Coordination Office (EnDev's Ethiopia country office)
EEP	Energy and Environment Partnership
EnDev	Energising Development Partnership Program
ESMAP	Energy Sector Management Assistance Program (World Bank)
EU	European Union
EUEI-PDF	EU Energy Initiative – Partnership Dialogue Facility
E4ALL	Energy for All (ADB-led initiative and partnership)
GACC	Global Alliance for Clean Cookstoves
GB	Governing Board
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH*
Global Leap	Global Lighting and Energy Access Partnership
GOGLA	Global Off-Grid Lighting Association
HIVOS	Dutch development organization: *Humanistisch Instituut voor Ontwikkelingssamenwerking*
ICS	Improved cook stoves
IFC	International Finance Corporation
ISAK	Improved Stove Association Kenya
KfW	German *Kreditanstalt Für Wiederaufbau*
KIRDI	Kenya Industrial Research and Development Institute
LDC	Least Developed Country
NGO	Non-governmental Organization
MFA / DGIS	Netherlands Ministry of Foreign Affairs Directorate-General for International Cooperation
MFA-NOR	the Norwegian Ministry of Foreign Affairs
MHP	Micro hydro power plant
OECD/DAC	Organization for Economic Cooperation and Development / Development Assistance Committee
Pico-PV	Pico photo voltaic
RBF	Results-based financing
REEEP	Renewable Energy and Energy Efficiency Partnership
RVO	Rijksdienst voor Ondernemend Nederland (i.e. Netherlands' Enterprise Agency)
RWI	Rheinisch-Westfälisches Institut für Wirtschaftsforschung
SE4All	Sustainable Energy for All Initiative
(S)SHS	(Small) Solar Home Systems
SNV	Stichting Nederlandse Vrijwilligers
SMEs	Small and Medium-size enterprises

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Summary, conclusions and recommendations

Introduction

This document reports to the Governing Board of the Energising Development Partnership Program (EnDev) on the external evaluation of the program. This evaluation has assessed the development effectiveness of EnDev, ascertained the program's strengths and weaknesses, identified bottlenecks and shortcomings in the implementation, and formulated recommendations to fortify its strengths, address bottlenecks and rectify shortcomings.

This report's findings result from (i) (telephonic) interviews with EnDev management and staff, Governing Board member representatives, co-financiers, and EnDev counterparts within the international energy access community; (ii) 4 field missions covering 5 countries: Ethiopia, Kenia, Nepal, Malawi and Peru; and (iii) an elaborate document review. A draft final report has been critically reviewed by the reference group (a 5-member external quality assurance team).

Overall assessment

EnDev is a highly relevant program: it addresses clear development needs, receives broad support from recipient country stakeholders, and is a complementary force within the international energy access community. It is also effective in facilitating access to modern energy services to households and organizations; access which – by and large – is additional and has the chance to be sustainable. Still, EnDev faces common development challenges, which demand the rigorous implementation of EnDev's own core operating principles.

Development effectiveness

According to EnDev's own figures, it has exceeded the number of persons it has sought to provide with modern energy **access** by nearly 4 million. It has also attained its goal to connect 15.000 social institutions and 25.000 entrepreneurs to modern energy services. The majority of access provided concerned access to 'basic' modern energy services, which sits well with EnDev's objective to provide access to poor households and organizations.

The access provided by EnDev is – by and large – additional: beneficiaries did not have access to modern energy services beforehand and were unlikely to be connected in the near future. We observed individual instances were these criteria were not met (for example because substantial parts of the target group were already using modern energy when the intervention started). These instances show that **additionality** cannot be taken for granted. *We recommend the rigorous application of the project selection and monitoring systems in place, and the systematic implementation of baseline studies.*

EnDev activities are frequently embedded in government programs with a considerable local financial contribution. While this can clearly be welcomed from an ownership and sustainability perspective, it creates difficulties in attributing outcomes to EnDev. To distinguish itself from more policy oriented technical assistance programs, EnDev correctly **attributes** access only to itself if its support is on-the-ground, significant and critical. *Additionally, we recommend to (i) limit the attribution of numbers in time, when stove producers, solar retailers or markets are developing autonomously; and (ii) more clearly distinguish and report on the beneficiaries it has facilitated with access and those that have been provided access to energy more directly.*

The **sustainability** of many country projects looks promising, although most face sustainability challenges common to any development intervention. In improved cook stove interventions, the envisaged commercial markets have not yet proven to be sustainable. *We reconfirm the need to (i) institutionalize EnDev's activities in-country (either through the uptake of the activities by local (government) stakeholders or through evolving market structures); (ii) systematically apply EnDev's sustainability checklist in country project monitoring and reporting; (iii) conduct mandatory but simple sustainability studies in all projects after x-years; and (iv) only upscale activities after x-years subject to revealed ownership by local (government) stakeholders or an evolving commercial market. Concerning* **environmental sustainability**, *we encourage EnDev to address the environmental risk posed by photo-voltaic batteries.*

EnDev is **cost-efficient** when measured against its own €20 benchmark. However, this benchmark does not reflect actual costs of a connection, nor differentiates between technologies. Whilst we appreciate the value-added of EnDev's €20 benchmark and support its continued use, *we recommend to additionally (i) report on the actual average costs of a connection, (ii) differentiate such actual cost figures according to technologies, and (iii) develop technology differentiated cost per connection benchmarks.*

Besides its access target, EnDev seeks to reduce **the health burden** of smoke and soot through its interventions, and confines itself to the promotion of technologies which are 50% more **climate friendly** than the baseline technologies. While the reduction of climate relevant emissions is probably small for electrification and Pico-PV interventions (kerosene for lighting is hardly used anymore, even in rural areas), for improved cook stoves it can be expected to be considerable. Most promoted improved cook stoves, though, are not geared towards a reduction in smoke exposure. Instead, EnDev targets resource savings and emphasises affordability and adaptation to local circumstances. In this, EnDev deviates from the Global Alliance for Clean Cookstoves.

Working towards autonomously functioning **commercial markets for improved cook stoves** is a constitutional part of most improved cook stoves interventions. Evidence that these markets are maturing is scarce. *Whilst supporting a continued push for market development, we recommend EnDev to also open up to publicly funded, long-term, public health oriented campaigns.*

The prospects for **commercial markets for solar lanterns and solar home systems** is promising, due to the strong demand for lighting and mobile phone charging capacity and the availability of high-quality and affordable products. Solar (home) systems and LED lamps are currently penetrating markets (without donor support) even in very remote areas. *We recommend EnDev to clearly define per intervention its value-added in developing the commercial market over what is happening anyhow.*

EnDev contributes to **effective development co-operation** as it (i) pursues inclusive development partnerships; (ii) is results-oriented; (iii) invests in capacity development of local stakeholders; (iv) is transparent about its activities and results; (v) is predictable in its activities; and (vi) shows strong accountability towards its donors. With its bottom-up approach to project development and implementation, EnDev is not focussed on raising the capacity or holding itself accountable to the recipient national governments (two other critical aspects of the Busan Partnership for Effective Development Co-operation). *We recommend EnDev to work with or support other development partners in raising the capacity of its national government counterparts to pursue rural (off-grid) electrification and the dissemination improved cook stoves and thus further foster the long term sustainability of its efforts. Moreover, we recommend EnDev to provide, annually, formal updates of its activities to the recipient national governments (to increase accountability towards the recipients).*

We have encountered a few examples where EnDev has inspired **transformational change** in the sector. EnDev has the potential to inform transformational change more frequently. However, currently it does not pursue this potential as its mission is to provide access, not to invoke regime changes. Although regime changes could – in time – lead to exponential increases in outcome numbers, they are hard to realize without any guarantee for success. The systematic pursuit of transformational change will require EnDev management and staff to (i) deepen their (common) understanding of what transformational change entails, (ii) develop approaches to foster transformational change in a conscious and systematic way; and (iii) invest resources (mostly in-country staff time) to initiate and support transformation processes. *We recommend the Board to decide explicitly whether it wants EnDev to pursue transformational changes and apply a systematic approach and allocate staff resources to achieving this.*

Program management

EnDev's strong performance is rooted in its mission and global outcome target, which provide the greatest possible clarity as to what EnDev staff needs to focus their energy on. Available funds, a dedicated project organization, on-the-ground presence, and GIZ's knowledge, experience and cloud are other **critical success factors**.

Management for development results is a distinguishing factor of EnDev. Up-scaling proposals are informed by results. This relationship is less strong that it could and should be. *To increase this linkage, we recommend the management to either approve up-scaling proposals for individual interventions and not allow the shifting of funds between country project components, or install more explicit and formal results-based management systems for the country teams. Management should also present up-scaling proposals explicitly against the results achieved so far. In addition, we invite the donors to commit funds with the least amount of restrictions as politically possible.*

EnDev is a global leader in **monitoring and counting** energy access connections. Yet, it lacks clear rules to validate reported numbers and assumed reduction factors. *We recommend EnDev to close this gap by (i) focussing monitoring on its accountability function regarding the – additional and sustainable – access to modern energy services provided, and not simultaneously seek to learn about the socio-economic impact of EnDev's interventions; (ii) systematically conduct simple surveys before and after interventions; (iii) systematically conduct simple sustainability studies for all projects a few years after the intervention has ended; and (iv) conducting random independent audits on country projects. To achieve cost-neutrality, we recommend EnDev to abstain from conducting expensive impact evaluation studies with its own budget and instead pursue (third-party financed) partnerships with academic institutions to conduct flagship impact evaluations.*

EnDev is characterized by a lean **governance and management** structure. Surprisingly, its core operating principles in its interventions, performance monitoring and management for development results, are not applied to the appraisal and remuneration of management and field staff. *We recommend the introduction of Governing Board committees on monitoring and evaluation, and management remuneration, as well as results-based appraisal and remuneration systems for management and (field) staff. We also recommend increased knowledge exchange between country teams and a more rigorous implementation of risk management.*

The international energy access community

EnDev has a **unique position** within the international energy access community: a government-funded initiative, with an implementation mandate, operational capacity, know-how and experience, and with significant funds for technical assistance and capital investments. This position allows it to contribute results and practical lessons learned. EnDev could expand its operations by obtaining further implementation mandates from other donors, programs or initiatives. *We recommend the Board to decide whether or not it wants to expand its funding base or obtain alternative implementation mandates from other energy access initiatives. If it decides to do so, EnDev should ensure that it maintains its clarity of focus and core operating principles.*

EnDev's promotion of the improved cook stove technology has contributed to the global uptake of the improved cook stoves agenda and the formation of the Global Alliance for Clean Cookstoves. EnDev has been **a leader** in operationalizing the management for development results agenda. Moreover, it participates actively in the international energy access community and contributed significantly to the definition of modern energy access in the SE4All Global Tracking Framework.

The reference group

The external **quality assurance** group embraced the evaluation report, which contains – in its view – a clear and rigorous analysis. Its members had a number of suggestions for follow-up analysis and presentations. First, they urged EnDev management to make this evaluation report publicly available and pro-actively share it with EnDev's development partners as it contains valuable insights and lessons for EnDev partners as well. Second, and related to the motivation of the first suggestion, several group members asked EnDev to present its development partners data and an analysis on how the outcome numbers and cost-efficiency of the program have evolved over time as well as how they are distributed geographically and according to technology. Third, one group member asked EnDev to provide more background on the type of energy access provided to social institutions and SMEs as well as a detailed classification of the type of social institutions and SMEs serviced. *We recommend (i) the Board to decide on whether this evaluation report is made publicly available; and (ii) the EnDev management team to publicise data and a detailed analysis on outcomes and cost-efficiency.*

Preface

When all was said and done, and we got underway with our interviews, we effectively conducted over 130 interviews in 6 countries in 6 weeks. Fortunately, time came back on our side with the postponement of the Governing Board meeting to June. This gave us a month of respite to sharpen our analysis and fine-tune our reporting.

We feel that over the course of the last three months, we have learned a lot about the EnDev program. We trust that our observations, analysis and recommendations will allow the Governing Board members and the EnDev team to further refine the EnDev program and continue to exert a positive impact on the lives of millions of people worldwide.

We express our gratitude to the EnDev team in Eschborn, which approached us with openness and candor. The same holds true for the EnDev teams in Lima, Kathmandu, Addis Ababa, Nairobi and Lilongwe. The EnDev country teams managed to put together – in a few cases at very short notice – highly informative and dense mission programs, including wonderful – at times even exciting – field visits. These mission programs were executed as smooth as one can only wish for. We extend a special word of thanks to these 5 EnDev country teams.

Geert Engelsman
Jörg Peters
Maximiliane Sievert
Gunther Bench
Hester Duursema
May 2014

1 Introduction

1.1 This Report

This document reports to the Governing Board of the Energising Development Partnership Program on the external evaluation of the program. This evaluation was commissioned – on behalf of the Governing Board – by the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) *GmbH*, which is the implementing agency of the program. The evaluation has been carried out by RebelGroup International BV (Rebel) and ecol GBR (ecol), which are also meant whenever this document uses the pronouns 'we' or 'our' and the noun 'the evaluators'.

This introductory chapter briefly highlights (i) the EnDev program, (ii) the reason for this evaluation, (iii) our terms of reference, (iv) the research questions, and (v) our evaluation methodology. Chapter 2 subsequently answers the research questions and formulates recommendations for the future implementation of the EnDev program. Chapter 3 addresses the OECD/DAC evaluation criteria: relevance, effectiveness, efficiency and sustainability.

1.2 The EnDev program

EnDev aims to provide modern energy services to poor households in developing countries at €20 per connection (or less). With the current budget this amounts to 10 million people for the second phase of the EnDev program (2009 – 2018) and 15 million people overall (i.e. for the period 2005 – 2018). In addition, EnDev seeks to connect 15.000 social institutions and 25.000 entrepreneurs to modern energy services.

Terminology
We acknowledge at this stage that EnDev has switched in 2013 from using the terminology 'providing access' to 'facilitating access', which reflects EnDev's activities and contribution more correctly. We dive deeper into this issue in section 2.1 of chapter 2. This evaluation (report) – covering the time-period 2009 – 2013 – has taken the original formulation as the starting point of analysis.

Over the last 3 years, the program has experienced a growth in numbers of donors and its budget. Whilst originally funded and governed by the Netherlands and Germany, since 2011 Norway, Australia, the United Kingdom and Switzerland have joined as donors and Governing Board (GB) members. Moreover, Ireland and the European Commission co-finance individual country activities. The Australian and United Kingdom funding are earmarked for improved cook stoves and the testing of results-based financing schemes respectively.

The program is implemented by GIZ through a dedicated project organization. A core management team is located at GIZ headquarters in Eschborn, Germany. This management team comprises staff from GIZ and the Netherlands' Enterprise Agency (or the *Rijksdienst voor Ondernemend Nederland,* RVO) of the Dutch Ministry of Economic Affairs [1]. Operational teams (of varying size) are positioned in the 24 countries[2] of operation in Africa, Asia and Latin-America. In addition, EnDev has commissioned the Dutch development organizations SNV and Hivos to conduct country projects (amongst others in Indonesia, Vietnam and Cambodia). The program is governed by a Governing Board based on

[1] The management team members from RVO, although very regularly present in Eschborn, also operate from the Ministry's offices in the Netherlands. For the sake of readability of this report, we refer to EnDev's program management or the EnDev team in Eschborn, which in this report then includes the team members based in the Netherlands.

[2] As of December 2013.

delegated cooperation agreements between the donors and the German *Bundesministerium für Internationale Zusammenarbeit* (BMZ) and an implementation agreement between BMZ and GIZ.

EnDev seeks to connect poor rural households, social institutions and small- and medium-size enterprises (SMEs) to the national grid, mini-grids powered by small hydro, solar or wind plants, or service them with solar home systems, solar lanterns, improved cook stoves (ICS) or biogas installations. In addition, EnDev promotes the productive use of electricity, by supporting local business development.

The program takes a bottom-up, results-oriented approach. Country teams together with local stakeholders from the government, civil society or the private sector identify, develop and implement dedicated projects to connect or service households, social institutions or SMEs with modern energy services. Projects are sought to start small and are only scaled up if successful. This is possible because funds can be allocated flexibly, i.e. for most parts funds are not tied to a technology or a country. However, EnDev does seek to allocate 50% of its funds to the African continent.

To ensure sustainable access to modern energy services, EnDev tries to work closely with local stakeholders, either as full-fledged implementation partners, technical support partners, or as technical assistance beneficiary. EnDev also seeks to support sustainable markets as much as possible: supporting the enabling (policy) environment, strengthening producers, and raising awareness amongst latent consumers.

The EnDev program is outcome and impact oriented[3]. It counts the number of persons, social institutions and SMEs it facilitates with energy connections or ICS. In its counting, it pursues a conservative approach: counting only new connections, which are not expected to be connected in the near future without EnDev's support. For this purpose, EnDev has set up an elaborate counting as well as monitoring and verification framework (addressed elaborately in our answer to research question 10 in section 2.10 and in Annex G on the applied counting rules).

Besides attaining outcome numbers, the program also seeks to: (i) reduce the health burden of smoke and soot in kitchens by at least 50% for 3,000,000 people, among them 2,000,000 women and children; (ii) promote technologies and services, which comply with international or EnDev standards; (iii) increase turnover in commercial sales of energy technologies promoted by the program by 10% annually on average; (iv) apply technologies, which on average are at least 50% more climate friendly with respect to their utility value than baseline technologies (e.g. emission per lumen, emissions per meal prepared, etc.). To ascertain its impact, EnDev has to date commissioned over 60 impact and sustainability studies.

A further structured overview of the EnDev program and portfolio is provided in Annex A.

1.3 Reason for the evaluation

This evaluation has been initiated by the Governing Board. For several Governing Board members a regular external evaluation of their development programs is obligatory. A first evaluation of the program was executed in 2008. Four years down the road another external evaluation was due. In

[3] I this report, we use the term result and outcome interchangeably, referring to the number of persons, households or institutions having gained access to modern energy services. The term impact refers to the socio-economic consequences for persons and organizations of having gained access to modern energy services.

addition, the Dutch government is in the process of deciding on a further contribution to the EnDev Program and wishes to include an independent assessment of the EnDev program in its decision-making process. Moreover, the EnDev management team is characterized by a strong learning culture. This evaluation is seen as another opportunity to learn and improve the program.

1.4 Our terms of reference

The objectives of the evaluation, as stated in our terms of reference (see Annex B), are:

- to review progress against the objectives and energy access targets set out in the design, to assess what the results are to date and to identify which additional measures are necessary to reach the stated objectives;
- to assess the strengths and weaknesses of the programme in meeting its objectives and targets (effectiveness and efficiency), to identify the perceived bottlenecks and shortcomings, the necessary remedial actions, to compile the lessons learnt and make recommendations based on these;
- to assess what is the added value of EnDev for donors as well as partner countries;
- to assess to what extent EnDev, despite having a bottom-up approach, has been able to inspire, influence and inform transformational change in partner countries and the global energy access agenda.

In support of above objectives, the EnDev management team formulated research questions for this evaluation to answer. We answer these research questions in chapter 2. For easy reference, we included the research questions in full in Annex C.

1.5 Evaluation methodology

This evaluation consisted of 3 work streams, which were executed in parallel, due to the limited time available for the evaluation.

1. **Program-level interviews**. We interviewed (i) the EnDev management team in Eschborn, (ii) Governing Board member representatives, and (iii) a wide-range of EnDev partners and key players in the international energy access community. See Annex D for a full overview of interview partners.
2. **4 country missions**. We conducted separate field visits to Peru, Nepal and Ethiopia, as well as a combined visit to Kenia and Malawi. In all five countries, we interviewed (i) the EnDev team, (ii) national and local government agencies, (iii) local implementing partners (either governmental or NGOs), (iv) GB country representatives, (v) EU and Ireland representatives, (vi) representatives of multilateral development banks and international energy access initiatives, (vii) private sector firms (stove producers, solar retailers, MHP operators), (viii) beneficiaries (communities, community utilities, households), and (ix) international and local NGOs. We also conducted site-visits to communities which have been connected to the national grid, micro hydro plants, stove producers, and solar retailers. See Annex D for a full overview of interview partners.
3. **Desk research.** This included:
    a. a systematic review of 50 impact evaluation studies on geographical and thematic coverage and methodological rigor and consistency;
    b. a critical review of EnDev's counting rules, including its adherence to the SE4ALL tracking framework;

c. a review of EnDev's core documentation such as (i) the annual planning documentation, annual progress reports, monitoring and evaluation framework, country fact sheets, etc.; and (ii) the delegated cooperation agreements between the donors and BMZ.
d. a web research on the most relevant international energy access initiatives.

In support of the program-level and in-country interviews, we drafted a questionnaire based on the objectives of the evaluation and the research questions from the terms of reference. We have included this questionnaire in Annex E

At the outset, we also prepared a set of working hypotheses, which were assumptions on the potential answers to the research questions. The role of these working hypotheses was twofold: (i) they sharpened our thinking, focussed our attention on what we needed to prove, and thus indicated the type of data and research methods required; and (ii) they provoked, they triggered our interviewees to take a stance, allowing us to make further inquiries into this stance, and thus allowing an informative dialogue to unfold. In this respect, the working hypotheses served their purpose.

Initially, we thought to update these working hypotheses as we progressed through the evaluation. We abandoned this plan once it became clear that we would have to conduct the above work streams in parallel (rather than sequentially). So whilst they served their purpose initially, they lost relevance once the evaluation progressed. And whilst at least some of the working hypotheses were contentious from the outset, we decided not to include these working hypothesis anymore in this report, either in answering the research questions or as a separate annex, as they would merely distract attention and no longer serve a constructive purpose.

Finally, we benefited in this evaluation from the experience of the ecol-team members with the EnDev program. As members of the research institute RWI, they have conducted rigorous evaluation studies on EnDev projects in Benin, Burkina Faso, Ghana, Indonesia, Mozambique, and Senegal. These studies were commissioned by the Dutch Ministry of Foreign Affairs and the GIZ Independent Evaluation Unit.

1.6 Reference group

On behalf of the Governing Board, GIZ has installed a formal Reference Group for this evaluation.

Member	Organization
Willem Cornelissen	Policy and Operations Evaluation Department, Ministry of Foreign Affairs, Netherlands
Jens Drillisch	KfW Development Bank
Nico van der Linden	Energy Research Centre of the Netherlands
Benjamin Sovacool	Director of the Centre for Energy Technology at Aarhus University, Denmark
Matt Spannagle	DelAgua Health

The task of the Reference Group is to assert the quality of the evaluation methodology, the analysis, conclusions and recommendations, and the clarity of reporting. On 14 February, we held a teleconference with the reference group on the inception report, in which we discussed the application of the questionnaire and working hypotheses. Moreover, the reference group made useful suggestions for additional interview partners, which we happily took on board. On 27 May, we reviewed the draft final report with the Reference Group. Minutes of the meeting can be obtained through EnDev management.

2 Answering the research questions

2.1 What has EnDev achieved so far? Does the progress so far meet the planned objectives in terms of output and outcomes? What is the overall effectiveness and efficiency of the partnership in achieving common GB donor objectives and results? Does the partnership and program contribute to the realization of common development cooperation objectives? To what extent are country projects designed to reach designed objectives and desired impacts?[4]

Introduction

We distill from the donors' Delegated Cooperation Arrangements with BMZ the following defined objectives and desired impacts:

1. sustainable access to modern energy technologies and services for poorer households, social institutions and small and medium-size enterprises;
2. on average a maximum of €20 of energy access costs per beneficiary;
3. a reduction in the health burden of smoke and soot of at least 50%;
4. compliance with international or EnDev standards for all promoted technologies;
5. a 10% increase in commercial turnover "related to energy technologies", excluding turnover financed by the EnDev program itself;
6. promoted technologies are at least 50% more climate friendly regarding their utility value than the baseline technologies;

We will address the effectiveness and efficiency in obtaining the 6 objectives below in separate subsections.

2.1.1 On providing sustainable access to modern energy technologies and services

This subsection contains the longest answer to any of the research questions (which generally are a half to two pages in length). The reason for this longer answer is that we will address the multiple and critical dimensions of this objective comprehensively (and refer back to this analysis in answering subsequent questions, whenever relevant). These multiple dimensions are the provision of access, the concept of modern energy services, as well as the additionality, attribution and sustainability of access. When addressing the issue of sustainability, we will comment on the institutional arrangements in place, i.e. whether the technical or financial assistance will be taken over by a local (government) institution or a commercial market has evolved.

2.1.1.1 Access

According to EnDev's own figures, by December 2013, EnDev has provided 12.26 million persons with access to modern energy services.[5] Given expenditures to date, EnDev's global outcome target would

[4] This section addresses both research question 1, 8 (in part), 14, 15 and 17 (in part).From question 8 it addresses the status of progress. From question 17 it deals with the selection and design of country projects. See annex C for an overview of the 20 research questions for this evaluation.

[5] This is the adjusted or discounted number of people with access to modern energy. This figure takes into account the Sustainability Adjustment Factor (which takes into consideration that the access to modern energy technologies is not sustainable in all cases), the Windfall Gain Factor (which takes into account that some households would have gained access to modern energy services anyway even

have been: 8.4 million persons[6]. Accordingly, EnDev has exceeded the number of persons it has aimed to connect to modern energy services by nearly 4 million.

We take from the donors' Delegated Cooperation Arrangements with BMZ that EnDev strived to connect 15.000 social institutions and 25.000 entrepreneurs to modern energy services. We take from the Progress Report 2013 that EnDev has thus far extended access to electricity or modern cooking technologies to 15,700 social institutions and 28,300 SMEs. EnDev has thus also attained this goal. Moreover, we observed during our country visits and in our previous EnDev work that projects are designed to provide access to (more) modern energy to poor households, social institutions or SMEs. In designing its interventions, EnDev clearly had the energy end-user and the energy end-use in mind.

We note that in the second phase of EnDev, it has thus far provided 5.71 million persons with access to improved cook stoves and 1.63 million persons with access to electricity[7]. The biggest gains in the provision of access to energy have been made through the promotion of improved cook stoves. We understand from our interviews that this is the result of a strategic decision at the outset of EnDev 2 to focus the majority of resources on improved cook stoves. We also take from our interviews that the Governing Board has recently decided to reverse this strategic focus in favor of electrification activities.

The subsequent table further differentiates the electrification outcome numbers according to the tier-system of the Global Tracking Framework by the SE4ALL initiative. The table highlights that the majority of access provided concerns access to basic modern energy services, i.e. lighting, use of a radio and telephone charging equipment. Given that EnDev focuses on the provision of access to poor households without previous access to any form of modern energy, the focus on the provision of tier 2 energy services makes sense to the evaluators.

Tier	Description	Adjusted outcome numbers
5	tier 4 services + use of devices typically requiring several kilowatts, such as air conditioners	227,078
4	tier 3 services + use of devices typically requiring a kilowatt, such as water heaters, irons, vacuum cleaners	180,075
3	tier 2 services + use of devices typically requiring a few hundred watt, such as rice cookers, refrigerators, freezers	134,522
2	bright light, use of radio and telephone + other devices typically requiring some tens of watts, such as TV, video, fan, computer	1,005,824
1*	picoPV, battery charging stations	84,369

* For its outcome target, EnDev is counting only a fraction of the above-mentioned persons within tier 1, as battery charging and pico-PV usually do not supply a full household (average 5 persons).
Source: Progress Report 2013, March 2014

without EnDev support), and the Double Energy Factor (which accounts for households and social infrastructure institutions which already have access to one form of modern energy services either in the same or another category, i.e. modern cooking energy technologies or electricity).

[6] EnDev's global outcome target has been derived at by taking the total expenditures of EnDev 1 and 2 until December 2013 (€ 167,5 million) and divide it by EnDev's benchmark to provide at least one person with a modern energy connection for every € 20 spend.

[7] Progress Report 2013, March 2014

2.1.1.2 Modern energy services

EnDev projects promote electricity access (ranging from Pico-PV kits or task lights to on-grid connections) and access to improved cook stoves. The electricity technologies that EnDev promotes qualify as modern. Pico-PV is a borderline case, since the possible energy services are very limited. Yet, it is acknowledged by the SE4ALL Global Tracking Framework as a first step towards modern energy (tier 1 of the Global Tracking Framework is explicitly targeted towards Pico-PV).

EnDev's improved cook stoves do not qualify as modern according to the SE4All Global Tracking Framework or in the understanding of the GACC. Both initiatives apply an absolute definition of modern, which – in the case of improved cook stoves – centers on certain reductions in emission levels. EnDev applies a relative definition of modern energy: improved cook stoves are accepted as being modern if they achieve a 40 percent reduction of wood fuel consumption per stove application compared to the baseline scenario (e.g. a three-stones stove). Effectively, EnDev promoted stoves are rather geared towards resource savings, ease of use and have a strong focus on affordability. We deem this understandable and even recommendable from a poverty alleviation point of view: EnDev stove customers are relieved from major burdens either expenditure or work load wise.

EnDev is working on a new classification system for improved cook stoves similar to the Global Tracking Framework for electrification efforts. This new classification will distinguish different access levels (tiers) based on emission levels, fuel efficiency, energy source, affordability and safety aspects.

2.1.1.3 Additionality of access

We take from EnDev's project selection criteria and counting methodology that access is only deemed to be provided if the beneficiaries (i) did not have access to modern energy services beforehand or (ii) were unlikely to be connected to modern energy services in the near future without the respective EnDev intervention.

We start with some observations from the field. These principles were clearly met in Ethiopia, Malawi and Kenya. For the stove components of these projects, EnDev was the only organization actively promoting the dissemination of stoves (at least on a large scale and in the particular rural areas of operation) and penetration levels were low before the EnDev activities started. For the electrification efforts in Ethiopia, we note very low rural electrification rates, a government which focusses on large scale renewable energy generation and extension of the national grid, and little to no overlap (geographically speaking) of donor activities.

We cannot make a similarly clear statement on the electrification efforts in Peru and Nepal. In Peru, the national government extends the national grid. EnDev Peru subsequently supported households with the in-house installations. According to our interview partners, the vast majority of these households would also have installed in-house connections without EnDev's support. We understand that EnDev management has in the meantime discounted these connections from its aggregate outcome numbers.

In Nepal, we found several cases where EnDev's financial support was modest (for the on-grid electrification component) or only slightly more concessional than regular commercial financing (for the MHP component). We also visited communities, which had already been connected to another MHP beforehand (but with unsatisfactory service levels) or where the MHP was all but finished before the community applied to EnDev for the financial support. According to statements of stakeholders,

both at the national and local level, the communities we visited would also have been connected without EnDev support. The selection of above mentioned communities could have been the result of the non-application of EnDev's project selection criteria and the lack of a baseline study. According to EnDev's implementing partner, the National Association of Community Electricity Users Nepal (NACEUN), the on-grid beneficiaries have been selected on a first-come, first-serve basis (rather than on a needs basis).

We note that the above observations regarding the Nepal program are based on a few projects within a larger country project. We cannot infer that the same holds true for all supported communities. The EnDev team in Eschborn, which has been closely involved in shaping the Nepal project, acknowledged that the communities we visited might in retrospect have to be discounted for in the overall country outcome numbers. They stressed however that at the start of the project, it was clear that the targeted communities were not connected to modern energy services nor were likely to be connected in the near future without EnDev's support. From our point of view, these single observations simply show that additionality cannot be taken for granted and that the project selection and monitoring systems, which EnDev has put in place, need to be applied rigorously. Similarly, baseline studies, which EnDev does conduct, could probably be implemented more systematically.

2.1.1.4 Attribution of access

EnDev was originally said to 'provide' access to poor households, social institutions and SMEs. In 2013, EnDev adopted the terminology to 'facilitate' access. In our experience, the term 'facilitate' is indeed more in accordance with reality. In practice, EnDev expenditures (and efforts) only represent part of the actual costs (and efforts) of connecting a person or organization to a modern energy service. In many cases, part of the investment costs are borne by the beneficiaries (who pay for the improved cook stove or SHS), governments (as they cover investment costs for on or off grid electrification), or other donors (who co-finance interventions or provide grants to governments to cover the investment costs of on or off grid electrification). Not least, the term facilitate comes closer to EnDev's ambition to foster markets where the decision to invest into system or not is done by the beneficiaries themselves.

But even with the term facilitation, attribution of numbers to EnDev is challenging. First, EnDev does not want to put itself on par with bilateral (e.g. BMZ – GIZ) technical assistance programs, which could at times claim to facilitate energy access by (just) pushing through the necessary policy reforms. EnDev has addressed this issue by defining explicitly when energy access is attributable to EnDev activities, which revolves around their support being direct, significant and critical.

Second, the question is how much and how long EnDev should claim access numbers. This question emerges for example as supported markets become (more-or-less) self-sustaining. This is particularly relevant for solar lanterns and for improved cook stoves. We observed several instances in Ethiopia where the growth in stove production or the (initial) sale of solar lanterns was as much a product of the producers' ingenuity and entrepreneurship as of EnDev's support. Although EnDev could have triggered this development, the subsequent growth in numbers can be attributed less clearly to EnDev.

The working rule currently is that EnDev keeps counting those sales numbers as long as they remain in contact with the retailers or producers (even after the direct technical assistance has been concluded). EnDev Kenya is a test case in this regard, since the project has started to pull out its intervention of certain regions where the project expects to have achieved self-sustaining structures. One has to bear in mind though that country teams do not have the incentive to retract from such (established) markets or successful producers and retailers, given that it can record further outcomes without additional

interventions. We do not have a solid answer to the question how long EnDev should claim access numbers, but can imagine some limitation in time.

The major challenge of the Endev counting system accordingly is to find a way to meet two aspirations: on the one hand, EnDev wants to report a conservative, transparent, and *clearly attributable* number of beneficiaries. On the other hand, EnDev wants to encourage projects to leverage additional funds and ensure sustainability that should be rewarded through the counting system. The currently applied counting system already does quite well in delivering EnDev beneficiary numbers that are conservative and that encourage leveraging local funds. However, this comes at the cost of a few issues and inconsistencies in terms of transparency and attribution. In Annex G, we provide an exhaustive critical review of the applied counting rules and propose some easy-to-implement changes.

Most importantly, we see the need to treat partner country contributions in the same way as contributions of other international donors. This could possibly be solved by slightly modifying the counting formula (see also Annex G), which would lead to distinguishing between two different net beneficiary numbers in the reporting. The following proposition for a wording might help to illustrate the idea: 'In cooperation with partner country governments and other stakeholders, EnDev has facilitated X million people to sustainably access modern energy. For Y millions of these people, the facilitation of sustainable access can be attributed to EnDev's contribution alone.'

The first number (the 'X') includes local contributions that EnDev leverages. In doing so, it is humble and accurate to use the term 'facilitation'. The second number (the 'Y') concentrates on EnDev's direct contribution. It thereby values EnDev's engagement, which comes closer to the literal sense of 'provision' of access. We believe that this slight modification in the counting system would reflect EnDev's original idea of doing close-to-the-beneficiary access projects and at the same time acknowledge EnDev's endeavor to trigger local funds and contribute to transformational change on the policy level. It is important to emphasize that this modification basically does not induce additional costs. Except for figures on local contributions, the required numbers are already being collected by the EnDev monitoring system.

2.1.1.5 Sustainability of access[8]

Some observations from the field

For the ICS in Ethiopia and Peru, sustainability of access seems promising as government ownership of the promotion of ICS is strong (as evidenced by national programs supporting the distribution of clean cook stoves), which is likely to ensure that households are able to replace their ICS even if EnDev is no longer active in the field. In Ethiopia, EnDev can also be proud that the government takes the same commercial approach to developing the sector (no subsidies, training producers, ensuring quality, and raising awareness) as EnDev has taken over the past 8 years.

For ICS in Malawi, Kenya and Ethiopia, EnDev is working towards autonomously growing markets. Evidence of maturing markets is still scarce. The ICS market in Malawi is still very nascent. On the one hand, EnDev's approach targets a prevailing market gap (that of the missing wholesale retailer). On the other hand, EnDev's approach is highly interventionist, dependent on the success of one player, and

[8] This section addresses also research question 15 on the mobilization of local resources and initiatives relevant for a long term provision of access to modern energy services

risking a monopolistic wholesale market. In Kenya, EnDev takes a non-interventionist approach, supporting a wide-range of stove producers instead and conducting general awareness raising and quality assurance campaigns. A sustainability study conducted in 2013 showed very high penetration rates of the ICS technology, but also low maintenance and replacements figures. In Ethiopia, no interview partners claimed an autonomous market was evolving (not in the least because the promoted ICS technology does not lend itself for road transport). All in all, we hold the view that the stove dissemination interventions are not yet sustainable in the sense that autonomously working markets have taken over. A view shared by all but one program-level interview partner. Moreover, EnDev's Uganda experience shows that the sustainability of a market should not be proclaimed to early.

For on-grid electrification projects, sustainability in most cases seems to be warranted (e.g. Benin, Bolivia, Peru and Nepal). The operation and maintenance of these grids are normally business-as-usual for utilities, so the long term provision of electricity is not at stake. The only issue here can be the reliability of the electricity provision, since in some cases outages are daily fare. The on-grid electrification in Nepal, which is devolved to the communities with regard to the communal distribution network, suffers from low electricity rates, preventing the communities to build up the necessary reserves for future maintenance and replacements of parts of the distribution network.

Decentralized off-grid EnDev projects mostly involve a private operator (Senegal, Mozambique) or a community based operational model (Ethiopia, Indonesia and Nepal). In general, i.e. beyond EnDev, running decentralized mini-grids in a sustainable way is always difficult. Sustainability depends on many factors, not least a tariff structure that covers the operation costs, but also allows for financing major maintenance or even replacement investments. Also for EnDev, this is not always fulfilled; in particular in community operated mini-grids the tariffs are often too low. In operational models run by a private operator the entrepreneurial skills of the operator are obviously key. It is thus unclear if EnDev has already cut the Gordian knot of mini-grid sustainability, but the mentioned aspects are not new to EnDev and they are high on the agenda of virtually all affected projects.

The sustainability of solar systems for social institutions, such as those for health centers in Ethiopia, depends on the willingness of the responsible government institutions to pick up the operations and maintenance bill. EnDev Ethiopia managed to convince the Ministry of Health to sign maintenance service contracts with private companies instead of relying on personnel of the Ministry, which can be expected to improve the quality of maintenance. One of the interviewees labeled this as a 'little revolution in Ethiopia'. While the regional health bureaus committed to assure for sufficiently large budgets to finance this maintenance (and also dispose of resources freed up from savings in kerosene for fridges), it is not evident at this time that potentially expensive repair activities will indeed take place.

The sustainability of EnDev's support to pico-PV systems appears promising. Local entrepreneurs in district towns appear to respond to the strong demand from poor households for mobile phone charging capacity and lighting. Availability of good quality products seems secured (at least in Ethiopia and Kenya) by the promotion of Lighting Africa certified products by the national and regional governments.

General assessment

In general, we observe that EnDev is very much sensitized for sustainability issues and due to its close contact to the field most EnDev projects are very much aware of the critical parameters in the respective cases. Our field observations make clear that EnDev's interventions (naturally) face

sustainability challenges common to any development intervention. We can only reconfirm the need to (i) pay sufficient attention to those factors, which ensure the sustainability of interventions (i.e. revealed government ownership, the uptake of the efforts by local partners, local technical and financial capacity, evolving market structures, an enabling policy environment, etc.), and (ii) systematically apply EnDev's sustainability checklist, monitor and report on sustainability, and of course only upscale activities after x-years subject to revealed ownership by the government or clear prospects of a viable commercial market.

On stoves and subsidies

As noted above, EnDev has a strong sympathy for market based approaches to ensure the sustainability of interventions and sometimes explicitly rejects the possibility of structurally subsidizing the provision of modern energy services. This is in particular the case for improved cook stoves. In electrification components, however, subsidies prevail (except for Pico-PV activities) as governments often cover the investment costs of the electrification efforts. EnDev's justification for supporting subsidies in electrification components are the higher costs of electrification technologies and the higher political support in the partner countries for subsidies in electrification interventions as compared to improved stove activities. Obviously, this makes it easier to implement sustainable subsidy schemes. The high investment costs and political support are not given in case of the improved cook stoves.

We recognize that in the early decades of improved stove promotion governments subsidized improved stoves in a discretionary and hence non-sustainable way, which led to the breakdown of the subsidized markets. However, there is no reason why subsidized markets would break down if subsidies are institutionalized sustainably (like EnDev is pushing for in the electrification sector, e.g. feed-in tariffs, revolving subsidy funds). We believe that institutionalizing subsidies is possible today given the changes in the political environment in recent years with biomass for cooking being high on the agenda of many donor agencies and also governments nowadays. Furthermore, evidence from research on cook stove (non-)adoption has shown that it is mostly financial constraints that keep households away from investing in cook stoves (and not cultural traits or the like).

Being more open for more direct financial promotion of improved cook stoves also seems to be recommendable as the market based approaches have not yet proven to be working in a sustainable way. All EnDev projects are still investing substantial efforts into these markets by training producers and monitoring the quality standards – although they have mostly been running for many years already. EnDev staff in the countries make statements suggesting that the markets will not be self-sustaining in the foreseeable future and also in GIZ headquarters leading stove experts establish that so far none of the supported markets are working in a sustainable manner. The cure that is frequently mentioned by stove experts at GIZ is that the preferences of households need to be changed, since it is believed that people are systematically taking allegedly irrational decisions against investing into an improved cook stove.

There is quite some evidence in the research literature, though, that the decision not to buy an improved cook stove is rational, simply because these poor strata have more urgent needs to meet in their daily life. The classical example of people investing into mobile phone usage (and not cook stoves) is partly true, but also not the fully story. People have to live on very small money and have to cushion against health and environmental shocks or make payments for educational expenses and festivities. Against this background, subsides seem to be a sensible approach and also justifiable from an economic point of view given the many private and social returns of improved cook stove usage.

2.1.2 On average a maximum of €20 of energy access costs per beneficiary

EnDev has formulated the objective that 'at least 1 person will have sustainable access to modern energy technologies and services for every € 20 spent'. This objective has been formulated for the overall program, i.e. country projects can deviate from this figure. According to its own figures and as noted before, EnDev has provided 12.26 million persons with access to modern energy services by December 2013. The total expenditures of EnDev 2 until December 2013 amounted to € 107.5 million.[9] Total expenditures under EnDev 1 were €60 million. The above figures provide us with an estimate of an average costs of €13.66 per person connected. EnDev has thus achieved its objective.

The use of a single average costs figure bears the risk of biasing the program towards cheaper technologies: connecting people by grid extension costs between € 500 and € 1000, an improved (non-bricked) cook stove between € 2 and € 15. Our country experience shows that EnDev has actively pursued expensive options, such as on-grid electrification (e.g. Benin, Nepal), MHPs (e.g. Ethiopia, Rwanda and Nepal) and solar installations for social institutions (e.g. Ethiopia). As such, the cost-per-beneficiary goal does not prevent EnDev from pursuing more expensive energy access interventions. Still, a bias towards cheaper technologies exists, which might come to the fore in a more subtle way, namely by favoring simpler improved cook stoves rather than e.g. more advanced combustion stoves that cost between 20 and 100 Euros.

We realize that the problem with technology differentiated cost-per-beneficiary targets is that one cannot distill so easily EnDev's 'quantified global target for the number of persons facilitated with access to modern energy'. We believe this global target is highly beneficial as it focuses the attention of all stakeholders on achieving results. To that end, we deem it beneficial to maintain the € 20 average costs target. We welcome EnDev's intention however to develop a technology differentiated average costs table against which country projects can be benchmarked. This provides (i) a management tool to assess whether proposed average costs of interventions are reasonable; and (ii) a means to distill a target to the country teams for the number of people to be connected given the allocated budget to an intervention.

2.1.3 A reduction in the health burden of smoke and soot of at least 50%

Reducing the energy related health burden has always been high on EnDev's agenda. However, most EnDev improved cook stove dissemination interventions are the heritage of earlier GIZ stove dissemination projects that were mostly targeted towards resource savings. The EnDev projects in Burkina Faso, Senegal, Malawi, and Kenya, for example, are disseminating biomass cook stoves that can be expected to achieve perceivable or even considerable wood fuel savings, but which are not geared towards a reduction of smoke exposure that would be considered sufficient by most air pollution experts. In order to claim that these biomass stoves contribute to a reduction of health burden, accurate state-of-the-art measurements (in controlled cooking tests etc.) of smoke emissions should be conducted. While this has hardly been done hitherto, test procedures are currently ongoing in many countries (e.g. Burkina Faso, Senegal and Benin).

In principle, also electrification interventions reduce a major health burden, the very sooty and toxic smoke of kerosene lamps. At least in rural Africa, though, kerosene is hardly used anymore, even in remote areas. People have replaced kerosene almost completely by dry-cell battery driven LED-lamps.

[9] Progress Report 2013, GIZ, March 2014

2.1.4 Compliance with international or EnDev standards for all promoted technologies

We note that international standards have only been developed during the last years in particular as part of the SE4All initiative and have led to the development of the Global Tracking Framework. EnDev has and is still contributing to this framework. In general, we observe that for electrification projects, EnDev technologies are compliant with international standards. Also, Pico-PV products that are promoted by EnDev are certified by Lighting Africa. For improved cook stoves, it is less clear: see our discussion on the provision of 'modern energy services' by EnDev (section 2.1.1.2). In the case of improved cook stoves, EnDev has in many countries set the standard and clearly complies with its own standard as asked for in capped objective.

2.1.5 An annual 10% increase in commercial turnover "related to energy technologies", excluding turnover financed by the EnDev program itself

We interpret this objective in the following way: EnDev would like to see (or even achieve) an annual 10% increase in market volume for promoted technologies. This objective can only meaningfully be applied to tradable technologies, such as improved cook stoves, SHS and PicoPV systems. We have not observed the existence of commercial markets for improved cook stoves making it practically impossible to measure the turnover of all stove producers in a country. Commercial markets do exist for SHS and PicoPV systems. If the national statistical bureaus would measure turnover volumes, it would be possible to assess whether the capped objective has been achieved for these particular technologies. But even if one would be able to provide annual turnover (growth) figures, it would be a bold claim to attribute these to EnDev's activities. As observed during our field missions and previous field work , the sale of solar lanterns and SHS by retailers only comprise a small share of their business and their success in selling these products can only to a limited extent be attributed to EnDev (their own entrepreneurship being another important driving factor). In conclusion, we have difficulty in seeing the feasibility and value-added of this particular objective.

2.1.6 Promoted technologies are at least 50% more climate friendly regarding their utility value than the baseline technologies

Virtually all EnDev projects promote technologies that are more climate friendly than the baseline technology. Kerosene lamps emit CO_2, while electricity is in many cases mostly coming from hydro power and even in case the electricity is generated based on fossil fuel it is done so much more efficient. LED lamps that have widely made inroads into African households, in contrast, are run on dry-cell batteries, which are environmentally harmful but do not emit climate relevant gases. Kerosene is in fact hardly used anymore, even in remote areas. Biomass for cooking can induce climate relevant emissions. Black carbon (a non-Kyoto substance, though) stemming from burning biomass is said to be highly climate active. CO_2 is emitted to the extent that the wood fuel is exploited in a non-sustainable way, which leads to a loss of carbon sinks. Roughly spoken, charcoal is said to be produced from large trunks that are in many cases not sustainably exploited and lead to deforestation. Firewood, in contrast, is collected from dead wood mainly and hardly contributes to deforestation. Nonetheless, also firewood collection accelerates degradation processes and a loss of carbon sinks. Altogether, while electricity technologies promoted by EnDev will only induce a small reduction in climate relevant emissions, improved cooking technologies that lead to reduced wood fuel consumption can be expected to trigger substantial climate gas abatement.

2.2 Are the representatives of the donors in the Governing Board and the implementing organizations satisfied with the results of the partnership so far, do they have suggestions for improvements?

We have received the following feedback and suggestions from the GB member representatives, which speak for itself and invoke and unequivocal yes to this research question.

Feedback

The donor representatives in particular voiced their appreciation for:

- the program in general: an unique and globally leading program, which includes different approaches and technologies to extend energy access, has operational scale, achieves real connections, and is cost-efficient;
- its results-focus, willingness to get its hands dirty, and ability to test alternative and innovative approaches (amongst others market development and RBF);
- the conservative counting methodology, advanced monitoring system and clear accountability mechanism;
- the high-quality leadership and management of the EnDev team in Eschborn, including its willingness to clear hurdles, its responsiveness to specific donor requests, and its flexibility to use funds within predefined time-frames.

Suggestions for improvement

The donors were not homogenous in their suggestions for improvement. At least two donor representatives voiced the suggestions below.

- Focus and selectivity is important to ensure that resources are not spread too thinly, a minimum operational scale of country projects is achieved, and projects can be scaled up more than presently the case.
- Continue to coordinate EnDev activities with other international energy access initiatives to prevent inefficiencies from occurring; EnDev's operational experience gives it a lot to contribute.
- The Governing Board would do well to focus its deliberations on bigger, more strategic questions: e.g. what are the overall risks and opportunities to the program?

Individual donor representatives provided the following suggestions.

- It would be good to collect more information on the success of up-scaling proposals, both in terms of access numbers and socio-economic impact (because these up-scaling proposals have in part been informed by available funding rather than results achieved).
- EnDev's cooperation with organizations like Practical Action and SNV proof productive and deserve replication (not in the least because civil society needs to be included if universal access to energy is to be achieved).
- EnDev should remain open to work with other (local and international) implementation partners (with EnDev in a more supportive rather than leading role) where this can generate value-for-money.
- EnDev should focus even more on private sector development: supporting the evolvement of high-quality producers. EnDev's challenge will be to do this and maintain a lean organization.

- EnDev would do well to formulate an overarching theory of change, in particular how EnDev can support wider market developments (rather than supporting individual market players or its preferred technologies).
- To embrace more modern cooking technologies, which are more efficient and reduce the health burden of smoke.
- EnDev should increasingly work with governments to set-up national cook stove programs (in recognition of the public health benefits of improved cook stove usage).
- Whilst appreciating EnDev's bottom-up approach to achieving results, it is important for the sustainability of the EnDev interventions to link up with the dialogue and policy discussions at a national level.
- EnDev should develop an explicit value-for-money approach to continuously improve results and reduce costs.

Implementing organizations

The use of international development organizations as implementing partner of country projects – partly in parallel and on par with GIZ executed work – is a very recent development. The organizations concerned[10] thought it too early to pass judgment on the partnership and the ongoing country activities. They did recognize the complementarity between their organizations and EnDev, with EnDev having a strong energy access focus and the implementation partners concentrating more on institution building (either governmental or market-based institutions). The cooperation with EnDev was also deemed beneficial to these partner organizations as it provides for additional financial resources to meet their development aspirations. The personal cooperation with the EnDev team in Eschborn and in the countries of operations was considered to be good.

[10] We conducted headquarter-level interviews with the Dutch development organizations and EnDev implementing partners SNV and HIVOS.

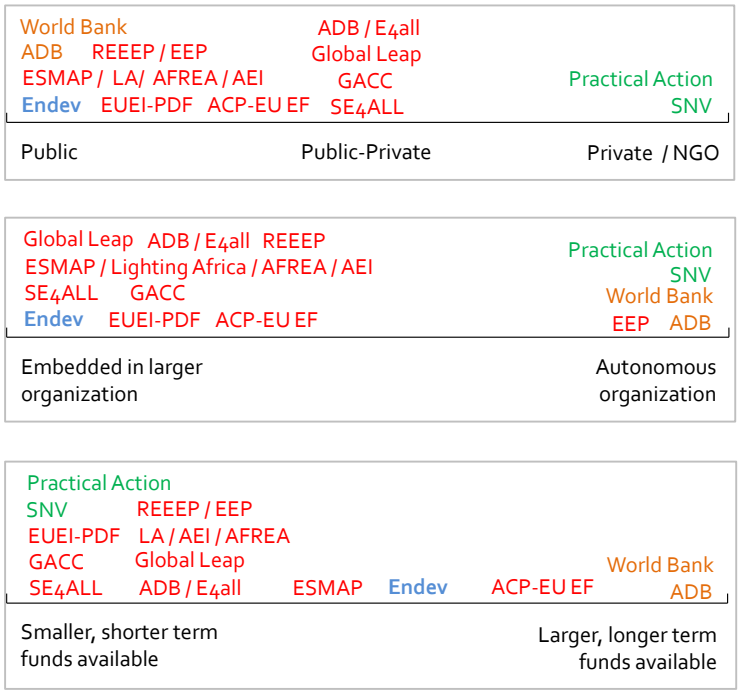
2.3 What is EnDev's relevance with regard to global initiatives and developments on the SE4All agenda? What opportunities and threats exist for alignment and cooperation?

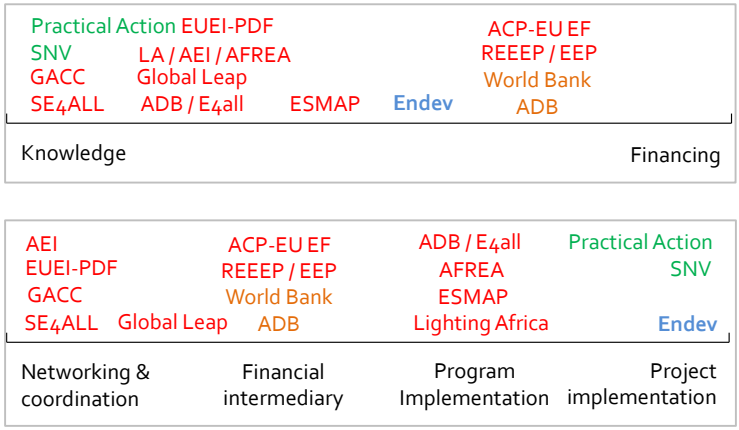
To ascertain EnDev's relevance within the international energy access community, we have taken a closer look at the following international energy access initiatives. Annex H presents fact sheets on each of these initiatives.

- UN: SE4All
- World Bank and IFC: Lighting Africa
- World Bank: ESMAP, AFREA, Africa Electrification Initiative
- Asian Development Bank: Energy for all Initiative (ADB/E4ALL)
- UN Foundation: Global Alliance for Clean Cook Stoves (GACC)
- Clean Energy Ministerial: Global Leap
- EU: EUEI-PDF, AEEP, ACP-EU Energy Facility
- Multi-donor: Energy+, REEEP, Energy and Environment Partnership

The figure below categorizes the above initiatives along a number of distinguishing factors. International financial institutions like the World Bank and the ADB also play a prominent role in the energy (access) sector in their own right (i.e. apart from being the executing agency of some of the abovementioned initiatives). Moreover, many development organizations are active in the promotion of energy access. For the sake of illustrating the scale of actors and the position of EnDev on that scale, we have therefore also included the World Bank, ADB, SNV and Practical Action in below figure. The latter 4 actors should thus be seen as mere examples of a category of players.

Figure 1 Schematic overview of prominent players in the international energy access community





EnDev is a donor government initiated and driven program, which is embedded in a larger development organization. In this regard, EnDev is no different from many other initiatives, such as SE4ALL, ESMAP, GACC, Energy for All Partnership or EUEI-PDF. What distinguishes EnDev from other initiatives is that it has substantial funds (i.e. €202 million for phase 2), allowing it to provide both advisory services and cover investment costs (through grant financing). Moreover, EnDev has 'feet-on-the-ground', allowing it – in close collaboration with local stakeholders – to initiate, develop, implement and follow-up concrete projects providing energy access directly to the beneficiaries. Albeit formally a 'program', EnDev is much closer to the development organizations like SNV and Practical Action than to the above mentioned initiatives.

EnDev has a unique position within the international energy access community: a government-funded initiative, with an implementation mandate, operational capacity, practical know-how, years of experience, and with significant funds for both technical assistance and small investment financing. This unique position allows it to contribute to the international energy access agenda: (i) results (e.g. household connections); and (ii) lessons learned (in implementing projects, in monitoring and counting results). Moreover, we observe that EnDev actively participates in the development and dissemination of concepts, tools and instruments (e.g. monitoring methodology and SE4ALL tracking framework).

EnDev's unique position gives it – in and by itself – the opportunity to expand its operations by securing further mandates either from individual donors or other initiatives. EnDev could become the implementing agency for a wider-range of donors or even energy access initiatives. This would allow EnDev to increase its funding, expand its operations, and reach more households, social institutions and SMEs in developing countries. Such an expansion however also harbors a threat: as individual donors tend to come with special requests (as directly experienced by EnDev with the joining of Norway, Australia and the UK as donors), EnDev's clarity of focus can dilute, which is likely to threaten its effectiveness and efficiency.

2.4 What do stakeholders consider EnDev's Unique Selling Points? How do local stakeholders perceive EnDev? Are the goals and objectives of EnDev consistent with these comparative advantages? What is the base for its success and which success factors for the outcomes and impacts have been assessed?[11]

Unique selling points

The program-level interviews brought forth the following perceived strengths of EnDev.

- Sector knowledge, technical know-how, field experience, and staff dedication and professionalism
- Available funding
- Having an implementation mandate, the possibility to pilot-test approaches, room for experimentation, and a willingness to get their hands dirty
- Bottom-up approach, the ability to work with local stakeholders
- Being outcome driven and managing for results
- Being embedded in GIZ

The country-level interviews stressed the following strengths of EnDev.

- Technological know-how
- Knowledge of the local communities: awareness of the capabilities, challenges, and needs of the communities

Basis for Endev's success in achieving its global outcome target

We recognize abovementioned perceived strength. We would add EnDev's 'clarity of focus', which is born out of its mission (provide access to modern energy services) and its global outcome target, and provides the greatest possible clarity as to what EnDev staff need to focus their energy on. This, in turn, allows or triggers the effective and efficient deployment of staff and budgetary resources. In our view, this clarity of focus together with the factors below form the main reasons for EnDev's success:

- available money and on-the-ground presence, which allows it to initiate, develop, and implement projects, designed to connect households, social institutions, and SMEs to modern energy services;
- dedicated project organization, which allows staff to be fully committed and direct their efforts 100% to EnDev's mission;
- GIZ knowledge, experience and cloud: EnDev uses highly-experienced, competent and professional GIZ staff, and GIZ is a respected player within development community, both on a country and global level.

Name recognition

Our interview partners, both at program and country-level were less clear about 'where GIZ ends and EnDev starts (or vice versa)'. A significant number of stakeholders noted that they deal (at least in their perception) with GIZ and not with EnDev. And to add to the conundrum: in Ethiopia, the EnDev

[11] This section addresses both research question 4, 8 (in part) and 16. See annex C for an overview of the 20 research questions for this evaluation.

program is run by the Energy Coordination Office and known as ECO. (This office was set-up by GIZ and was intended to house multiple BMZ-financed energy initiatives. Until today however, ECO executes the EnDev program only.)

We take from working paper on the Governance, Rules and Procedures of EnDev (version February 2014) that EnDev aspires to have 'its own visible identity … to increase its visibility and become a brand.' We assume that this aspiration is in part born out of the same observation as we have made: stakeholders are unclear where GIZ ends and EnDev starts. To the extent that the GB member representatives attach value to EnDev's name recognition, we can only confirm that work has to be done to achieve this.

BMZ-KFW-GIZ-EnDev coordination

A particular strong view worth sharing here – in the absence of a research question, which deals with donor coordination – is KfW's view that EnDev, being a GIZ executed program, is subject to the formal guidelines governing the German development cooperation, in particular the division of labor between BMZ, KfW and GIZ[12]. This view implies that EnDev should, strictly speaking, limit itself to technical advisory services and leave investments decisions (including through grant financing) to KfW. The perceived logic behind this view is that KfW is better positioned and equipped to assess 'fiduciary risks'. The above view was expressed by KfW interview partners, both at headquarter-level and in the field. We do add that none of our KfW counterparts wished to apply above guidelines very strictly, but have them as a guiding principle nevertheless.

We do not share the view expressed by our KfW interview partners, which puts EnDev on par with GIZ. EnDev is a multi-donor partnership executed by GIZ but governed by its own rules and procedures. Moreover, we deem EnDev's ability to provide grant financing over and above its technical advisory services a unique selling point and strength. To the extent that EnDev would not have the necessary skills to assess the fiduciary risks of its investments, it has the ability to hire the necessary expertise. Having said that, close coordination with KfW, especially in those cases where grant financing is considered, makes sense, because of KfW's expertise, its capacity to cover much larger investment volumes, its ability to pool multiple investment projects and – last but not least – it finances similar activities as EnDev (e.g. KfW is promoting SHS and small-scale PV-systems for social institutions in Nepal and wishes to enter this sector in Ethiopia). From a (German) donor cooperation point of view, it can at all times be decided (ultimately at Board level) that certain investments can be better undertaken by KfW than EnDev (or vice versa).

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[12] This concerns the so-called 'Leitlinien für die bilaterale Finanzielle und Technische Zusammenarbeit mit Kooperationspartnern der deutschen Entwicklungszusammenarbeit'.

2.5 To what extent does a program like EnDev contribute to the effectiveness of Aid Delivery?[13]

The Busan Partnership for Effective Development Co-Operation states 4 principles, which form the foundation for the effective delivery of aid. The extent to which EnDev abides by these 4 principles is discussed below.

Recipient country ownership of the projects and local engagement in project implementation[14]

It is stated EnDev policy that it takes a bottom-up approach: country teams together with local stakeholders from the government, civil society or the private sector identify, develop and implement dedicated projects to connect or service households, social institutions or SMEs with modern energy services. EnDev does not strive to obtain explicit ownership of its country projects by recipient country governments.

Having said that, EnDev works closely with national and local governments, because it makes sense (as in the on-grid and off-grid work in Nepal, where the Alternative Energy Promotion Centre, the Nepal Electricity Authority and the National Association of Community Electricity Users Nepal are well-positioned to act as project implementers) and is necessary to ensure the sustainability of operations (as in the Amhara region in Ethiopia, where EnDev has committed the district government to take responsibility for the operations and maintenance of the installed solar systems at health care centres).

Moreover, governments have revealed strong ownership of EnDev's work (with the Nepal government picking up on the revolving debt fund structure to create its own: the so-called Credit Renewable Energy Fund) and the Ethiopian and Peruvian government embracing the ICS agenda. In Ethiopia, the government also expressed that EnDev's work and rural focus sits well with its national policy (targets).

In addition and fully in line with above stated policy, we observed that EnDev works with a wide-variety of local stakeholders. Malawi is a case in point. EnDev has hooked up with a local NGO (with for profit ambition), MAEVE, which will act as a wholesale retailer and market maker to sustainably link the available rural production capacity (potential) with the urban demand for firewood ICS. EnDev has also actively promoted the formation of (business) associations in Ethiopia (solar importers and wholesale retailers) and Kenya (one for stove producers, installers and retailers, and one for all ICS stakeholders in country). These associations were however very nascent and their value-added in ensuring the sustainability of the projects was unclear at the time of our mission.

Given EnDev's strong results-focus, we appreciate EnDev's approach and can only encourage EnDev to continue to seek local stakeholder and government buy-in and participation whenever feasible and productive.

[13] This section addresses research question 5, 15 and 17 (in part). From question 17 it addresses the issues of ownership and alignment. See annex C for an overview of the 20 research questions for this evaluation.

[14] This section addresses research question 15 on the mobilization of local resources and initiatives relevant for a long term provision of access to modern energy services.

Focus on results and enhancing development countries' capacities

EnDev has unquestionably a very strong results focus. All interview partners were well aware and highly appreciative of EnDev's outcome and results orientation. Many interview partners considered EnDev's pursuit of on-the-ground-results (i.e. providing actual access to households, social institutions and SMEs) its core value-added. A few interview partners noted that too strict an outcome orientation can work counterproductive (as too little time is allowed for results to surface or too little attention is paid to awareness raising and capacity building of government institutions: critical aspects for the sustainability of the results).

The EnDev team in Eschborn has clearly communicated EnDev's outcome orientation to the country offices and implementing partners. The fact that EnDev is considered by a few stakeholders to be too outcome oriented only underscores this. We recognize the risks of being too outcome oriented, but so does the EnDev team. And whilst there is an intrinsic tension between EnDev's outcome orientation and, example given, capacity building of government institutions, we observe that EnDev's simultaneous focus on the sustainability of results makes it invest significant resources in capacity building activities.

Nearly all country projects reviewed during our field missions encompassed capacity development. In Nepal, these efforts were strongly focussed at the community level (training community leaders to operate, maintain, and manage the on-grid village distribution network or the MHP). In Ethiopia, training was extended to stove producers, technicians (for solar technology) and solar retailers. These capacity development activities are less focussed – again, for the reasons laid out above – on government institutions.

The Busan principles also suggest to enhance the capacity for statistics to monitor progress and evaluate impact. Being an outcome oriented program, it would reach too far for EnDev to take up the responsibility for developing a country's statistics function. Still, just as EnDev has actively contributed to the development of the Global Tracking Framework, it could share its monitoring experiences at the national level.

Inclusive development partnerships, based on openness, trust, mutual respect and learning

EnDev indeed works with a wide variety of partners in informal and formal ways. In Nepal, the government agencies Alternative Energy Promotion Centre and the Nepal Electrification Authority are formal implementing partners. In Ethiopia, EnDev has helped to set up and works with the solar business association. In Malawi, EnDev partners with an entrepreneurial NGO (MAEVE), who acts as wholesale retailer of, and market-maker for, ICS. In Kenya and at a program-level, EnDev cooperates with the multinational oil company Total. EnDev cooperates actively with other international energy access initiatives, such as GACC and Lighting Africa, both at a program and country level. Importantly, all interview partners lauded EnDev for their openness. The issue of joint learning has not been explicitly addressed in our interviews. We experienced a strong learning culture within EnDev. This combined with the practical experiences gained in all above-mentioned partnerships should provide a solid base for learning.

Transparency and accountability to the beneficiaries, the public in general and own constituents / shareholders

EnDev shows a strong accountability to its donors by clearly communicating its objectives, achieved results and failures to its Governing Board (through its Annual Planning documents, Progress Reports and Board presentations). EnDev clearly defines the program, its approach, its objectives and the country projects on its website. Interestingly, annual reports or impact and sustainability studies are not published online making its transparency to the public less than perfect.

EnDev works with multi-year programs and budgets, creating predictability of its operations. There is however no explicit accountability to its beneficiaries or recipient governments. EnDev does share country project information and achieved results with governments (e.g. EnDev supported stove sales are shared with the National Improved Cook Stove Program in Ethiopia). We do not have an overview of how proactive country project information is shared with governments. Given that all interview partners, including the governments, expressed high appreciation of EnDev as cooperation partner, we do not perceive an issue here. Insofar no annual updates are provided to recipient country governments, we do recommend EnDev to do so. We note that the issue of (non-) accountability towards EnDev's beneficiaries and recipient country governments was also raised in the 2008 external evaluation, which recommended a minimum standard to inform the partner country's government on the financial resources available and in-country disbursements made during a fiscal year.

2.6 Is the program set-up, governance and implementation structure adequate? What are the strong and weak points of the overall set up? What shall be improved?

Program set-up[15]

In short, EnDev is a global program, not limited to particular continents or countries (although 50% of funds should be dedicated to Africa). EnDev can allocate and reallocate funds to those countries where access to modern energy services can be or are provided effectively, efficiently and sustainably. Demand for modern energy services and EnDev donors' ongoing engagement in countries determine EnDev's entry into countries. Actual results achieved inform subsequent management decisions to continue, scale-up or abandon activities.

The program is governed by a governing board, comprising representatives of the donors, and meeting twice a year. Program management responsibility lies within a small team in Eschborn. Implementation responsibility is delegated to country offices, which in some countries are supported by regional offices. A number of country offices work with local implementing partners. (Recently, some country projects are executed by local or international development organizations: SNV, Maeve and Hivos. Given that this is indeed a very recent development, this evaluation has not studied the effectiveness of using such organizations.)

The institutional set-up is clear and logical to the evaluators. We briefly highlight our main observations and valuations on EnDev being a global program, as well as its governance, program management, and implementation structure.

Global program

EnDev can legitimately be called a global program with an African focus: as of December 2013, 57% of funds were allocated to 15 African counties, 23% of funds went to 4 Latin-American countries, and 20% of funds went to 5 Asian countries[16]. Most countries were already part of EnDev 1. Burundi, Cambodia, Liberia, Madagascar, Malawi, Tanzania and Vietnam have become countries of operations during EnDev 2. EnDev activities in Mongolia, a country of operation under Endev 1, were not prolonged. Some of the new countries of operation were a response to a direct request of (or voiced desire by) an EnDev donor (e.g. Liberia), other countries were the result of the opportunity to set-up an effective energy access program through an intensified partnership with the Dutch development organization SNV (e.g. Cambodia and Vietnam). The global nature of the program does not raise questions or concerns for the evaluators as such. Critical is how actual results achieved inform management decisions to continue, scale-up or abandon activities. This issue is explicitly addressed in the next section (par. 2.7).

Governance

The GB member representatives expressed general satisfaction with the functioning of the Board. Decisions are reached jointly and amicably. As noted in our answer to the second research question (in section 2.2), several governing board member representatives suggested for the Board to focus on high-level strategic issues and get bogged down less in the approval of country projects.

[15] The overall set-up of the EnDev program is presented in annex A.

[16] EnDev Progress Report 2013, March 2014.

With two government board meetings a year and no separate, dedicated board committees (e.g. audit, development effectiveness, remuneration), the governance structure can be considered light. On the one hand, such a light structure appears befitting for such a multi-donor program. On the other hand, it forces the governing board members to address a broad range of topics in each governing board meeting, which automatically reduces the attention given to each subject and likely induce a greater reliance on the views expressed by the management team. Dedicated board committees, with a clear terms of reference and dedicated resources, could dive deeper into topics of importance, commission independent studies and evaluations, which in turn could be used to govern the program and steer the management team.

In addition, we note that the program funds are subject to a management for development results framework, but the management team in Eschborn (or the country teams) are not. This is not only inconsistent, it effectively means that the governing board lacks an important instrument to steer the management team if and when (i) results are insufficient; or (ii) program funds are not allocated based on results achieved. We fully realize that the introduction of a results-based management and remuneration system would impose serious challenges as EnDev staff are governed by GIZ remuneration policy. Such a move would probably imply that a separate project organization would need to be established. Nevertheless, we believe it is worth investigating the possibility to introduce management for results in the management appraisal as it will further incentivize management to pursue results and thus increase the effectiveness of the program even further. At the same time, it will make the governance and program management internally consistent, especially now that EnDev is implementing results-based financing modalities).

Program management

Program management consists, roughly speaking, of three parts: (i) internal (financial) management and maintaining the relationship with the EnDev donors; (ii) the positioning of EnDev within the global energy access community; and (iii) managing the country teams and projects. We have not reviewed EnDev's internal (financial) management and – according to the statements by the governing board representatives – the management of donor relations is excellent.

Regarding the second part 'the positioning of EnDev within the global energy access community, we start with the observation that the team in Eschborn is praised (without exception) by all program-level interview partners. The Eschborn team is considered: open, responsive, candid, knowledgeable, experienced, pragmatic, (self-) critical, and dedicated to detail. Moreover, the team shows a willingness to address challenges, share knowledge, consult and cooperate with others. The team is considered by all interview partners to be well-run and pleasant to work with. Not surprisingly, the team is deemed a constructive player within the international energy access community, which has contributed actively to such diverse issues as awareness raising, monitoring systems, the global tracking framework / counting methodologies, knowledge development, and quality assurance.

Regarding the third part, the management of the country teams and projects, we note that the EnDev team in Eschborn takes a very bottom up approach: country teams are best able to assess the situation, opportunities and results in-country and therefore best positioned to shape and steer the country projects. The relationship between the Eschborn team and the country teams are cordial relationships, governed by trust. In fact, the Eschborn team has no formal management responsibility over the country teams (which lies with respective GIZ country directors). In practice, this means that the Eschborn team can only nudge the country teams in the right direction by maintaining good personal

relations, strong argumentation (either towards the country teams or the GIZ country directors) and exercising their influence on post-assignments.

We appreciate the loose, cordial management of the country teams and to base the working relation on trust. We believe this presents an inspiring work environment for the country officers. We can imagine that this management approach is supplemented by more formal management instruments, strengthening the hand of EnDev management in Eschborn. Again most logical to us would be that a results-based management and remuneration system is introduced in line with the way overall funds are managed within the program. Such a results-based management system could be complemented by independent audits of country projects to show the results achieved.

Implementation structure

Country projects are either implemented by EnDev's own dedicated country offices or through local implementing partners. The advantage of working through own offices is that one can pursue opportunities and achieve results even if local supporting structures are absent. The advantage of working with local implementing agencies is that EnDev can keep implementation costs (especially personal costs) low and support the local institutionalization of the project, which in turn supports the sustainability of the efforts. We appreciate both implementation approaches and, when starting through EnDev's own structures, welcome all efforts to build up local structures to support and sustain EnDev's endeavors.

In our country missions, we have observed strong and capable local implementing partners as well as weaker ones with lower capacities. We noted that personal contact was the main method to steer implementing agencies (rather than the use of more formal, compliance or results-based management instruments). Within the context of development assistance, we see a lot of merit in this approach. Of course, it makes having the right people skills even more important for EnDev country offices. In general, we observed that EnDev staff is on top of things related to the local implementation partners (Burkina, Ethiopia, Nepal, and Peru). It will be interesting to follow the implementation of the RBF window under the EnDev 2 to determine how the RBF system will influence the relationships between the country offices and implementing agencies. These experiences could form a basis for introducing results-based management systems in other projects as well.

2.7 How effective is the program structure for management steering on results, both on the basis of outcomes and impact? What are recommendations for improvement?

Introduction

In our answer to the question on aid effectiveness (section 2.5), we acknowledged and expressed our appreciation for EnDev's strong outcome and results orientation. Of course, EnDev's outcome orientation is just one part of its management for development results framework (as this outcome orientation informs the approach to and design of its interventions). The other, and more critical, part is the extent to which EnDev's management team acts on results, i.e. steers more resources to those projects which show results and have up-scaling potential and redraws resources from those projects which have shown results, but lack up-scaling potential or have not shown results in the first place.

Data-analysis on management for development results

At the outset, we would expect – taking a program perspective – that EnDev will have scaled up the successful country projects under EnDev 1 (i.e. have assigned a larger country budget to these country projects), monitored further results, and as further results materialized, scaled up the respective country programs even more. In parallel, EnDev could enter new countries with relatively modest budgets, and scale-up activities as results materialize. The above expectations imply that we would expect an increasing number of scaling-up proposals during the evaluation period.

A review of the annual planning documents provide the following picture. In 2009, EnDev 2 has continued operations with fresh EnDev funds in 17 out of the 18 countries of operation under EnDev 1[17]. The multi-year budgets of some of these continued operations were scaled-up significantly compared to the overall country expenditures under Endev 1: Benin (stove component, 319%), Peru (314%), Indonesia (148%) and Uganda (100%). The multi-year budgets of other countries of operations increased less dramatically (e.g. Burkina Faso, 33%; Honduras, 43%; Rwanda 53%), roughly kept at the same level (e.g. Bolivia, Kenya, Nepal), or decreased (e.g. Bangladesh, 39%; Ethiopia, 20%, Ghana, 53%). In line with our expectation, some country projects have been scaled-up more at the outset of EnDev 2 than others.

In the subsequent years (2010 and 2011), one (Bolivia, 57%) and two (Kenya, 32%; Peru, 17%) country projects were scaled-up. 2012 and 2013 subsequently showed a substantial increase in the up-scaling of country projects, namely 11 and 13 respectively. In 2012, the up-scaling percentages ranged from substantial (Nepal, 132%; and Kenya, 106%) to modest (Indonesia, 13%). The others were in the range of 34% - 88% of the multi-year budgets. 2013 shows the same range of up-scaling volumes with the exception of Mozambique, which saw a budget increase of 184%. The increase in up-scaling proposals in 2012 and 2013 meet our expectations. The EnDev team in Eschborn noted however that the sharp increase in up-scaling proposals in 2012 and 2013 is also due to the availability of (fresh) donor funds, which needed to be committed and disbursed before a set date[18].

Finally, EnDev has started with modest budgets (between €250.000 - €900.000 for a 2 – 3 year period) in new countries of operations, such as Liberia, Madagascar and Malawi. Only in the case of Cambodia, the initial budget is substantially higher (€2.000.000 for a two-year period) as EnDev builds on the

[17] as listed in annex G of the Final Report on the first phase of EnDev. EnDev 2 discontinued the EnDev 1 operations in Mongolia.

[18] Original Norwegian and Irish contributions to EnDev had December 2013 as an end-date, Australian and EU funds December 2014, and Dutch contributions December 2015.

previous experience of SNV (the implementing agency) in the intervention area (biogas). These new country operations started in 2012 and 2013, except for Burundi which started in 2010 and is the only new country program which also has been scaled-up (this year by 67%).

Assessment

We experienced difficulties in assessing the extent to which this up-scaling of country operations is based on results achieved thus far. The reason for these difficulties is that the up-scaling proposals in the Annual Planning documents mostly take a situational perspective (i.e. what is the state-of-affairs at the time of writing) and not so much a comparative or results perspective (i.e. what were the objectives, to what extent have these objectives been (over-)achieved, what were the main contributing factors to the success, what is the remaining potential, what needs to be done more or differently to reach this potential). This lack of a clear 'before' and 'after' perspective in the country up-scaling proposals prevents us from establishing a clear correlation between results achieved and up-scaling volumes.

Moreover, it is ultimately the country project and not individual interventions that is scaled up. Whilst up-scaling proposals define the main approach, technology and interventions area, country teams are free to re-channel funds as soon as they see new opportunities for certain technologies. Country teams' freedom to re-channel funds between technologies and interventions sits well with EnDev's believe that country teams are best positioned to identify opportunities and achieve on-the-ground results. To the extent that the country teams are incentivized to achieve results and manage their interventions for results, the possibility to re-channel funds is in full accordance with the management for development results principle. As noted in our answer to the research question on the program set-up and governance structure (in the previous section 2.6), country teams are not explicitly and formally incentivized in such way. In this context, assigning resources to country projects rather than to individual interventions potentially weakens the relationship between allocated resources and achieved results.

Overall, we are confident that up-scaling proposals are informed by the results achieved. This relationship is however less strong that it could be and – given EnDev's strong outcome orientation and results focus – should be. To increase this linkage, we recommend the EnDev management team to either approve up-scaling proposals for individual interventions and not allow a priori the shifting of funds between different country project components or install more explicit and formal results-based management systems for the country teams. Moreover, the EnDev management team could present up-scaling proposals more explicitly against the results achieved so far, the remaining potential, what needs to stay the same, what needs to change, and the new overall objectives.

Extenuating circumstances

The above analysis takes EnDev's perceived strong outcome orientation as the starting point. We recognize that there are other considerations, which EnDev's management needs to take into account, such as the need to allocate at least 50% of resources to Africa, focus on Least Developed Countries (LDCs) and remote areas within countries, accommodate strategic interests of the Governing Board members in particular countries, the soft or hard earmarking of donor funds. All these considerations reduce the ability of EnDev's management to implement the management for development results framework. On the one hand, this is *real-politik*; on the other hand, it is a shame because the management for development results is very strong management tool and clearly distinguishing factor

of EnDev (as also clearly recognized by EnDev itself in many of its publications, amongst others in the draft Strategy Paper and Draft Governance, Rules and Procedures Paper[19]).

MfDR until 2018

We take from the budget data in the Progress Report 2013 that the total available budget for EnDev 2 has basically been committed (see below). This implies that without the fresh insertion of funds, EnDev will not be able to apply its management for development results framework and scale up successful country projects. When contributing new funds, EnDev donors would do well to assign funds for the full remainder of EnDev 2 and with the least amount of restrictions as politically possible, to allow the management team to effectively apply the management for results framework.

Allocation of EnDev 2 Budget	
allocated to projects based on EnDev 2 Annual Planning 2014	168,733,000
allocated to projects based on EnDev 1 Annual Planning	495,000
allocated to program level activities	14,000,000
not allocated	19,706,943
thereof reserved for RBF facility	*18,144,513*
Total	**202,934,943**

[19] Both February 2014 versions

2.8 To what extent has the program a knowledge management system allowing to learn internally from its experiences and to share knowledge?

EnDev's knowledge management is based on six pillars:

1. classical electronic knowledge management systems: these contain state-of-the-art file storage systems at GIZ headquarters and country offices and a closed-off EnDev-section on Energypedia (a wiki-platform for collaborative knowledge exchange);
2. staff meetings and exchanges: these meetings are conducted at the biannual Mitarbeitertagung (MATA) Energy and Water, the annual *Fachverbundstreffen* of energy sector specialists (which is organized on a regional basis, e.g. East Africa), and – to a more limited degree – dedicated sector or thematic meetings;
3. the country backstoppers: these constitute the main intersection of different information flows. According to many interview partners, the effectiveness of the EnDev knowledge management stands and falls with the role of these country backstoppers and their relationship to the country managers they advise;
4. staff rotation, with country managers or experts transferring to other country offices, thus bringing fresh country experiences from one country to another.
5. cooperation with the BMZ-financed program HERA, which is located on the same floor in the GIZ building as EnDev's Eschborn team, and can be best described as a small think tank on poverty oriented basic energy services. There is an active knowledge exchange between EnDev and HERA staff, the results of which generally find their way in HERA's knowledge products (newsletters, energypedia contributions, publications, factsheets, and conferences);
6. the commissioning of baseline studies, impact assessments, sustainability assessments, mid-term reviews and ex-post evaluations, which generate on a very practical level best practices and lessons learned.

In the interviews with the Eschborn and country teams, we experienced a sincere willingness to learn. This willingness to learn is also shown by the inclusion of lessons learned of failures as well as operational challenges being faced in the annual Progress reports, as well as addressing both successful and unsuccessful country projects in governing board meetings. (To ensure that this does not become mere dressing up, it is important to follow-up such presentations in subsequent reports and meetings.)

EnDev certainly has state-of-the-art information systems in place. The effectiveness of these systems naturally depend on the way these systems are used by the Endev staff: do they read up on Energypedia? Do they contribute to Energypedia? Some do, many don't. In this context, the information systems in place are storage systems rather than platforms for exchange (an outcome common to many organizations).

We recognize the value of the staff rotations between EnDev country offices. Over and above the exchange of information between countries that this creates, we experienced limited exchange between country teams (of course with a few notable exceptions, like the exchange of MHP experts of the Ethiopian office with both the Indonesian and Mozambican country offices or reciprocal visits of stove experts in West Africa). The exchange between country teams could probably be invigorated. This is no easy task given the physical distances between teams and the fact that learning especially takes place by individuals when facing concrete, practical challenges in one's work and one is looking for solutions to apply immediately.

The exchange between country teams could be intensified by proactively identifying knowledge requirements amongst country teams and accordingly organize individual missions (e.g. micro hydro expert of country A visits micro hydro expert country B) or targeted thematic meetings (e.g. gathering the experts who are applying the revolving funds approach or are working on community based mini-grids). Such thematic meetings do not always have to involve travel and could also be conducted through moderated tele- or videoconferences (with e.g. Google Hangout or Skype). Such meetings would also exemplify the importance the EnDev management team puts on proactive knowledge exchange and joint learning.

2.9 How adequate has the program identified and managed different kind of risks?

Risks, the chance that objectives are not met or what is important is harmed (e.g. image, the environment), exists both at a program and a project level. We interpret this question as a recognition of this simple fact and an inquiry into how the management and country teams have dealt with risks.

At a program level, we observe that the risk to attain EnDev's global outcome target has been addressed by (i) working in a wide-range of countries (24 at present) and 5 technologies of modern energy services, which effectively constitutes a diversification strategy; and (ii) allocating funds to those country projects, which show success, i.e. effectively managing for results (whereby we highlighted in section 2.7 some limitations to the overall management for results framework).

At a project level, key risks to the project outcome are identified in the design of interventions. Proposals to scale-up country projects or enter a new country include an explicit risk assessment. The risk management page of EnDev's internal Energypedia notes that EnDev's risk identification and management plans 'might not be sufficiently systematic' and 'might be geared towards reacting when a risk has materialized rather than identifying and avoiding risks before they materialize'. A brief analysis of the risk management paragraphs of the up-scaling proposals in the Annual Planning documents does indeed give the impression that these are not the result of the systematic application of a risk analysis and management methodology. The text does not indicate how these risks have been identified, what the chance is that the risk will occur or the impact when the risk indeed materializes.

We take EnDev's own hint that its risk management is not systematic enough to note that risk management is no rocket science (and probably easier than EnDev's systematic work on monitoring and counting methodologies). It is above all a periodic, systematic, and collective evaluation and valuation of the risks which can occur. Periodic, because risks change in time and need to be revisited regularly. Systematic, to account for the full range of risks (e.g. risks to additionality or sustainability of results, negative environmental impacts, time-delays in delivering results, budget overruns, quality or reputational issues), as well as the proper clustering, prioritization and valuation of risks. Collective, as only jointly one can (i) identify the full range of risks and (ii) address risks by designing risk mitigation strategies and assigning responsibilities to carry them out. We note that such an approach can be applied loosely by a small internal team or strictly with formal inputs of many different (external) stakeholders depending on the objectives of a particular risk management session.

2.10 Is the reporting and monitoring system appropriate to assess progress and to give a truthful representation of the results achieved? Are there any incipient problems? Are there suggestions? Does the monitoring system deliver sufficient value for money? Can EnDev's monitoring system be validated? Does the monitoring framework include measurable indicators, systematic and regular processes for collecting data, and feedback processes to facilitate decision making and learning? To what extent does the reporting provide quantitative and/ or qualitative information on outcomes, impacts and the sustainability of services and facilities?[20]

Introduction

EnDev is at the vanguard of self-obliged monitoring and impact evaluation ambitions. Their outcome monitoring system is very elaborate and enables the program to substantiate achieved goals. EnDev is very transparent by disaggregating in detail beneficiaries for each country and technology and it is thereby able to calculate cost per beneficiary for each EnDev sub-intervention. Management decisions can be driven by these numbers (see section 2.7 for the valuation on the management for development results framework).

Two times per year, country projects report outcome numbers on beneficiaries served with electricity and improved cooking stoves. Depending on the intervention's set-up, these beneficiary numbers are either directly gathered by EnDev country staff or EnDev relies on sales figures of the producers/ selling points that are promoted in the project. In general, the data is gathered at the local level, compiled at the national level and reported to EnDev HQ. In most countries, the reporting works on a trust basis; no obligatory control mechanism exists. Some country projects have developed control mechanism of their own accord (e.g. Peru). In general, country backstoppers at HQ are expected to safeguard that reported numbers are realistic by discussing the results with EnDev country staff and visiting country projects on a regular basis.

The EnDev beneficiaries reported by the countries are afterwards adjusted with an elaborate system of reduction factors. The reduction factors account for potentially non-sustainable connections that are not replaced (e.g. after a stove breaks), for connections that might occur also without the EnDev intervention (e.g. because solar products spread via the market) (see Annex G on the counting methodology).

The ambition of the monitoring system at HQ's level is very high and it accounts for classical sources of upward biased outcome estimations by the reduction factors. This can by no means be taken for granted and is highly respected. Yet, it is not rigorously implemented in the countries and the weak point of the monitoring system is that no clear rules for justifying and validating reported numbers and assumed reduction factors exist. Below, we first describe our observations on the monitoring system and the current monitoring implementation policy and then we make some suggestions on how to improve the monitoring system in a cost-neutral way, i.e. how its effectiveness to deliver robust outcome numbers can be increased without incurring additional costs.

Observations on the current monitoring implementation policy

For the outcome reporting, the system relies in general only on numbers that are reported by the country project itself and no mandatory systematic validation mechanism exists. Trust is the

[20] This section addresses both research question 11 and 12. See annex C for an overview of the 20 research questions for this evaluation.

dominating component of the monitoring system. In principle, this seems to be justified, since all EnDev staff members from HQ to the field are doing an engaged and sincere job. However, on all levels incentives to misreport exist –whereby 'misreport' does not mean inflating numbers with a criminal intention, but rather to have a more relaxed view of things and in doing so being upward biased. Furthermore, it is not clear, if the monitoring principles are known and pursued equally on all levels (for example, in electrification projects subsidiary partners are not always aware of the role that pre-electrification rates have for EnDev). Also at the program level, no systematic controls exist (there are exceptions in specific country interventions but generally there is no obligation) and misreporting does not have any consequences.

As a consequence, proper baseline and follow-up studies to validate the additionality of the connections are not implemented on a systematic basis. Sustainability studies a few years after the project ended are the exception, not a rule. Due to this lack of substance to substantiate the outcome numbers in the project, it is a priori not clear, whether EnDev monitoring data is really a conservative estimation of beneficiaries reached. Experiences from the five country missions and independent evaluations rather suggest that in many cases there is room for doubt whether applied reduction factors are high enough. In virtually all country projects in which independent evaluations where conducted or in which EnDev itself contracted out a more in-depth evaluation study, it turned out that the assumptions made by the projects were way too optimistic. In Senegal, LPG usage rates were at almost 90%, in Indonesia pre-electrification rates were much higher than expected, in Burkina Faso, only parts of the disseminated stoves could be found in the project's target region. It has to be emphasized that it is (partly) EnDev's merit that such evaluation studies are conducted and it also has to be highlighted again that it is EnDev's ambition and self-perception to conduct such studies in order to obtain robust outcome numbers. But it also indicates that there is room for improvement.

Apart from outcome monitoring, EnDev conducts impact and sustainability studies. These studies are not mandatory and rather emerge from specific interests in a country project from HQ's side or from a country project's own initiative. The systematic assessment of impact and sustainability studies (see Annex F) show that so far, 33 impact studies and 12 sustainability studies have been finalized. Most country projects do sustainability and/or impact studies at one point in the course of the project.

The studies are very diverse in scope and quality and range from minutes of a workshop meeting over very simple outcome counting studies to rigorous impact studies using state-of-the-art evaluation techniques. In order to systematize their impact studies, EnDev has recently started to elaborate a screening tool in order to assess the reliability of findings. Furthermore, in February 2014, a manual for conducting sustainability assessments of ICS interventions has been published by HERA, co-authored by several EnDev staff members.

Recommendations

Given the sincere ambition of EnDev to monitor its activities in a way that robust outcome numbers are obtained, we believe the shortcomings outlined above can be overcome by a re-organisation of the implementation of the monitoring. The suggestions we make do not necessarily mean that more funds are required.

Our major suggestion is to increase the focus of the EnDev monitoring system and thereby the funds EnDev dedicates to it. The emphasis should be on *accountability* and not on *learning;* simply because proper learning studies are not financeable with the budget EnDev wants to dedicate to monitoring. Our impression so far is that EnDev strives for answering many good questions in terms of impacts of

energy access and why systems are sustainable or not, but being an outcome oriented program it does not assign the funds to study these questions (which is understandable and appropriate). At the same time, the outcome measurement – which is indispensable for a program like EnDev – is not always properly done. Hence, in brief the three major recommendations are:

1. Instead of conducting several small impact studies of questionable validity, EnDev should concentrate on outcome monitoring and simple sustainability monitoring.

2. Conducting impact studies and learning oriented sustainability studies are not the duty of implementation oriented programs. It is nonetheless desirable to maintain EnDev's interest in learning, but it should concentrate on few rigorous flagship studies. These studies should not be financed out of the EnDev budget.

3. Independent audits should be announced *and* conducted.

The EnDev monitoring system should focus on outcomes and sustainability and abstain from the ambition of measuring impacts. Because of the attribution gap between outcomes and impacts causally assigning any change in beneficiaries' livelihood to the EnDev intervention is a very demanding challenge and requires a lot of methodological input. Conducting impact studies on a systematic basis from the regular program budget is not reasonable, since the funds that are required to do this properly are hardly legitimatable (impact studies for EnDev-like projects as contracted out by e.g. DGIS/RVO, 3ie, World Bank cost around 0.3-1 million Euros). Therefore, here EnDev should not per se pursue to do impact studies. Rather, EnDev could partner up with academic researchers in seeking research funding from third parties. These studies should comply with state-of-the-art evaluation methodologies (irrespective of whether these are methodologies that are rather applied in economics or anthropological research).

A proper outcome monitoring system should encompass well-designed surveys before the intervention starts (baseline) and after the service has been provided. These surveys do not necessarily need to be implemented in an academic way. Rather, simple outcome indicators, i.e. energy usage before and after the intervention should be collected among a representative sample. For a proper outcome study, it is not necessary to collect information on socio-economic details (e.g. income) or impact related indicators (do people use lighting for studying etc.). The attention and thereby the funds of such studies should be concentrated on outcomes, properly filled questionnaires, and a representative sample.

The same applies to sustainability studies, which should be conducted systematically, i.e. for all projects in the project region a few years after the intervention has ended. Again, the major focus should be on accountability, not learning. This implies that very simple indicators will help to assess whether the energy service is still used, properly maintained and/or replaced. The HERA guideline provides for a good basis in these regards, but the ambition is partly too high, i.e. it raises questions and hence suggests indicators that can hardly be answered with the budget regular projects dedicate to such studies. Three of the sustainability criteria defined by HERA might serve for this purpose: usage rate, condition rate and replacement rate.

It is probably recommendable to also conduct sustainability studies that also focus on learning, i.e. that try to understand why people adopt a technology or why they don't, why a system is not maintained properly etc. This, however, does not need to be done by every project, but can be planned in very particular cases that offer special learning potentials, for example.

Incentives to overestimate the outcome numbers a project reports are obvious. As emphasized above it is not a question of having malicious intentions, but of having a more relaxed view on things and maybe not dedicating the required attention to this task. Giving that this principal-agent problem prevails on several levels (HQ-country manager, country manager-country staff, and country staff-implementation partners), it is difficult to overcome by simple communication and checking-boxes-sheets (although both can help of course). The usual mechanism to respond to such principal-agent constellations are audits. Such audits need to be independently implemented by external companies in an independent selection of country projects who are only informed on rather short notice. Announcing such external audits beforehand will lead to a more rigorous implementation of the monitoring system on all levels.

2.11 To what extent has EnDev been able to inspire, influence and inform transformational change in partner countries and in the global energy access agenda?

We first define transformational change as the term lacks a common understanding. We understand transformational change as 'the passage from one state to another'[21] and 'a fundamental and irreversible change in societal systems[22]'. Transformational change distinguishes itself from mere change. 'Change is situational: the move to a new sight, the reorganization of a team, the revision of a plan. Transition is psychological … a [collective] process by which people unplug from an old world and plug into a new world'[23].

In the context of a country's energy access, we would thus define transformational change as a change of regimes in how energy access is provided in a country, i.e. a simultaneous turn to new developmental approaches, operational models, financing schemes and regulations. In the context of the global energy access agenda, we would define transformational change as a fundamental change in the way aid is designed, delivered and accounted for. Below, we briefly discuss the extent to which EnDev has inspired such transformational change at the country level and the global energy access agenda.

Transformational change at the country level

In the working paper on EnDev's Strategy (version February 2014) EnDev states to have been able to contribute to transformative changes in the sub-sector. The paper lists EnDev's activities in Ruanda as a case in point. We have taken a slightly closer look at EnDev's MHP program in Ruanda by interviewing EnDev's lead consultant to the program.

In short, we have learned that EnDev originally subsidized the construction (35% of the capital costs) of three MHPs, which were developed, constructed and operated by private entities. Whilst operating smoothly, the private operators were unable to optimize their operations. In response, EnDev engaged in discussions with the Ministry of Energy, the regulatory authority and network operator and successfully pushed through a power purchase agreement (PPA) standard and a provision which allows MHPs to service clients with electricity over the national grid (so-called wheeling). These changes have allowed the private MHP operators to optimize their business case. Most importantly, based on the successful operation of these three privately-run MHPs and the opportunities that the standard PPA provide, the Ministry of Energy is now planning the tendering of 60 MHP to private sector operators (whereas it has previously advocated public, community-operated MHPs). This encompasses a major shift in thinking by the Ministry of Energy. If successful, EnDev could indeed speak of a transformational change: the move from a failed, public sector dominated MHP sector to a functioning, privately-run MHP sector.

EnDev is able to inform a transformational change. There are other, similarly strong, examples (of which the establishment of a concessionaire system in Senegal is one). Based on our field missions, we furthermore believe that EnDev has the potential to inform transformational change even more frequently, whereby this is not pursued in a systematic way. Understandably so, as EnDev's mission is to provide access to poor households, social institutions and SMEs and not to invoke regime changes as such. The real question therefore rather is to what extent EnDev wants to pursue transformational

[21] Merriam-Webster Collegiate Dictionary, Eleventh Edition, 11 ed.2003

[22] Jan Rotmans, In het Oog van de Orkaan, Nederland in Transitie, Aneas, 2012

[23] William Bridges, Managing Transitions, Da Capo Press, 1991:

changes and apply a systematic approach to achieving this. This question is for the Governing Board to answer.

If EnDev wishes to pursue transformational changes, it would be useful to acquaint EnDev country officers and experts with, and train them in, system thinking, transition management and transformative scenario planning. These applied theories could provide the building blocks of a systematic approach or an overarching theory of change. This would be useful as it provides guidance to staff. It would also be necessary as it provides – together with subsequent lessons learned – a basis for the replication of successful transitions (without which, one would subject oneself to chance). Given EnDev's aversion of having an overarching theory of change (as highlighted by its Strategy working paper, which states a preference for a country-by-country approach), we note that such a high-level theory of change should be principle- and process-focused (and by no means represent an one-size-fits-all recipe for change). Principle-focused as it for example takes system thinking and inclusiveness as the point of departure. Process-focused as it lays down a semi-structured process on how to guide transitions.

Transformational change in the global energy access agenda

EnDev was lauded by our interview partners for their contributions to, example given, the Global Tracking Framework. This framework is built on early work by EnDev on differentiating access levels and has benefited from EnDev's on-the-ground experience and continuous in-depth discussions with EnDev staff. The Global Tracking Framework encompasses positive change, but does not constitute transformational change in and by itself.

The real transformational change – the shift in the way aid is designed, delivered and accounted for, namely much more results and number focused – has taken place earlier. This transformational change was born out of the commitment in 2004 of the former Dutch Minister of Development Cooperation, Mrs. Van Ardenne, to provide access to modern energy services to 10 million persons by 2015, and – in the same time-period – the wide-spread adoption of management of development results within the international development community (after the Paris Declaration on Aid Effectiveness, Harmonization and Management for Development Results). This shift in orientation led to the establishment of EnDev, which subsequently has embraced the outcome orientation and results focus, operationalized these principles, and proved its effectiveness since. EnDev's positive experiences might well have contributed to BMZ's embrace of an explicit outcome target within the SE4ALL initiative (namely to provide 100 million persons with access to modern energy). As such, we are inclined to conclude that EnDev is both a product of transformational change, as well as a key actor in making this particular transformational change happen and spread.

In addition, our interview partners noted that the Global Alliance for Clean Cookstoves 'wouldn't be where it is today, without GIZ and EnDev's inputs' on awareness raising and technological development. The Global Alliance for Clean Cookstoves entails a major movement within the international development community, reflecting the wide-spread adoption of the ICS agenda in developing countries and within the international development community, not in the least due to GIZ's and EnDev's early embrace of the technology and pioneering work in the field. Here, EnDev can be said to have inspired transformational change.

2.12 What is the experience with the national level coordination between GIZ and the EnDev donor representatives (embassies etc.)? To what extent and how often do the representatives/embassies want to be involved/ informed in the program? What are the strong and weak points of this relationship and is there room for improvement?

Introduction

The donors govern EnDev through the Governing Board (see also section 2.6). The donor country embassies in EnDev's countries of operations have no formal role to play. There are no formal structures in place (or imposed for that matter from Eschborn) for any national level coordination. The draft Strategy Paper[24] states that EnDev will seek to strengthen the regular exchange with donor representatives in-country in order to synergize activities as much as possible.

Observations

We observed that informal relationships between the EnDev country team and the donor embassies are good and they find each other when needed. Most embassies do not have a detailed knowledge of the local EnDev program, not in a small part due to the different sector or thematic focus of their development co-operation activities. There are no consorted efforts to find synergies in each other's activities. Overall, embassies appeared content with the quality of the relationship with the EnDev country team. Some embassies noted that they were sometimes asked to provide their perspective on EnDev prior to a governing board meeting (which – given the less than detailed knowledge on the EnDev country project – was not always easy).

Assessment

We agree that the donor embassies do not have a governing role within EnDev. We do think that at least an annual, well-prepared exchange on the EnDev program and the donor embassies' activities makes sense. We recognize that - as things stand – donor coordination absorbs plenty of resources (both for EnDev and the donor embassies) already. Still, a dedicated discussion on the content of each other's activities can indeed give rise to identifying new development and / or coordination opportunities (which might be overlooked in more informal, passing communications). Moreover, this would be fully in line with the ambition expressed in the draft Strategy Paper to find synergies with the donor representatives in-country in general and development activities in other sectors (e.g. water, health, climate resilience) specifically. As a side-effect, this will also keep the embassies abreast of EnDev's in-country activities (which would be good, as their country's money is involved, and they can be asked at any time by visiting constituents about how this money is spend).

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[24] Working Paper, February 2014 version.

2.13 Concentrating on outcomes and cost efficiency in a competitive environment may lead to shortcomings in attention for 1) a balance of the program portfolio 2) long term sustainability of the results,3) capacity development, 4) sharing of knowledge, 5) working towards autonomously growing markets or through timely cooperation with others, and 6) a sound and successful exit strategy. In what way are these potential shortcomings being addressed at the country project level? What recommendations can be made?

We have not observed the above shortcomings, which implies that the risk of these shortcomings actually occurring has been successfully managed. We briefly list our observations and express our views per potential shortcoming below.

An imbalance in the portfolio?

EnDev Nepal covers both grid extension and decentralized electrification in its main activities, which are complemented by a productive use initiative. EnDev Ethiopia promotes the dissemination of improved cook stoves and pico-PV systems, decentralized electrification through micro-hydro power, and the servicing of social institutions with PV systems. EnDev Peru facilitates electrification and the distribution of stoves. In Kenia, EnDev indeed focused until 2012 on the distribution of improved cook stoves, but has since also started promoting pico-PV systems. Malawi is a new country of operation, where EnDev has decided to start with the promotion of improved cook stoves. Based on these observations, we have not gained the impression that EnDev's outcome orientation and € 20 benchmark has prevented it from pursuing relative expensive (decentralized) electrification. Country projects are clearly also informed by the opportunities which present themselves in the respective countries (and not only by cost-efficiency considerations).

Long-term unsustainability of results?

We have addressed this issue in our answer to the first research question (section 2.1). EnDev country projects clearly face sustainability challenges, common to any (energy access) development program. We perceive the EnDev country teams to be susceptible to these challenges and address them in the design and implementation of country projects. A nice example of EnDev being sensitive to this issue, is EnDev Kenya decision last year to pull out of certain geographical areas, where it was promoting the dissemination of improved cook stoves and which showed high penetration and acceptance rates of the promoted stoves, to test the existence of a commercial market and thereby the intervention's sustainability.

Insufficient capacity development?

Except for Malawi, capacity development formed a constitutional part of all visited country projects. These training efforts typically focus on the project beneficiaries (stove producers, PV or MHP technicians, solar retailers, communal utility boards, MFI institutions, local implementing partners, etc.) and does not target the national government institutions. This focus is fully in line with EnDev's bottom-up, on-the-ground approach. We did observed, especially in Nepal, a need for further capacity development of, and awareness raising in, the corresponding national government agencies. Given that this lack in capacity and awareness within national governments can hamper the long-term sustainability of EnDev's efforts, it would do well to promote such capacity and awareness (if not itself, than at least by supporting other agencies' efforts in that regard, for example by sharing information, experiences and ideas with the bilateral programs of the Governing Board members).

Not sharing knowledge?

We have addressed EnDev's internal knowledge management, including the involvement of the country teams, in our answer to research question 9 (section 2.8). Here, it is worth sharing our observation that the country teams in Ethiopia, Peru and Kenya (co-)initiated numerous platforms to engage in regular dialogue with local energy sector stakeholders (at the national and regional level) or energy experts from the international donor community. The EnDev teams were much appreciated by our interview partners for their leading role in stakeholder consultations. The Nepal and Malawi teams appeared less active in this regard. The Ethiopia, Peru and Kenya example clearly show that EnDev's outcome orientation does not have to hamper EnDev's involvement in regular stakeholder contact.

Insufficient attention to working towards autonomous markets?

The stove components of the country projects in Ethiopia, Kenya and Malawi aspire to the creation of autonomous commercial markets. The Ethiopia and Kenya programs do so through supporting stove producers and quality assurance and awareness raising programs. In Malawi, EnDev supports a wholesale retailer and market maker. Working towards commercial markets is a constitutional part of these programs (also when we have doubts as to the viability of such markets, as expressed in our answer to the first research question). The same holds true (but clearly with better chances for success) for the solar lantern components in Ethiopia, Peru and Kenya.

The role of EnDev in PV-system markets?

The challenge is to define the value-added that EnDev activities provide over what is happening anyhow in rural areas. Solar home systems, small solar and LED lamps are currently penetrating markets even in very remote areas. Also without any donor activity considerable shares of rural households obtain solar home systems from the market at non-subsidized prices. Dry-cell battery driven LED lamps have crowded out kerosene and candles almost completely. While this has severe implications in particular because of inappropriate dry-cell battery disposal, the lighting quality of these devices is often comparable to Pico-PV lamps. Another concern is obviously the low quality of LED lamps and also of many solar home systems, which might lead to a markets-of-lemons effect in which higher-quality products cannot enter the market because information is lacking. Here, donor agencies might intervene in the market. This is indeed the mission of Lighting Africa and also EnDev's understanding of its activities. Whether this market-of-lemons effect in fact materializes is so far unclear. Households keep on using LED-lamps in spite of their low quality and simply replace them in case they break.

Untimely cooperation with others?

As stated in our answer to the fourth research question (section 2.4), EnDev country teams are well-regarded cooperation partners.

The absence of a sound exit strategy?

We have not obtained an explicit, formal or separate exit strategy for the visited country projects. The implicit exit strategy for most country projects lies in the institutionalization of the efforts (which are – for most part, even if not always at the outset – designed into the projects): in Nepal, by the Alternative Energy Promotion Centre and the Nepal Electricity Authority; in Ethiopia and Peru through the national improved cook stoves programs; in Kenya, Malawi and Ethiopia (solar lanterns) through market development. EnDev presents the exit strategy thus as a function of a project's sustainability, which is

fair enough as long as the EnDev program runs and in due course indeed leads EnDev to cede certain efforts because they have been taken over by local institutions.

2.14 Are the bottom-up activities of EnDev suitable for scaling up? Have EnDev experiences on micro and meso level successfully informed policy making?

The promoted technologies and project approaches provide no impediment to the up-scaling of activities. In fact, 16 out of the currently 24 country projects have been scaled-up over the last 4 years (with the bulk of the up-scaling taking place in 2012 and 2013).

In our answer to research question 13 (see section 2.11), we noted that EnDev has successfully inspired transformational change in the sector. Part of this change involved successfully influencing the establishment of a power purchase agreement standard in Ruanda and a concession policy in Senegal. Both were informed by on-the-ground experiences in EnDev projects. In Nepal, the experiences with the micro hydro power debt fund has led the Alternative Energy Promotion Centre – a government agency – to set up the Credit Renewable Energy Fund, which is a similar revolving debt fund structure, albeit for all renewable energy technologies. In Kenya, the EnDev team is nudging the government towards formulating a formal feed-in tariff policy and a stronger private sector participation in off-grid power generation, not in the least to secure the sustainability of its MHP activities, but at the time of writing of this report, without success yet.

3 The OECD/DAC evaluation criteria

The *DAC Principles for Evaluation of Development Assistance* lay down 5 criteria for evaluating development co-operation programs. Our answers to the research questions in chapter 2 address these criteria to a large extent. We will nonetheless take up the formal definition of, and supporting questions for addressing, these criteria[25], and briefly highlight EnDev's performance, when measured explicitly against these criteria.

3.1 Relevance

The OECD / DAC defines relevance as the extent to which the program is suited to the priorities and policies of the target group, recipient and donor. The rural electrification rates in EnDev's country of operations remain low (with just a couple of percentage-points of the rural population having access to modern energy services in countries like Ethiopia and Kenya). EnDev clearly targets this rural population (often in the more remote areas of the countries).

EnDev does not strive to align its work to the (national) governments' policies per se. It is stated EnDev policy that it takes a bottom-up approach: country teams together with local stakeholders from the government, civil society or the private sector identify, develop and implement dedicated projects to connect or service households, social institutions or SMEs with modern energy services.

Having said that, EnDev works closely with national and local governments, because it makes sense (as in the on-grid and off-grid work in Nepal, where the Alternative Energy Promotion Centre and Nepal Electricity Authority are well-positioned to act as project implementers) or is necessary to ensure the sustainability of operations (as in the Amhara region in Ethiopia, where EnDev has committed the district government to take responsibility for the operations and maintenance of the installed solar systems at health care centres).

Moreover, governments have revealed strong ownership of EnDev's work (with the Nepal government picking up on the revolving debt fund structure to create its own: the so-called Credit Renewable Energy Fund) and the Ethiopian and Peruvian government embracing the ICS agenda. In Ethiopia and Kenya, the government also expressed that EnDev's work and rural focus sits well with its national policy (targets) even when the government itself focusses its attention and resources on large-scale renewable energy generation and distribution.

Finally, the last 5 years have shown a substantial growth in the number and / or volume of international energy access initiatives (such as the UN-led SE4ALL Initiative and Global Alliance for Clean Cook stoves, the World Bank ESMAP program, the ADB-led Energy for All Partnership, the Norwegian-led Energy+ program, amongst others). Our interviews with the EnDev Governing Board (i.e. donor) representatives showed continuous support for EnDev's mission in general and outcome orientation and management for development results approach especially.

We conclude that EnDev remains as relevant today as it was when it was initiated in 2004.

[25] Evaluating Development Co-operation: summary of key norms and standards (Second Edition). OECD DAC Network on Development Evaluation.

3.2 Effectiveness

The OECD / DAC defines effectiveness as the extent to which the program attains its objectives. We perceive EnDev, first and foremost, as an outcome-oriented program: to provide poor households, social institutions and SMEs with access to modern energy services. The donors' Delegated Cooperation Agreements with BMZ however also give importance to a reduction in the health burden of smoke and soot, compliance with international or EnDev standards for all promoted technologies, commercial market development and the promotion of technologies which are 50% more climate friendly than the baseline technologies. We have addressed each of these objectives in our answer to the first research question (see section 2.1). We briefly summarize our findings below.

According to EnDev's own figures, by December 2013, it has provided 12.26 million people with access to modern energy services and thereby exceeded its global outcome target[26] by nearly 4 million. In addition, 15.700 social institutions and 28.300 SMEs received access to electricity or modern cooking services. The above figures are adjusted numbers taking into account that not all access is sustainable, really new or attributable to EnDev. Our field missions confirmed that EnDev's country projects are designed to extend access to energy to households, institutions and SMEs and that such country projects as Ethiopia, Kenia and Malawi are additional.

Still, we found individual cases, especially in the electrification components of the Nepal and to a lesser degree Peru country projects, where EnDev's additionality could be questioned, either because EnDev's support was marginal, households would have been connected anyway, or communities were already connected to modern energy sources beforehand. These individual observations can clearly not be extrapolated to EnDev's overall program. From our point of view, they simply show that additionality cannot be taken for granted and that the project selection and monitoring systems, which EnDev has put in place, need to be applied rigorously. Similarly, baseline studies which EnDev does conduct need to be implemented systematically.

EnDev generally promotes technologies which comply with international standards, reduce the health burden of smoke, and are more climate-friendly than the baseline technologies. We do not have information whether EnDev attains the quantified objectives to reduce the health burden of smoke and soot by 50% as well as promote technologies which are 50% more climate friendly than the utility value of the baseline technologies.

We note that most of EnDev's improved cook stove dissemination interventions are the heritage of earlier GIZ stove dissemination projects that were mostly targeted towards (fuel-wood) resource saving and not on smoke reduction. EnDev is currently working on a tier-system for its ICS similar to the Global Tracking Framework for electrification projects. This tier-system will classify different ICS technologies according to their emissions, efficiency, energy source, affordability, availability and safety. The introduction of this tier-system will be accompanied by increased testing of ICS technologies at which time more can be said on the extent to which EnDev achieves its quantified health and emission objectives.

We observed that EnDev actively promotes private sector and commercial market development in virtually all its ICS, SHS and pico-PV projects and in some MHP projects (e.g. Ruanda). It does so through (i) the training and capacity development of stove producers, solar retailers or MHP operators,

[26] EnDev's global outcome target has been derived at by taking the total expenditures of EnDev 1 and 2 until December 2013 (€ 167,5 million) and divide it by EnDev's benchmark to provide at least one person with a modern energy connection for every € 20 spend.

(ii) awareness raising campaigns, (iii) quality assurance programs, and in the case of MHP (iv) supporting an enabling policy environment. As such, EnDev works on commercial market development. We are however doubtful to what extent EnDev can critically influence the establishment of markets. We have not observed clearly viable commercial markets for ICS (even though the EnDev team is confident that commercial markets are taking root in Kenya and Malawi). And the rapidly growing market for pico-PV and SHS is especially due to the strong demand for lighting and mobile charging capacity, as well as the reduced costs of PV technology.

3.3 Efficiency

According to the OECD / DAC, efficiency measures the outputs – qualitative and quantitative – in relation to the inputs. The OECD / DAC suggests to assess whether the activities were cost-efficient, whether the objectives were achieved in time and whether the program was implemented in the most efficient way compared to alternatives.

We noted in our answer to the first research question that EnDev has extended access to 12.26 million persons at an estimated costs of €13.66 per person. It has to be noted that this concerns the 'costs to EnDev' and do not entail the actual costs to connect a person to a modern energy service (the bulk of which is either carried by the beneficiary, the tax payer (through the government's contribution to these costs) or other donors). Still, EnDev has clearly achieved its objective to help connect at least one person for every €20 spend. As noted above, EnDev has also outperformed its global outcome target and has thus achieved its results ahead of the schedule.

This evaluation did not compare EnDev to alternative programs. EnDev is unique: a global program, implementing projects on-the-ground, and being embedded within an existing development organization. No clear comparator exists. Moreover, this evaluation was not asked to make such a comparative analysis. To gain more insight into EnDev's efficiency, EnDev could consider conducting a comparative analysis at a subprogram level, for example the comparison of EnDev interventions with other projects being supported under the Dutch Promoting Renewable Energy Program.

EnDev has the perception amongst its donors to be an efficiently run program: EnDev does what it says it will do; it spends on time; and EnDev delivers the results that they are set out to do.

3.4 Impact

It was agreed at the outset of this evaluation that this evaluation would not look into the development impact of the program. For information on the program's impact, we kindly refer to the 40+ impact evaluation studies commissioned by EnDev, which outcomes are summarized by the EnDev management team in the annual Progress Reports. As noted in chapter 1, section 1.5 Evaluation Methodology, we have conducted a systematic review of the quality of the impact evaluation studies. The results of this review are presented in Annex F.

3.5 Sustainability

The OECD / DAC measures the sustainability of results by the extent to which the benefits of the interventions are likely to continue after (in this instance) EnDev has withdrawn its support. We have addressed this issues explicitly in section 2.1.1.5, and refer to this section to read our country-level observations. Here we shortly repeat our overall assessment. In general, we observe that EnDev is very much sensitized for sustainability issues and thanks to its close contact to the field most EnDev projects

are very much aware of the critical parameters in the respective cases. Moreover, the sustainability of many country projects look promising. Our field observations also make clear that EnDev's interventions (naturally) face sustainability challenges common to any development intervention. We can therefore only reconfirm the need to (i) pay sufficient attention to those factors, which ensure the sustainability of interventions (i.e. revealed government ownership, the uptake of the efforts by local partners, local technical and financial capacity, evolving market structures, an enabling policy environment, etc.), and (ii) systematically apply EnDev's sustainability checklist, monitor and report on sustainability, and of course only upscale activities after x-years subject to revealed ownership by the government or clear prospects of a viable commercial market.

The OECD / DAC criteria also note that projects should be environmentally sustainable. This evaluation report has not addressed this topic thus far, simply because it has not emerged as an issue during our evaluation. In part, this is to be expected from a program, which focusses on renewable energy sources. Still, we consider it positive that in the implementation of the country projects no structural environmental issues have emerged.

The program contains however one specific environmental risk: the uncontrolled disposal of photo voltaic batteries. We understand that this issue is being discussed at a country level (e.g. in Ethiopia) and that the Global Off-Grid Lighting Association (an association of solar lantern and SHS manufacturers) is working on an industry opinion on the collection and recycling of electronic waste, including batteries, with inputs from EnDev. This is positive and we can only encourage EnDev to address this risk head on and take an early adapter stance to any innovative approaches in battery design or disposal approaches to reduce this risk.

Annex

A. The Energising Development Partnership Program

Mission	To extend sustainable access to modern energy services to poor households, social institutions and small and medium-size enterprises in rural areas of developing countries.
Objectives	• For every € 20 spent, at least 1 person will have sustainable access to modern energy technologies and services. (With the current budget, this amounts to 10 million people for the second phase of Endev (2009 – 2018) and 15 million people overall (i.e. for the period 2005 – 2018). • To connect 15.000 institutions and 25.000 entrepreneurs to modern energy services • The health burden of smoke and soot in kitchens is reduced by at least 50% for 3,000,000 people, among them 2,000,000 women and children. • Promoted technologies and services comply with international or EnDev standards. • Enterprises in EnDev partner countries increase their turnover related to energy technologies promoted by the programme by 10% annually on average, excluding turnover financed by the EnDev program itself. • The promoted technologies are on average at least 50% more climate friendly with respect to their utility value than baseline technologies (e.g. emission per lumen, emissions per meal prepared, etc.).
Strategy	• A bottom-up approach: (i) identifying energy needs through baseline studies, market analysis and dialogues with local stakeholders; and (ii) supporting activities of practitioners, energy services providers or off-takers on the ground. • A country-by-country approach: each country has the possibility to select its own intervention area. • Management for Development Results: interventions start small and are only continued and expanded if and when successful. Country projects are subject to performance criteria and a comprehensive monitoring process. • Work with on-the-ground implementing agencies, which can be either local government, nongovernmental or civil society organizations (amongst others Maeve in Malawi) or international development organizations (now: SNV, Hivos, and Ades). • Promote the development of sustainable markets for modern energy services. • Promote the productive use of energy by local business.
Type of energy services promoted	• National grid extension • Establishment of mini-grids (powered by micro hydro, solar or wind plants) • Solar home systems • Solar lanterns • Improved cook stoves (ICS) • Biogas, biomass and agro fuels

Funding

The table below shows the funding of the second phase of the EnDev program running from 2009-2018 (as of December 2013).

Donor	Contribution
Germany (BMZ)	€ 40 million
Netherlands (DGIS)	€ 72 million
Norway (MFA)	€ 23,24 million
Australia (DFAT)	€ 15,84 million
United Kingdom (DFID)	€ 37,16 million
Switzerland (DEZA)	€ 7,5 million
European Commission	€ 4,36 million
Irish Aid	€1,74 million

Source: Änderungsangebot mit Kombifinanzierung Energising Development (4 January 2013 and 19 December 2013)

Governance structure

The EnDev program is governed by a Governing Board of which representatives of Germany, the Netherlands, Norway, Australia, the United Kingdom and Switzerland are member. The Governing Board addresses overall strategy and governance issues and approves (up-scaling proposals for) country projects. The Governing Board meets twice a year. The secretariat of the Governing Board is formed by the EnDev management team in Eschborn.

Organization and management

The EnDev program is executed by the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) *GmbH* through a dedicated project organization. A core management team is located in GIZ's headquarters in Eschborn, Germany. This management team comprises staff from GIZ and the Netherlands' Enterprise Agency (or the Rijksdienst voor Ondernemend Nederland, RVO) of the Dutch Ministry of Economic Affairs. Operational teams of varying size (between 3 and 85 (local) staff members) are positioned in the countries of operation. In addition, EnDev has commissioned the Dutch development organizations SNV and Hivos to conduct country projects (amongst others in Indonesia, Vietnam and Cambodia).

The core team in Eschborn contains the following functions:

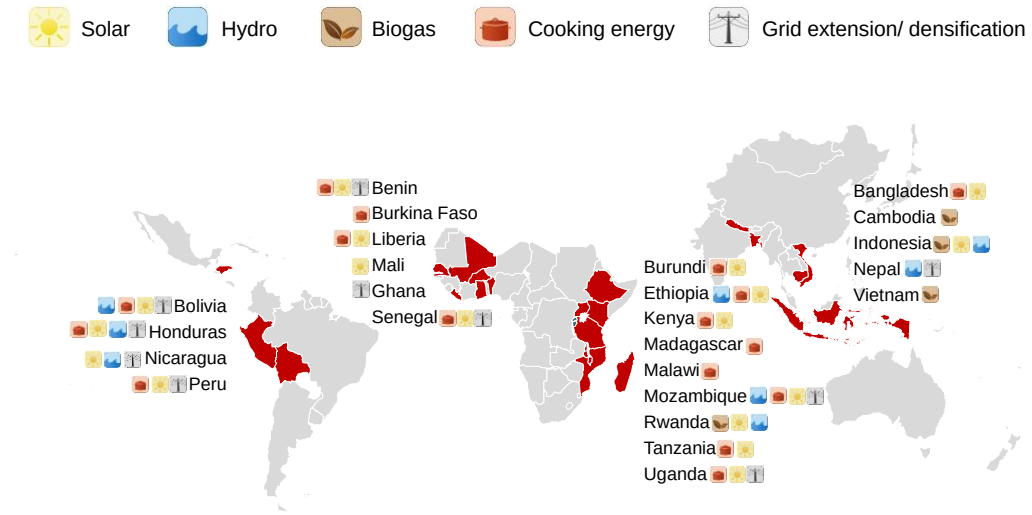
- General management
- Finance and contract management
- Monitoring and Evaluation
- Process, quality and knowledge management
- External relations
- PR and event management
- Technological knowhow (grid extension, solar technologies, hydro and wind power, cook stoves, biogas, biomass and agro fuels.
- Cross-cutting themes: productive use and gender
- Country backstopping
- Trouble shooter and workload remover

Country team consists generally of:

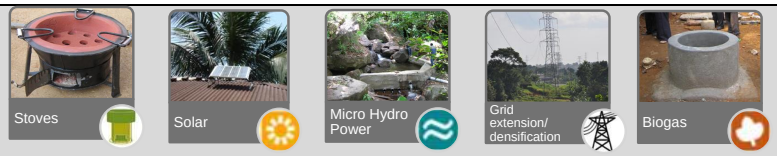
- Program manager

	- Technical experts - Market development experts - Regional managers - Support staff (administrative, transport and security)
Instruments	The EnDev team has the following generic instruments available for its interventions: • Finance (i.e. grants, results-based financing, etc.) • Technical assistance (i.e. capacity building, training, policy development) • Introducing new technologies • Quality control and contributing to standard setting • Awareness raising campaigns • Moderation
Project selection criteria	Country interventions are selected according to following criteria: • Cost efficiency as expressed by the cost per person with access to modern energy. The idea behind the criterion is (i) to make use of existing institutional capacities instead of creating and establishing those; and (ii) to keep operational and transactions costs as low as possible. • Sustainability as has been defined at two levels. First, the energy infrastructure and equipment installed should be financially, economically and institutionally maintainable and replaceable in absence of the project. Preferably, a market mechanism should be in place. In absence of such a mechanism, required cross-subsidies and publicly financed support should be made explicit. Secondly, the interventions should be environmentally and socially sustainable, in the sense of avoiding negative effects on the natural resources or socio-cultural livelihood of the local population. • Scaling-up potential. Piloting should be avoided as much as possible; after an introductory period, scaling-up (proliferation) should be a realistic option. • Additionality. Interventions should lead to providing access of people that would not get access to modern energy services in the foreseeable future without EnDev intervention. • Accountability. Interventions are transparent and outcome can -ideally- be attributed to the EnDev interventions.
Impact	Between January 2005 and December 2013, EnDev has provided 12,26 million persons with access to modern energy services. In addition, 15,700 social institutions and 28,300 SMEs got access to electricity or modern cooking technologies. (Source: Progress Report 2013)

Country and technology portfolio



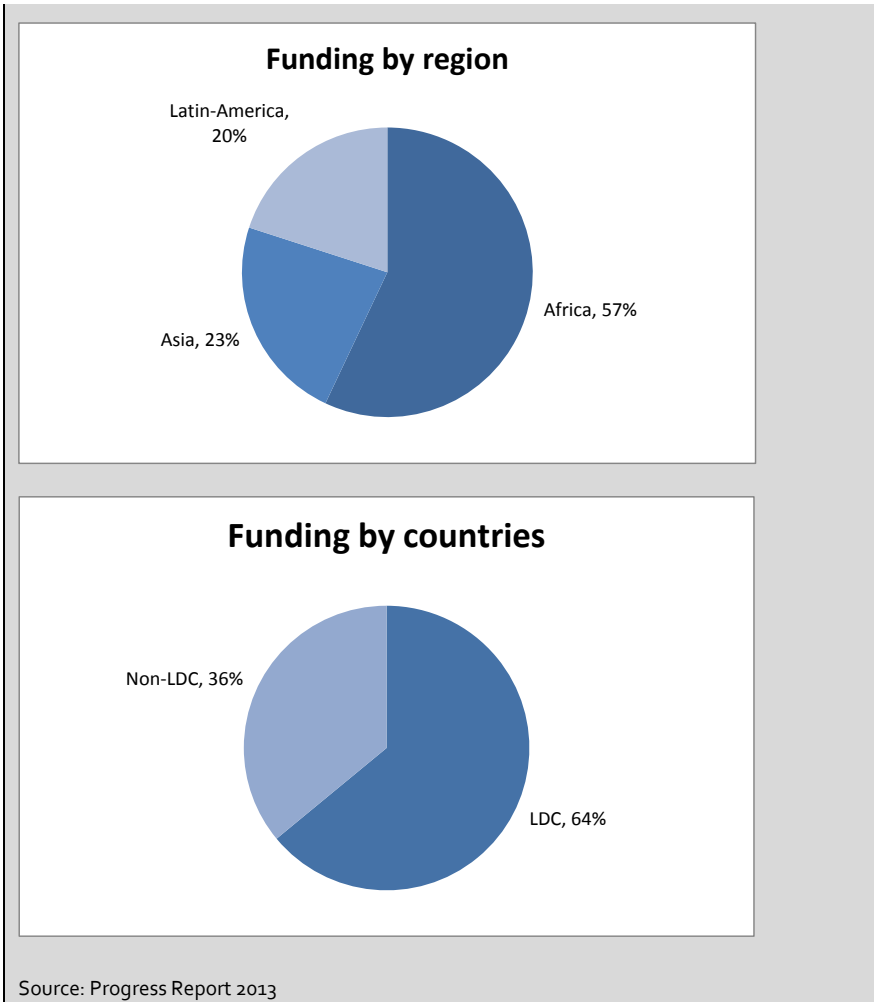
Source: Endev presentation, January 2014

Geographical distribution of technologies	 16 countries 16 countries 8 countries 6 countries 3 countries Source: EnDev presentation, January 2014
Allocation of funds per country	The table below highlights the allocation of funds over the countries of operation. (Source: Progress Report 2013)

Country / activity	EnDev 2 funding (EUR)	Disbursements
EnDev 2 program	**202,934,943**	**107,479,**
Programme management	14,000,000	7,371,
Benin, rural electrification	7,160,000	1,655,
Benin, stoves	4,000,000	2,090,
Burkina Faso	3,500,000	2,353,
Burundi	1,500,000	808,
Ethiopia	15,467,000	10,516,
Ghana	1,650,000	1,497,
Kenya	7,800,000	5,872,
Liberia	990,000	230,
Madagascar	300,000	240,
Malawi	500,000	225,
Mali	3,000,000	287,
Mali old	2,000,000	2,217,
Mozambique	10,800,000	5,826,
Rwanda	15,491,000	4,179,
Senegal	10,870,000	9,829,
Tanzania	2,041,000	96,
Uganda	8,000,000	5,568,
EU West Africa	1,990,000	1,259,
Bangladesh	14,064,000	8,699,
Cambodia	2,000,000	533,
Indonesia, biogas	1,150,000	522,
Indonesia, solar / hydropower	11,960,000	8,144,
Nepal	4,740,000	1,460,
Vietnam	3,740,000	322,
Bolivia	11,400,000	8,297,
Honduras	5,630,000	4,469,
Nicaragua	5,640,000	3,964,
Peru	11,350,000	8,451,
Disbursements of projects on 31.12.2013 already approved under EnDev 1		
Mongolia	495,000	486,

Continental coverage

The table below shows the allocation of financial resources to Africa, Asia and Latin-America (ultimo 2013).



Source: Progress Report 2013

B. Terms of Reference for the evaluation

1. Introduction

The Energising Development programme started in 2005 as a result of the energy partnership between the Netherlands and Germany with the goal to facilitate access to modern energy services. EnDev is currently implementing projects in 20 countries with a broad spectrum of technologies and a variety of different project concepts and instruments.

EnDev aims at the promotion of sustainable access to energy and wherever possible the development of sustainable markets for affordable energy access services and products, adapted to the needs of the target population. For that purpose EnDev has continuously amplified its instruments varying from extensive technical assistance for a wide range of stakeholders to a number of financing instruments including, lately, Results Based Financing. In addition, it has sophisticated its monitoring system to obtain reliable quantitative and qualitative information on beneficiaries, sustainability and impacts, including emission reductions and social and economic benefits of the access to modern energy services.

By June 2013 EnDev has facilitated access to modern energy services for more than 10 million people at programme costs of less than 20 EUR per beneficiary.

2. Terms of reference and target

2.1 The EnDev approach

EnDev's particular feature in comparison to other international programmes is the quantified global goal in combination with a competition-based cost-efficiency benchmark approach for the implementation of the country projects. It allows for fast scale-up of successful activities and flexible reallocation of funds between countries, according to performance. The global programme structure shall enable the rapid transfer of new approaches across several projects and cross-country learning. EnDev is currently not limited to few single countries but designed to seize opportunities for enabling access to modern energy in new countries in Africa, Asia and Latin America. In principle, all households without access to modern energy, no matter in which developing country they live, are the target group of the programme. However, due to the high percentage of energy poor households EnDev is focusing its activities on Sub-Saharan Africa (50% of funds have to go to Africa). In new countries, the programme generally funds initially only start-up phases with limited budget, where approaches seem to be promising for a later scale up due to a sufficiently solid structure or a promising development in terms of stable political frame conditions. If country activities prove to be successful according to defined criteria, they are proposed for up-scaling to use the arising opportunities as much as possible.

EnDev has a bottom-up approach. It is supporting initiatives on the ground and is enhancing markets through a close cooperation with stakeholders on micro and meso level. This allows EnDev to cooperate with a broad variety of organizations from the Government, the private sector and the civil society. The selection of the partner organization is done in a flexible way depending on the mandate, engagement, motivation and resources of the different organisations. In this way EnDev has the possibility to select governmental, private sector and civil society institutions in partner countries for

cooperation. Additionally EnDev country projects carry out joint activities with other implementing organisations from donor countries and cooperate closely with programmes of development banks.

2.2 Reasons and framework of the evaluation

EnDev phase 1 was finalized in 2009. From 2009 EnDev phase 2 has built on and expanded the EnDev programme further with a new outcome goal of initially additional 3 million people. EnDev 2 was financed by the same donors as EnDev1, i.e. the Netherlands (DGIS) and Germany (BMZ). Later in this phase other donors and financiers joined EnDev, i.e. Norway, Australia, UK and Switzerland as donors and Governing Board members, Ireland and the EU as co-financiers of individual country activities without representation in the Governing Board. The total budget of EnDev 2 now amounts to EUR 185.9 million, which at a benchmark cost of EUR 20 per person brings the overall EnDev goal to around 14 million people (EnDev 1+2 combined). EnDev is currently scheduled to run until December 2018. Therefore now at mid-term, EnDev's strategy is being reviewed to accommodate changes in both the Governing Board and the global energy access agenda. Part of this review and basis for further funding of (current and future) donors is an external evaluation of the EnDev programme, of its relevance, its performance, its structures, its alignments, and its management. The review should also serve to identify ways to further improve the programme strategy and implementation.

3. Objective and scope of the evaluation

In the development sector, EnDev is a unique energy programme. It is multi-donor funded, yet bilaterally implemented. It combines bottom-up sector development with a competitive and quantified outcome target, and combines high cost efficiency with the mobilization of considerable local funding. Additionally it focuses highly on sustainability of its results, both in terms of direct outcomes and in wider sector impact. It combines innovation and learning with robust monitoring of outcomes, and aligns and cooperates with an array of stakeholders on the local, national and regional level. EnDev operates worldwide.

These facts inevitably pose challenges to the programme, both in terms of governance and donor policy alignment, of management and of implementation. Although the program draws on its own experiences from 2005, an external program evaluation in 2008 and many evaluations on the country project level, neither donors nor implementers can rely on large scale existing experience and guidance. Besides, because of the growth in budget, number of donors, and consequently activities, instruments, partners and external relations the complexity and management task of the partnership has grown significantly.

Since the EnDev phase 2 has now run for four years, it is timely to review this innovative partnership as a whole and a selection of the activities in individual partner countries in order to take stock of the experience so far and to fine tune the operation of the partnership by incorporating the lessons learnt into the adjustment of the partnership strategy and the design of another phase. The outcomes of the review may also be used for future decision making by individual donors to continue or increase their contribution to the partnership and for possible new donors or financiers to step in.

The overall objectives can be summarized as:

- To review progress against the objectives and energy access targets set out in the design, to assess what the results are to date and to identify which additional measures are necessary to reach the stated objectives.
- To assess the strengths and weaknesses of the programme in meeting its objectives and targets (effectiveness and efficiency), to identify the perceived bottlenecks and shortcomings, the necessary remedial actions, to compile the lessons learnt and make recommendations based on these.
- To assess what is the added value of EnDev for donors as well as partner countries.
- To assess to what extend EnDev, despite having a bottom-up approach, has been able to inspire, influence and inform transformational change in partner countries and in the global energy access agenda.

The scope of the review covers an overall assessment of this innovative partnership as conceptualized within the framework of donor coordination and harmonization. This review will include an analysis of the partnership as a whole and a limited number of country analyses.

An in depth study of the socio-economic impact of the activities at local level will not be part of this review; only short field trips will be carried out to check on existing monitoring and evaluation reports. The evaluation team is expected to review existing evaluation reports of country activities to come up with a general and summarized assessment of the quality of impact studies and of the main findings (including sustainability of the interventions) of the studies in form of a desk study. Particularly, the social-economic impacts/trends on gender, climate, private sector development and sustainable market development, are to be addressed in this desk study. Additionally, missions to maximum four countries, at least one outside of Africa, are foreseen. The evaluation covers the time period of four years from May 2009 to June 2013.

The evaluation will be guided by an external reference group, to be appointed by the EnDev Governing Board.

3.1 Approach

The review will start with a briefing/inception meeting by the a Governing Board representation, the reference group, and the implementing organizations GIZ and NLA, followed by of a desk study of relevant documents and reports (to be provided by GIZ and possibly individual donors), telephone and/or in person interviews with the different representatives of the Governing Board members and GIZ & NL Agency. After that field missions to selected partner countries will be carried out, a draft evaluation report compiled at the end of the missions. This draft report will be presented and discussed with the evaluation reference group and GB representative(s).during the EnDev Governing Board meeting in November 2013 or in May 2014 depending on the start of the evaluation. After the presentation, the evaluators shall incorporate the comments raised into a final report to be submitted to the EnDev Governing Board not later than 2 weeks after receiving the comments from the reference group, the Governing Board member's representative(s), and GIZ and NL Agency.

The team will carry out an analysis of the partnership at different levels. This should lead to an assessment of the program as seen by the different direct and indirect stakeholders at different levels:

On a global programme level:

- Governing Board members at donor headquarters
- Implementing agencies (GIZ and NL Agency headquarters)
- SNV as implementation partner on global level. (Recently the Dutch SNV joined as implementing partner and will take responsibility (under GIZ) for the implementation of 6 country components. Except for Kenya these have not yet started however. Interviewing SNV is best performed at the HQ level.)
- Cooperation partners in the global energy access agenda (e.g. SE4All, Lighting Africa, GACC, Energypedia)

On the level of individual country measures:

- Donor representatives at embassy level (including the smaller co-financers EU and Irish Aid, if applicable in the at least two countries selected for in depth analysis)
- GIZ regional and country and project offices
- national and local government partner agencies
- private sector and civil society actors
- target group representatives
- Implementation partners (local and international NGOs, consultancy companies) on country level

During the country visits the EnDev country projects will provide full logistic support and prepare a visiting program. The evaluators will be granted access to the internal EnDev-Wiki on the Energypedia platform, in order to get full access to all relevant reports, studies, etc. Some documents may be written in German, Spanish and French. EnDev will not translate these documents into English.

3.2 Questions to be answered

3.2.1 At program level:

1. What is the overall effectiveness and efficiency of the partnership in achieving common GB donor objectives and results? Does the partnership and programme contribute to the realisation of common development cooperation objectives?
2. Are the representatives of the donors in the Governing Board and the implementing organisations satisfied with the results of the partnership so far, do they have suggestions for improvements?
3. What is EnDev's relevance with regard to global initiatives and developments on the SE4All agenda? What opportunities and threats exist for alignment and cooperation?
4. What do stakeholders consider EnDev's Unique Selling Points? Are the goals and objectives of EnDev consistent with these comparative advantages?
5. To what extend does a program like EnDev contribute to the effectiveness of Aid Delivery?
6. Is the programme set-up, governance and implementation structure adequate? What are the strong and weak points of the overall set up? What shall be improved?
7. How effective is the programme structure for management steering on results, both on the basis of outcomes and impact? What are recommendations for improvement?

8. What has EnDev achieved so far (status of progress)? Does the progress so far meet the planned objectives in terms of output and outcomes? What is the base for its success and which success factors for the outcomes and impacts have been assessed?
9. To what extent has the programme a knowledge management system allowing to learn internally from its experiences and to share knowledge?
10. How adequate has the program identified and managed different kind of risks?
11. Is EnDev's monitoring system for outcomes sufficiently effective, efficient and can be validated? Does the monitoring framework include measurable indicators, systematic and regular processes for collecting data, and feedback processes to facilitate decision making and learning? To what extent does the reportingprovide quantitative and/ or qualitative information on outcomes, impacts as defined (page 3, footnote, and paragraph 2: "the social-economic impacts/trends on gender, climate, private sector development and sustainable market development") and the sustainability of services and facilities?
12. Is the reporting and monitoring system appropriate to assess progress and to give a truthful representation of the results achieved; are there any incipient problems? Are there suggestions? Does the monitoring system deliver sufficient value for money?
13. What did EnDev II learn from the first phase of the programme? To what extent have the recommendations of the evaluation of the first phase been translated into EnDev II?

3.2.2 At partner country level:

14. To what extent are country approaches designed to reach the defined objectives and to reach the desired impacts?
15. To what extend does EnDev mobilize local resources and local initiatives relevant for a long term provision of access to modern energy services?
16. How do local stakeholders (private sector, government, NGOs) perceive EnDev?
17. Is there sufficient ownership of the partner country for the EnDev bottom-up approach? Is the process of the selection of individual projects appropriate? Does the program align with national or regional or sector policy targets?
18. What is the experience with the national level coordination between GIZ and the EnDev donor representatives (embassies etc.)? To what extent and how often do the representatives/embassies want to be involved/ informed in the program? What are the strong and weak points of this relationship and is there room for improvement?
19. Concentrating on outcomes and cost efficiency in a competitive environment may lead to shortcomings in attention for 1) a balance of the programme portfolio 2) long term sustainability of the results,3) capacity development, 4) sharing of knowledge, 5) working towards autonomously growing markets or through timely cooperation with others, and 6) a sound and successful exit strategy. In what way are these potential shortcomings being addressed at the country project level? What recommendations can be made?
20. Are the bottom-up activities of EnDev suitable for scaling up? Have EnDev experiences on micro and meso level successfully informed policy making?

3.3 Review team

The team shall consist of two senior level experts (at least 5-10 years of professional experience) and one junior expert. One of them shall be assigned as the Team Leader and be responsible for the delivery of the report.

Profile of the consultants
All senior consultants should have previous experience with complex program reviews and be familiar with project cycle management procedures. They may complement each other to cover the following fields of expertise:

- Institutional development, complex multi-donor programs, (silent) partnerships, and the international framework for donor harmonisation (Paris Declaration and follow up process).
- The energy sector in developing countries (in particular energy access for the poor).
- The relevant poverty, gender, health, environmental (including climate) and sustainability aspects of the provision of energy services to the poor.

All senior consultants must have previous experience in developing countries in Africa, and must be fluent in English (reporting language). At least one of them should be conversant in German. One should have at least basic skills in French and in Spanish. None of the consultants may have been directly involved in the execution of the EnDev program previously.

3.4 Reporting requirements

The consultants will submit an inception report and discuss this with the reference group (inc GB representative, GIZ and NLA) at the start of the project. The draft evaluation report must be submitted to the reference group (inc GB representative, GIZ and NLA) Governing Board representative at the latest two weeks after the field trips and the fact finding phase have been completed. A physical meeting (possibly with inclusion of some participants via video connection) will be organized within 2 weeks after receipt of the draft to discuss the draft. The final report must be completed no later than two weeks after receipt of the comments and presentation/discussion of the draft report. Comments will be communicated by through the EnDev Governing Board in writing three weeks after receipt of the draft report and orally during the presentation of the draft report in a Governing Board reference group meeting.

The length of the report should not be more than 50 pages (Arial 11pt).
The draft report should be sent electronically
Hard copies of the final report should be delivered to the Governing Board

3.5 Time schedule

The review team should commence its work within two weeks after the assignment has been granted. The draft report must be submitted no later than four months after the beginning of the assignment.

It is suggested that the review follows the following roadmap:

	Senior Expert 1	**Senior Expert 2**	**Junior Expert**
Phase 1			
Briefing GB, GIZ, NLA	1	1	1
Interviews with donor staff and study of documents	4	4	4
Interview NL Agency	1	1	1
Briefing and interviews GIZ and study of documents	6	6	10
Desk study at home location	4	4	8
Phase 2			
Field mission country 1	9		9
Field mission country 2		9	9
Field mission country 3	9	9	
Field mission country 4	9	9	
Draft report	5	5	
Phase 3			
Presentation of findings, debriefing with GB, GIZ, NLA	1	1	1
Final report	3	3	5
Total number of days	**52**	**52**	**48**

C. Research questions

At a program level

1. What is the overall effectiveness and efficiency of the partnership in achieving common GB donor objectives and results? Does the partnership and program contribute to the realization of common development cooperation objectives?

2. Are the representatives of the donors in the Governing Board and the implementing organizations satisfied with the results of the partnership so far, do they have suggestions for improvements?

3. What is EnDev's relevance with regard to global initiatives and developments on the SE4All agenda? What opportunities and threats exist for alignment and cooperation?

4. What do stakeholders consider EnDev's Unique Selling Points? Are the goals and objectives of EnDev consistent with these comparative advantages?

5. To what extent does a program like EnDev contribute to the effectiveness of Aid Delivery?

6. Is the program set-up, governance and implementation structure adequate? What are the strong and weak points of the overall set up? What shall be improved?

7. How effective is the program structure for management steering on results, both on the basis of outcomes and impact? What are recommendations for improvement?

8. What has EnDev achieved so far (status of progress)? Does the progress so far meet the planned objectives in terms of output and outcomes? What is the base for its success and which success factors for the outcomes and impacts have been assessed?
9. To what extent has the program a knowledge management system allowing to learn internally from its experiences and to share knowledge?

10. How adequate has the program identified and managed different kind of risks?

11. Is EnDev's monitoring system for outcomes sufficiently effective, efficient and can be validated? Does the monitoring framework include measurable indicators, systematic and regular processes for collecting data, and feedback processes to facilitate decision making and learning? To what extent does the reporting provide quantitative and/ or qualitative information on outcomes, impacts as defined (page 3, footnote, and paragraph 2: "the social-economic impacts/trends on gender, climate, private sector development and sustainable market development") and the sustainability of services and facilities?

12. Is the reporting and monitoring system appropriate to assess progress and to give a truthful representation of the results achieved; are there any incipient problems? Are there suggestions? Does the monitoring system deliver sufficient value for money?

We have added one research question as it is stated as a key objective in our terms of reference (see paragraph 1.4), but did not have an associated research question.

13. To what extent has EnDev been able to inspire, influence and inform transformational change in partner countries and in the global energy access agenda? We have formulated an additional working hypothesis for this question.

In close consultation with the EnDev management team and our reference group (see paragraph 1.7), we have deleted the following question and agreed to address this question whilst answering the other questions to the extent this is deemed relevant and of added value.

- What did EnDev II learn from the first phase of the program? To what extent have the recommendations of the evaluation of the first phase been translated into EnDev II?

At a country level

14. To what extent are country approaches designed to reach the defined objectives and to reach the desired impacts?

15. To what extent does EnDev mobilize local resources and local initiatives relevant for a long term provision of access to modern energy services?

16. How do local stakeholders (private sector, government, NGOs) perceive EnDev?

17. Is there sufficient ownership of the partner country for the EnDev bottom-up approach? Is the process of the selection of individual projects appropriate? Does the program align with national or regional or sector policy targets?

18. What is the experience with the national level coordination between GIZ and the EnDev donor representatives (embassies etc.)? To what extent and how often do the representatives/embassies want to be involved/ informed in the program? What are the strong and weak points of this relationship and is there room for improvement?

19. Concentrating on outcomes and cost efficiency in a competitive environment may lead to shortcomings in attention for 1) a balance of the program portfolio 2) long term sustainability of the results,3) capacity development, 4) sharing of knowledge, 5) working towards autonomously growing markets or through timely cooperation with others, and 6) a sound and successful exit strategy. In what way are these potential shortcomings being addressed at the country project level? What recommendations can be made?

20. Are the bottom-up activities of EnDev suitable for scaling up? Have EnDev experiences on micro and meso level successfully informed policy making?

D. List of persons and organizations interviewed

Program-level interviews

Category	Person	Organization
EnDev	Carsten Hellpap	GIZ
	Christoph Messinger	"
	Gunnar Wegner	"
	Verena Brinkmann	"
	Marco Hüls	"
	Inga Buchholtz	"
	Marcel Raats	Ministry of Economic Affairs - RVO
	Derk de Haan	"
	Carmen Heinze	"
	Robert van der Plas	Consultant
Cooperating programs within GIZ	Marlis Kees	GIZ / HERA
	Bozhil Kondev	"
	David Otieno	EUEI - PDF
Governing Board representatives	Reto Thönen	Switzerland (DEZA)
	Michael Quinn	Australia (DFAT)
	Steven Hunt	United Kingdom (DFID)
	Even Stormoen	Norway (MFA)
	Frank van der Vleuten	Netherlands (DGIS)
	Michael Körberlein	Germany (BMZ)
Co-financing partners	Sean O'Donncha	Irish Aid
External stakeholders	Jiwan Acharya	ADB (Energy for All Initiative)
	Oliver Knight	World Bank (ESMAP)
	Dana Rysankowa	World Bank
	Mikul Bhatia	World Bank (Energy Anchor)
	Leslie Cordes	Global Alliance for Clean Cook stoves
	Ben Good	Global Village for Energy Partnership
	Robert de Groot	HIVOS
	Prof. Adelmann	Id-eee
	Ewan Bloomfield	Practical Action
	Wim van Nes	SNV
	Benjamin Pahlich	SOS Kinderdörfer
	Pol Raguénès	Microsol
	Emmanuel Léger	Total Access to Energy
	Wolfgang Gregor	GOGLA
	Jakob Schmidt-Reindahl	INENSUS
	Florian Ziegler	KfW
	Jens Drillisch	KfW

Peru

Category	Person	Organization
EnDev	Ana Isabel Moreno Morales	
	Verastegui Gubler	
	Angel Castro Rivera	
	Alicia Jocabed	
	Cabezudo Moreno	
	Carlos Enrique	
	Fernando Aspajo	
	Ileana Monti	
GIZ	Peter Pfaumann	GIZ country director
Donor country embassies		Dutch Embassy
Government	David Orozco Patricia Ormeno	Ministry of Energy and Mines
	Arquimedes Bohorquez Wilber Serrano	Ministry of Energy and Mines – Direccion General de Electrificacion Rural
	Orlando Chavez Chacaltana	Ministry of Energy and Mines – Dirección Normatividad de Electricidad
	Juan Vega	Ministry of Energy and Mines - Programa Cocina Perú
	David Carcausto	OSINERGMIN (Regulatory Board)
	Marco Vinelli	Ministry of Agriculture - Programa de Compensaciones para la Competitividad – AGROIDEAS
	Ing. Rafael Rengifo	Dirección Regional de Energía y Minas San Martín
	Ing. Marisol Ramirez Fasanando	Dirección Regional de Agricultura del Gobierno Regional de San Martín
	Hernando Carpio Gabriela Esparza Patricia Mestanza	Servicio Nacional para la Industria de la Construcción – SENCICO (ICS testing laboratory; capacity building
Target group representatives		Beneficiaries Secure Electricity Installations (CEIBS)
		Contractor implementing CEIBS
		Two trained electricians
		2 Agroprocessing Cooperatives (cocoa and coffee)
		Beneficiaries of ICS
		Two ICS-producers

Category	Person	Organization
		Five small enterprises selling Pico-PV systems in rural areas
		Two Pico-PV importers
		Alumbrando (contractor in SHS)
Private sector	Alica Ruiz	Corporación Financiera de Desarrollo – COFIDE (MFI)
	Carla Palomares	ADA Microfinance Expertise (NGO cooperating in design of micro-finance products for productive use of energy)
	Natalia Realpe	MEI - MicroEnergy International GmbH (NGO cooperating in design of micro-finance products for productive use of energy)
	Jose Ortiz	Electricity cable producer participating in CEIBS – Indeco
	Miguel de la Puente	International Copper Association PROCOBRE participating in CEIBS
	Liz Quispe, Eliot Arteaga	University ESAN (cooperation on Productive Use of Energy)
	Rafael Espinoza Manfred Horn	Universidad Nacional de Ingeniería – UNI (technical testing of PV-products)
	Aldo Rosas	Alumbrando
	Romuli Bisetti	Bright Sun Power
	Paul Winkel	Power Mundo
NGOs	Rafael Escobar	Practical Action
International organizations	Carlos Echevarria	IDB

Nepal

Category	Person	Organization
EnDev	Bart Jan van Beuzekom	Program Director
	Pooja Sharma	Deputy Program Director
	Punam Chaudhary	Assistant
GIZ / KFW	Roland Steurer	GIZ
	Frank Boomer	GIZ
	Neeraj Subedi	KfW
Donor country embassies	Inge Harald Vognild	Norway
	Dirk Steffes-enn	Germany
	Sabita Thapa	United Kingdom (DFID)
Government	Dr. Govind Raj Pokharel / Manu Binod Aryal	AlternativeEnergy Promotion Centre
	Manoj Silwal	Nepal Electricity Authority
	Vishwa Prakash Pandit	Ministry of Energy
	Dilli Ghimire	NACEUN
Target group representatives	Suresh Paneru	CREE office, Ghyampesal
	Uday Prasad Neupne	Teshro Hundi MHP
	Padam Bdr. Neupane Kul raj Chalise	Arupokhari CREE
	Gaj Bdr. Gurung / Dev Bdr. Gurung	Arkhet MHP
	Sagar Luitel	Grid Contractor
Private sector	Dinesh Dulal / Suman Awale	Clean Energy Development Bank
	Rajesh Bhattarai / Samir Acharya	Himalayan Bank
	Bikram Raj Pradhan	Nepal Yantrashala
NGOs	Rem Neefjes / Guy Dekelver	SNV
	Vishwa Bhushan Amatya	Practical Action
	Juerg Merz	Helvetas
International organizations	Pushkar Manandhar	ADB
	Ashish Shrestha	World Bank
	Suman Basnet	SE4ALL (UNDP)

Ethiopia

Category	Person	Organization, Position
EnDev	Gerd-Henning Vogel	Program Director
	Elina Weber	Head, Policy, Strategy and Communication Department
	Ashenafi Assefa	Head, Finance & Administration Department
	Samson Atsbha	Head, RET Department
	Alemayehu Zeleke	Senior Bio-Energy Advisor
	Yemisrach Haile	Head, Planning, Monitoring & Evaluation (PM&E) Unit
	Dereje Bekele	Senior PM&E Advisor
	Fasika Daniel	PM&E Advisor
	Tewodros Berihun	Amhara Regional manager
GIZ / KFW	Wolfgang Hannig	GIZ
	Imruwa Demissie	KfW
Donor country embassies	Gerrit Noordam	Netherlands
	Lars Ekman	Norway
	Ben Siddle	Ireland
Government	Gossaye Mengiste Abayneh	Energy Study and Development Follow-up Directorate, Ministry of Water, Irrigation and Energy
	Ato Asress	Alternative Energy Technology and Promotion Directorate, Ministry of Water, Irrigation and Energy
	Getahun Moges Kifle	Ethiopian Energy Agency
	Ato Abraham	National Clean Cookstove Program
	Ato Said	RMERDPA (Amhara regional energy bureau)
Target group representatives	Tikikil stove producer	Gogle
	Mrs. Genete	Cookstove producer
	Ato Assefa	Solar retailer
		Chrambezo Health Centre
		Wogen Women's Association (bakery)
		Solar retailer in Bahir Dar
Private sector	Nebiyu Assefa	Alphasol (solar system importer and MHP implementer)
	Dereje Walelign	Lydetco (solar system importer)
	Thomas Koepke	Fosera (solar lantern producer)
NGOs	Jane Adisu	SNV

Category	Person	Organization, Position
	Samson Tsegaye	Solar Energy Foundation
	Ato Tamirat Tadess	Selam Solar Training Centre
	Araya Asfaw	Horn of Africa Regional Environment Centre (HoAREC)
	Dejene Miniliku Mekoya	Orda
	Ato Fassile	Plan International
	Community members	Awra Amba community
International organizations	Crispen Zana	African Union / EUEI PDF
	Kidanua Abera	UNDP
	Issa Diaw	World Bank
	Jean-Baptiste Fauvel	European Union
Other	Tom Erichsen	Differ Group (energy consultancy for Energy +)

Kenya

Category	Person	Organization
EnDev	Reimund Hoffmann	Program Director
	Anna Ingwe	EnDev stove component manager
	Walter Kipruto	EnDev solar component manager
	Maxwell Musoka	EnDev stove advisor
Donor country embassies	Astrid Lervag	Norwegian Embassy
Government	Isaac N. Kiva, Faith Odongo	Ministry of Energy & Petroleum
	Essau O. Omollo	Kenya Forest Service
	Eustace Njeru	Energy Regulatory Commission
	Willis B. Makokha, Nathan Bogonko	Kenya Industrial Research and Development Institute (KIRDI)
Target group representatives	Weche Akala, Simon Kinyanjui Janet Odeyo	Improved Stove Association Kenya
	Asinatu Gamaliel	Kenya Tea Development Agency (KTDA)
Private sector	Charles Muchunku	Kenya Renewable Energy Association (KEREA)
	Julien Wachira	D-Light
	Ben West	Ecozoom
NGOs	Jechoniah Kitala	SNV Kenya
	Laura Clough	GVEP
	William Marwanga, Lawrence Kiguro	WorldVision
	Paul Chege and Hannah Wanjiru	Practical Action
	Barrack Bosire and Ibrahim Makocka	Winrock International
International organizations	Itotia Njagi and Nana Asamoah	Lighting Africa
	Daniel D. Wonjohi	GACC
	Myra Mukulu	Clean Cookstoves Association of Kenya (CCAK)

Malawi

Category	Person	Organization, Position
EnDev	Maya Stewart	Project manager
	Mbumba Chigalu	Marketing manager
	George Masache	Database manager
	Janet Msiska	Environmental and Extension Manager
	Christa Roth	Food and Fuel Consultants (EnDev Malawi consultant)
	Marco Hüls	EnDev Malawi AP at headquarter
GIZ	Matthias Rompel	GIZ country director
Donor country embassies	Anne-Katrin Pfeiffer	Germany
	Aidan Fitzpatrick	Irish Aid/ Ireland
	Donald Kamdonyo	DfID/ United Kingdom
Government	Cornwell Chisaly	Ministry of Energy
	Yamungu Botha	Presidential Initiative on Cookstoves
Target group representatives	Modeste, Messisi, Ernestine, Lucrecia	Chitetezu Mbaula customers
	Alfred Chisale	urban semi-industrial stove producer
	Sheikh Ahmed	Chipiku supermarkets (distribution channel)
	Manager and marketing manager	Chipiku plus supermarket
	Gift Esau	Puma filling stations (distribution channel), Regional Sales manager
	Station manager	Puma filling station
Private sector	Conor Fox and Cristel Cheong	Hestian Innovation Carbon
	Jordan Kowalke	C-Quest Capital/TLC Green
NGOs	Heather Campbell	Concern Universal
	John Kanthungo	AGRED
	Ken McCarthy	Goal Malawi
International organizations	David Chalmers	USAID
	Pam Jagger	University of North Carolina

E. Questionnaire for the interviews

Program-level interviews

Program-Level	
Effectiveness - Results - Outcomes - Impacts	– What has EnDev achieved so far? What are the key results of the EnDev program? – Are these the results that you / the donors (NL, GE, UK, NO, CH, AU) are looking for? – Are you (donors / implementing agencies) satisfied with the results? – Does the progress so far meet the planned objectives in terms of output and outcomes? – What is the base for its (satisfactory or disappointing results)? – Do you have suggestions for improvements? – Is EnDev an effective means to deliver aid (i.e. in line with Paris declaration)? – Is EnDev able to develop 'sustainable markets' for energy services? How? (or why not?)
Relevance - Alignment - Value-added - Cooperation *	– What do you consider EnDev's Unique Selling Points? – What is EnDev's relevance or value-added to the myriad of global energy access initiatives? – What opportunities and threats exist for alignment and cooperation? – Does competition exists between the initiatives? How do you judge / value such competition? – How/where does EnDev fit into your broader energy/development strategy?
Sustainability - Long-term results - Environmental impact	– Will households / SME's remain connected if EnDev closes tomorrow? – How will markets develop after EnDev closes down? – Does the implementation of selected technologies in any way have a detrimental effect on the social and natural environment?
Efficiency - Value-for-money - Manageability - Processes* - Steering mechanism*	– Is the organizational set-up and decision-making process such that results are achieved efficiently? – Is the program set-up, governance, implementation structure, steering mechanism and team work adequate? – What are its strength, weaknesses, opportunities and threats? – What shall be improved?
(Internal) learning*	– How do you view EnDev knowledge management system? – How do you view EnDev learning culture? At a program-level and country-level – What did EnDev II learn from the first phase of the program? (GE will provide overview of recommendations) – Have the recommendations of the evaluation of the first phase been translated into EnDev II?
Monitoring	– Is EnDev's monitoring system effective? – Does the monitoring framework include measurable indicators, systematic and regular processes for collecting data, and feedback processes to facilitate decision making and learning? – Is EnDev's monitoring system efficient, provide value-for-money? – Can the outcomes of the monitoring system be validated? – Does the monitoring system provide you information on the impact on gender, climate, private sector development and sustainable market development? Is the reporting and monitoring system appropriate to assess progress? – Gives the reporting and monitoring system a truthful representation of the results achieved? – Do you perceive any problems? Do you have suggestions?

Risk management	– What kind of risks does EnDev face? – How adequate and structured has the program identified and managed different kind of risks?
Transformational change	– To what extent has EnDev been able to inspire, influence and inform transformational change in partner countries and in the global energy access agenda?
Strategy*	– How do you view EnDev's overall strategic approach?
MfDR / RBF*	– How effective and efficient is the program's management for development results? – What is are the strength, weaknesses, opportunities and threats of the result-based financing tool? – What are recommendations for improvement in MfDR and RBF? –

Country-level interviews

Country level**	
Effectiveness - Results - Outcomes - Impacts	– How do country programs and approaches come about? – Are country approaches designed in such a way that they are likely to reach the defined objectives and impacts? – How are individual projects identified, selected, and implemented? – Is the process of the selection of individual projects appropriate? – Is EnDev country portfolio balanced in terms of EnDev's country objectives? – Does EnDev work towards autonomously growing markets? – Are the bottom-up activities of EnDev suitable for scaling up? – Have EnDev experiences on micro and meso level successfully informed policy making?
Relevance - Alignment - Value-added - Cooperation *	– How do local stakeholders (private sector, government, NGOs) perceive EnDev? – Is EnDev well-aligned to local initiatives and national development plans? – To what extent does EnDev mobilize local resources (money and sweat)? – Does EnDev foster local initiatives relevant for a long term provision of access to modern energy services? – Cooperates EnDev in a timely matter with others? – How well are EnDev activities coordinated at the national level? With recipient country? With donor representatives? – How the donor representatives perceive the information, coordination and alignment? – What are the strong and weak points of above relationships and is there room for improvement? – Is there sufficient ownership of the partner country for the EnDev bottom-up approach? – Does the program align with national or regional or sector policy targets?
Sustainability - Long-term results - Environmental impact	– What are the long term sustainability of the results
Efficiency - Value-for-money - Manageability - Processes* - Steering mechanism*	– *Refer to questions at program level*

(Internal) learning*	– What are EnDev's achievements in capacity development, knowledge sharing?
Monitoring	– *Refer to questions at program level*
Risk management	– *Refer to questions at program level*
Transformational change	– *Refer to questions at program level*
Strategy*	– Does EnDev have a sound exit strategy (at a country and program level)
MfDR / RBF*	– *Refer to questions at program level*

F. Systematic review of impact evaluation reports

Introduction

The basis for the systematic review on impact evaluation reports and sustainability studies of EnDev interventions is the list of studies provided through Energypedia[27]. This list presents a total of 77 studies labelled as "impact", "socio-economic" or "sustainability" studies. We excluded all studies published before 2009 (n=12) or which are not yet finalized (n=8). During a critical appraisal stage, we furthermore excluded four studies that evaluate exclusively EnDev 1 activities, one study that in fact is only a baseline study and five "socio-economic" studies that are no impact studies but general overviews on subsidy schemes or impact indicator definitions. Two further studies labelled as "sustainability studies" are excluded since they do not analyse the sustainability of the intervention, but are rather strategy documents that elaborate future steps to develop the solar market in Ethiopia. Another study had to be excluded, since it had never been officially finalized. The remaining 44 impact and sustainability studies have been systematically reviewed along the following criteria:

Criterion	Comment
Country	Which countries are analysed?
Year	Year of publication
Technology	Which technology is analysed?
Independency of authors	Is evaluation done by EnDev itself, a single consultant or external institutions (universities, institutionalized consultancies etc.)?
Sample size	How many beneficiaries have been interviewed?
Identification Strategy	Qualitative vs. quantitative approach; cross-sectional vs. panel data; experimental vs. quasi-experimental designs

A subsample of the studies have been reviewed in greater depth along criteria that specify the identification strategy, sampling, impact categories analysed and indicators used.

Criterion	Comment
Impact categories analysed	Outcomes (connection/stove usage status) vs. intermediate indicators (e.g. lighting usage) vs. ultimate poverty indicators (e.g. quality of life, income, educational outcomes)
Indicators used	Are indicators appropriate given the scope of the study (sample size, applied identification strategy, etc.)? Are indicators appropriate for drawing conclusions on impacts?

The major findings are described in the following. Details have been documented in the Excel data base used for the review that is available upon request.

Findings

Studies have been conducted on all three continents where EnDev is active. Most studies have been conducted in Africa where also most interventions are located. While the number of studies per country

[27] http://endev.energypedia.info/index.php/EnDev_Studies

is highest in Latin America, the ratio of studies conducted per amount of EnDev money invested into the respective interventions is highest in Asia.

Distribution of studies by continent (N=44)

	Total number of studies	Studies per country	Studies per investment (per Mio. EUR)	Number of EnDev countries	Total Endev investment
Africa	26	1.73	1.67	14	43.39
Asia	7	1.75	2.24	4	15.69
Latin America	11	2.75	1.58	4	17.33

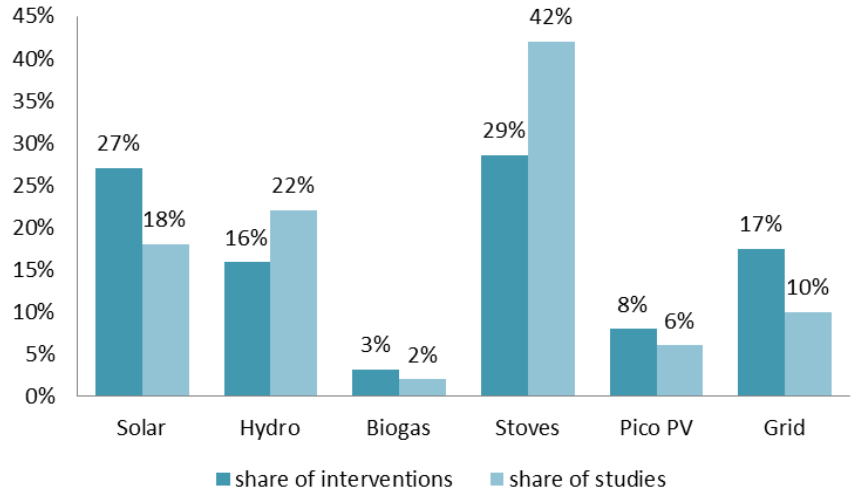
A more detailed look at the countries where the studies have been conducted shows that the number of studies ranges between 0 and 6. The longer the country intervention exists, the more studies have been conducted in the respective country.

Number of studies by country

Continent	Country	Number of Studies	Number of sustainability studies	Project Duration (in years)	Study per project year
Africa	Benin	1		5	0.2
	Burkina Faso	3	1	5	0.6
	Burundi	0		3	0
	Ethiopia	4	1	4	1
	Ghana	1		4	0.25
	Kenya	6	1	4	1.5
	Liberia	0		2	0
	Madagascar	0		1	0
	Malawi	0		1	0
	Mali	0		1	0
	Mozambique	2	1	4	0.5
	Rwanda	3		4	0.75
	Senegal	3	1	5	0.6
	Tanzania	0		0	0
	Uganda	3	2	5	0.6
Asia	Bangladesh	2		5	0.4
	Cambodia	0		1	0
	Indonesia	3	2	5	0.6
	Nepal	2	1	5	0.4
LA	Bolivia	1		4	0.25
	Honduras	2		4	0.5
	Nicaragua	4	2	4	1
	Peru	4		4	1
SUM		**44**			

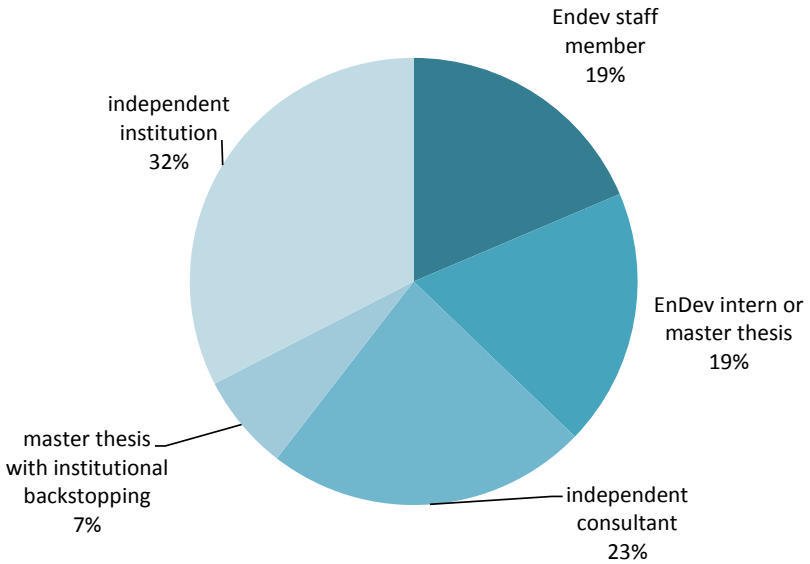
Most studies conducted analyze improved stove interventions (42 percent), followed by hydro-power studies. The shares of the different access technologies analyzed coincide roughly with the EnDev portfolio if we look at number of interventions. Considering though the number of beneficiaries served by EnDev, where cooking energy stands for the bulk of connections, the share of studies on stoves seems rather low.

Technology assessed (N=44)



The degree of independency of the authors differs widely. Around one third of the studies are done by EnDev staff or closely related persons such as interns or students writing their master thesis, one third by independent consultants without institutional backing and another third by independent institutions (universities etc.).

Independency of author (N=44)



Due to a lack of formal requirements and the diversity of impact studies, the studies cover very different topics using very different approaches. The findings are therefore hardly comparable. As a matter of course hardly any study covers all impact categories of interest to EnDev (social-economic impacts/trends on gender, climate, private sector development and sustainable market development). Most of the studies report on socio-economic impacts; some effects on gender is analysed among around half of the studies (many of them look at usage rates by gender; some also on impacts such as income of female enterprise owners or firewood collection time disaggregated by gender); impacts on climate are indirectly analysed by many studies through the assessment of fuel savings, while CO_2 mitigation is hardly analysed (which is understandable, since the methodology to so would be quite difficult in many cases, particular stove projects); private sector development is analysed in around half of the studies and analyses of sustainable market development is only pursued in sustainability studies.

Overall assessment

Altogether we can say that the impact and sustainability studies are very diverse in scope, topics, and quality. Since there are no formal requirements set by EnDev, the studies cover very different topics using very different approaches. The findings are therefore hardly comparable. Moreover, only few studies have been conducted by independent researchers with an institutional backing (which gives them more independency than individual consultants). Also, few studies have been conducted by experienced evaluators (irrespective of socio-economic or anthropologic background and qualitative vs. quantitative approaches).

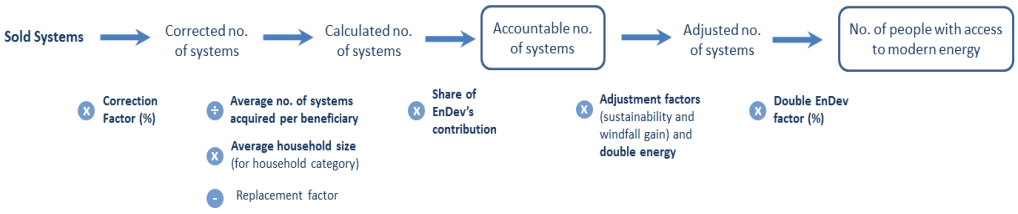
Some of the studies are very ambitious in what they aim at and they give some interesting anecdotal insights. In order to answer questions on ultimate poverty impacts and sustainability in a robust way, though, they often fall short of analytical power, either due to too small sample sizes resulting from too small budgets or because of a lack of methodological background of the evaluators. This, however, is not the fault of the evaluators, since the ambition of the respective impact study is in most cases too high given the budget that is available for its implementation.

G. Review of EnDev's counting rules

EnDev applies a sophisticated procedure in order to come up with a reliable, conservative best estimate of the number of beneficiaries who effectively gained sustainable access to modern energy. This ambition is mostly fulfilled. In the following, the procedure is briefly outlined and discussed. Recommendations are made how to further improve on the counting and the way the results are reported. In addition, suggestions are made on how to define and set up the components of the counting formula more clearly and consistently.

Box 1 reproduces a basic outline of the EnDev beneficiary counting as found on Energypedia.

Box 1 Beneficiary counting as outlined by EnDev



1. Collection of raw data. In most cases, these are systems sold / installed or households served
2. Applying the correction factor for those cases where e.g. there's a grounded suspicion of over- or underreporting yield the ***"corrected number"***
3. For some technologies only (Stoves, Pico-PV), subsequent application of the replacement factor results in the ***"calculated number"*** **(we'd consider alternative term: e.g. "project period number of beneficiaries").**
4. In cases where EnDev is not the only donor, application of EnDev's share factor yields the ***"accountable number"***
5. For those cases where both electricity and cooking energy were provided, the double EnDev factor should be applied yielding the ***"uniquely accountable number"***
6. Finally three adjustment factors are applied in order to adjust for sustainability, windfall gain effects and double energy. The result of this calculation is called the ***"reported number".***

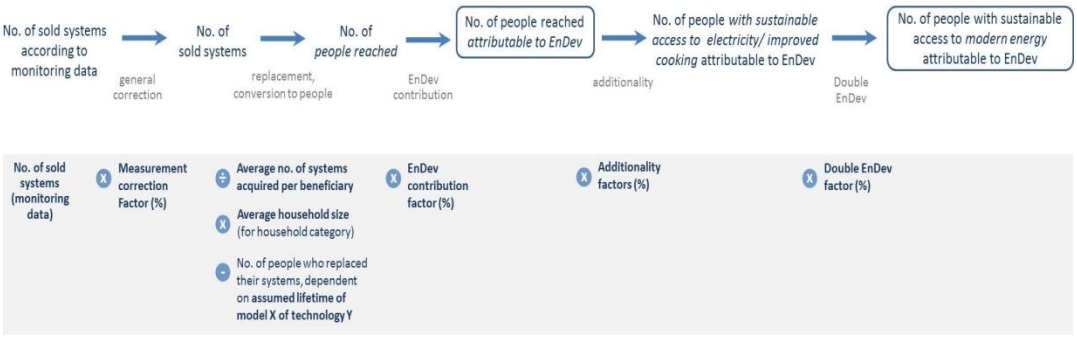
This data processing is similar for all categories (households, social infrastructure and productive use). The difference between the three is the conversion into "benefiting units", which for households is the number of people per cookstove or per electricity connection, while for SI and PU it's the number of SI's / PU's benefiting from each system.

As indicated in the graph, for different purposes outcome may be presented either as the accountable number, the uniquely accountable number or the reported number.

Source: http://endev.energypedia.info/wiki/Counting_Principles
Note: The graph is as well taken from this webpage and has only been slightly complemented by a few components of the actual EnDev counting formula.

In order to comprehensively discuss the EnDev counting, Figure 1 presents a more detailed version of the chart in Box 1 that depicts all steps in the counting procedure (upper part) and components of the calculation formula (lower part). Some terms have been modified to be more self-explanatory and to better reflect the stepwise approach of the calculation procedure, where each step is highlighted in *italic*.

Figure 1 Beneficiary counting procedure



The procedure outlined in Figure 1 is valid for all beneficiary categories, i.e. households, enterprises and social infrastructure institutions. It has to be applied to each model of each energy technology separately. Different improved cook stove models such as portable clay or stationary brick stove, for example, have different lifetimes. Different pico-PV models may address different customer segments with different baseline conditions, which affects the *Additionality factors*. For a similar reason, calculations are sometimes differentiated by location. In conclusion, the final outcome figure is the sum of numbers of people for (if applicable) different models of different energy technologies in different locations, which are determined every six months. Figure 2 visualizes this aggregation process.

Figure 2 Classification of energy technologies

Model of en. techn.	*Energy technology*	*Energy tech-nology type*	*Energy category*
	Improved Cookstoves	Improved cooking	Modern energy
	Biogas		
	Grid	Electricity	
	Solar Home Systems		
	Hybrid systems		
	Micro Hydro		
	Pico-PV		
	Biogas		

Components of the counting formula in Figure 1 that have to be determined by EnDev are highlighted in the gray box. These are discussed in Table 1. The table also refers to data from a review of all Outcome Calculation Sheets (OCS). End 2012/ beginning of 2013, there were 52 different EnDev components ongoing in the two household lines of activity, Energy for Lighting & Electric Household Appliances and Cooking Energy for Households.

Table 1 Discussion of counting formula components

Component of counting formula	Observation and Valuation
No. of sold systems according to monitoring data	This is the only number that continuously needs to be collected on an individual level (households, enterprises and social infrastructure institutions). All other components of the formula are typically determined once for the whole project cycle (even though modifications may be required along the way) and require any form of justification (see *Remarks column* at the bottom of this table). For a discussion of the collection of the raw monitoring data, see the monitoring research question (section 2.10).
Measurement correction factor (%)	This factor called *General Correction Factor* by EnDev is supposed to correct for the effect that initially collected data for some reason are structurally too low or too high; 16 of the 52 household components apply such a factor, all of them a factor smaller than 1 indicating that reported data is assumed to be too high. For part of these 16 components, the factor seems to be applied mistakenly and rather reflects additionality (hence, the *Additionality factors* discussed below). For the sake of consistency and understandability, EnDev might seek to correct these mistakes. Since they do not affect the final outcome figure, these errors are, however, tolerable.
Average no. of systems acquired per beneficiary	Average numbers different from 1 can only be found with 5 of the 12 stove projects, where they account for multiple stove use by households, so-called stove stacking. These stove component factors appear plausible. It is debatable, whether certain Pico-PV and SHS projects should also make use of this factor. In some countries, a good part of the prevailing lighting or electricity demand is not covered by these systems, e.g. in larger Western African households with several huts, where the Pico-PV or solar home system effectively only reaches part of the household members.
Average household size (for household category)	It seems partly unclear, how the *Average household size* has been determined. For urban Dakar, for example, EnDev counts with 10 people, though it was found in a representative EnDev survey that the average household size in the intervention areas is 8 – census data (from 2002) mentions 7.5. This would imply an inflation of outcome figures by 20 to 25%. A similar observation has been made for FAFASO in Burkina Faso. The recommendation here is to justify the choice of *Average household size* values by providing information on the source from where this value has been taken (see also *Remarks column* below).
No. of people who replaced their systems, dependent on assumed lifespan of model X of technology Y	The sales data is reduced by this number only for stove and Pico-PV projects. This is because the lifespan of all other technologies can be expected to exceed the project duration so that no replacement takes places within the project cycle. An example shall explain how this reduction is done: For stoves with a lifespan of 3 years, the number of EnDev stoves sold in 2011 is deducted from those sold in 2014, since the 2014 stove merely replaces the 2011 stove and does not provide new access. A major problem faced by the projects is to set an adequate lifespan, since households tend to use the systems longer than one would expect. Currently, assumed lifespans range between one and five years. If the lifespan is set too low (which is mostly the case due to EnDev's attempt to calculate conservatively), (far) too many stoves are deducted. This problem can only be tackled by (non-sophisticated) stove user tracking surveys, which may even be done via phone. A caveat with this part of the calculation formula remains, which lies in the fact that *all* previously sold systems are deducted. In fact, only those systems sold in the past should be deducted, which were assumed to be used sustainably by the households. For this reason,

	this number should be reduced by the respective *Sustainability factor*. This change would improve the overall outcome figures.
EnDev contribution factor (%)	This factor is supposed to account for EnDev's share among the intervention's access figure in case of co-implementation with the government or others. So far, EnDev only considers the share of the EnDev subsidy in total non-domestic subsidies (what they call *Share of EnDev's contribution*). Accordingly, there are only 4 of the 52 household energy components, where this factor is different from 100% in the latest reporting period. Another 3 of them had factors below 100% in the past. Domestic contributions are explicitly desired so that EnDev does not consider them for the EnDev contribution factor, because this would reduce the factor. This procedure, however, is problematic, since it may inappropriately favour projects which are active in countries with more own financial resources and/or a higher ownership even though these favorable conditions have not been created by EnDev. In addition, we see an alternative how to reward projects that succeed in raising domestic contributions that is outlined below. We therefore strongly recommend including domestic contributions in the denominator of the *EnDev contribution factor*. Since there are projects that actually created favorable conditions in the country themselves or otherwise contribute in a non-monetary way (mainly via technical assistance, TA), we propose a second main change in the *EnDev contribution factor*: Attribution should reflect monetary *and* non-monetary contributions. For this purpose, we propose that – in case of co-implementation – this factor is the result of a negotiation process between co-implementing parties. While only national governments report access numbers to SE4All in the future, one could see this negotiation as a way to agree on who can actually be held accountable for these numbers – so to say an appropriate sharing of the pie of access numbers. This negotiation would take the monetary contributions as a starting point and then adapt the EnDev share in such a way that it includes the non-monetary contributions. For the case of cook stoves in Peru, for example, where subsidies are fully paid by local governments and EnDev only provides TA, the EnDev contribution factor would not be 100% as it is now and not 0% (EnDev's share in total subsidies), but probably somewhere between 10 and 20%. This figure could then be included in a MoU that is made in the preparatory phase of a project (and may be open for revision in case of changes in the project structure). Such a procedure would surely require additional guidelines or a body that reviews these shares; yet, it would not only guarantee alignment with SE4All counting but also lead to cost-per-beneficiary figures that are comparable between projects with lower and higher subsidy components.
Additionality factors (%)	EnDev applies three *Additionality factors*: the *Double Energy Factor*, the *Windfall Gain Factor* and the *Sustainability Factor*. The *Additionality factors* are intended to correct for the effect that some beneficiaries would have had sustainable access to a technology also without EnDev intervention. Determining this factor requires a so-called counterfactual thinking: what would have happened in the absence of the intervention? Or more precisely: Which share of the *number of people reached attributable to EnDev* has gained sustainable access additional to the business-as-usual case due to the intervention? The starting point here is the baseline situation, which EnDev covers with the *Double Energy Factor*, the share of people already provided with the respective energy technology type. Since conditions likely would have changed also without the intervention, the *Windfall Gain* additionally reduces the outcome figures by those beneficiaries, who would have additionally gained access later. Finally, the *Sustainability Factor* reduces the resulting number by those beneficiaries that can be expected to not have gained access in a sustainable way. All three sub-factors as applied by EnDev are discussed in the following.

	In combination with the suggestions made for co-implementation projects under the *EnDev contribution factor*, we suggest to also assess additionality in a slightly different way. Currently, the additionality of the EnDev contribution to an intervention is assessed, trying to answer the sometimes contestable question of "Did the EnDev involvement make the project viable?" Instead we propose to assess additionality of the intervention as a whole (including local contributions) and then assessing the EnDev contribution separately as proposed under the *EnDev contribution factor*. This would surely make the endeavor of proper attribution to EnDev more systematic and less contestable.
Double Energy Factor and *Windfall Gain Factor*	EnDev applies the *Double Energy Factor* in 35% and the *Windfall Gain Factor* in 46% of its household energy components. In principle, the approach is correct and the factors seem to match reality fairly well. The chosen *Windfall Gain Factor* may partly be too low in electricity projects, since solar panels and LED lamps experienced a higher penetration than expected. On the other hand, the *Double Energy Factor* is rather too strictly (conservatively) defined, since the baseline situation may include people who would have lost their energy access if EnDev wouldn't have intervened. This is the case for households who received their cook stoves in the framework of a former one-time stove distribution project. EnDev stoves are a new access to modern energy for them as well, which is sustainable to a degree reflected in the *Sustainability Factor* (see below).
Sustainability Factor	The *Sustainability factor* is the most widely applied factor. In all but 4 components this factor is set to a value different from zero. The idea behind this factor is to address the likely scenario that not all beneficiaries will continue to use and replace the provided technologies after the EnDev intervention ceases. Some initial beneficiaries will disconnect from the provided technology or not replace a broken system. The inclusion of this factor is particularly welcome and it is generally correctly applied given the existing information. Nonetheless, it has to be noted that this factor is highly speculative and there is yet little evidence on how energy projects will develop after external support as provided by EnDev ends. For this reason, it might be worthwhile to also calculate an outcome figure that does not account for the *Sustainability Factor*. In that way, the impact of this factor on outcome figures could be clarified by easily comparing the *number of people with access to modern energy attributable to EnDev* alongside the same number of people with *sustainable access*. As a minor comment, similar to the *General correction factor* we observe that in some cases the *Sustainability Factor* is mistakenly used to reflect issues that rather relate to any of the other reduction factors.
Double EnDev factor (%)	The situation that households are provided by EnDev with both elements of modern energy, improved cooking and electricity, only occurs in three countries: Ethiopia, Kenya and Peru. The *Double EnDev factor* is intended to heal the inherent inconsistency of EnDev that the provision with each of the two modern energy elements is counted as a complete provision with modern energy: a household provided with cooking is counted completely and a household provided with electricity as well. A household provided with both would therefore be counted twice. This example makes clear that it would be more appropriate to count the two elements as half, so that only households provided both with improved cooking and electricity are counted as fully provided with modern energy. This would, of course, severely affect the beneficiary counting. A minor shortcoming is that the Double EnDev households in two of the three countries (Ethiopia and Kenya) are deducted both from improved cooking and electricity and are therefore not counted at all.

Remarks column	The remarks column in the OCS is supposed to explain the reasons for the choices of the counting formula components outlined in this table. However, in most cases, the remarks column is not used so that the justifications often remain unclear. During our country visits, project staff could often not explain the specific reasons for factor choices. Instead of having only one remarks column for all factors, which has to be filled out for each promoted model of each energy technology and each reporting period, it would be clearer and more functional if there would be one worksheet with the following (exemplary) information:

Energy tech-nology type	Energy technology	Model of energy technology (if applicable)	Type of beneficiary	Factor	Factor value	Period of factor application	Remark	Source (if app-licable)
Electricity	biogas	-	household	general correction factor	0.3	06-2011 - present	*Justification for factor choice*	*e.g. mid-term review (2011)*

Depending on the purpose, EnDev currently reports the two numbers encircled in Figure 1: The *Number of people reached attributable to EnDev* as a non-adjusted figure and the adjusted *Number of people with sustainable access to modern energy attributable to EnDev*. There are two issues that require clarification: First, as noted in the table above under the *EnDev contribution factor*, we see the need that partner country contributions are reflected in the reporting. Second, while the non-adjusted figure refers to "people reached", the adjusted figure lacks an attribute. As decided in a Governing Board meeting in April 2011, EnDev avoids the term "people provided with access" as this creates a wrong impression of EnDev handing out technologies for free. We agree that "providing" is the wrong term, also considering that some TA-focused EnDev interventions cannot claim to provide access as it is the case in Peru, for example. Yet, the most likely alternative, "people facilitated with access", may as well not properly reflect EnDev's ambitions if wrongly formulated.

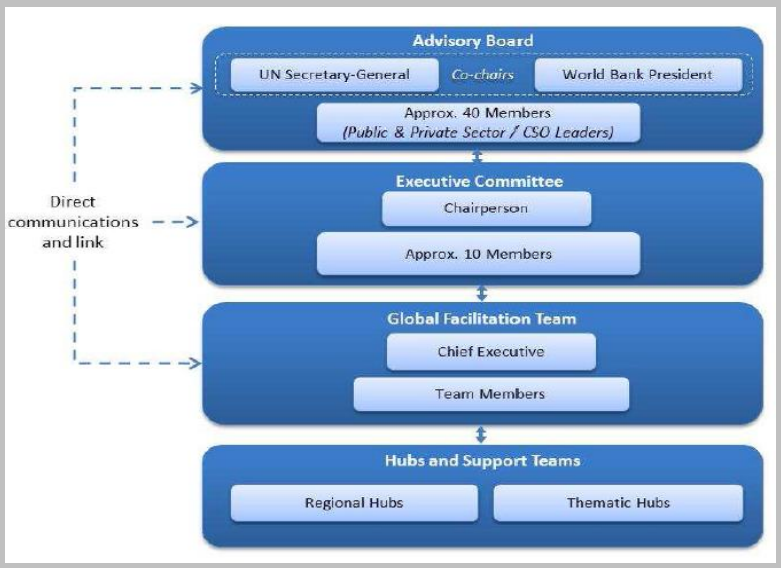
In order to address these two issues, we suggest the following modification in how the adjusted EnDev beneficiary figure is eventually proclaimed: '*In cooperation with partner country governments and other stakeholders, EnDev has facilitated XX million people to sustainably access modern energy. For YY millions of these people, the facilitation of sustainable access can be attributed to EnDev's contribution alone.*'

The second number, the YY million people, refers to the adjusted beneficiary figure if one follows the recommendation made in the table concerning the EnDev contribution factor. This figure will tend to be lower than what EnDev currently reports, since effective contributions of the partner country would not anymore be attributed to EnDev but to the partner country itself. At the same time, local contributions lead to an increase in the first figure, the XX million, which is equal to the adjusted figure *not* accounting for the EnDev contribution factor. This figure will tend to be higher than what EnDev currently reports.

We believe that this slight modification in the counting system would reflect EnDev's idea of doing close-to-the-beneficiary access projects and at the same time acknowledge EnDev's endeavor in triggering local funds and contributing to transformational change on the policy level. It is important to emphasize that this modification would not induce any additional costs beyond potential additional

consultations with partner country representatives in order to determine figures on local contributions. All required numbers are already being collected by the EnDev monitoring system.

H. Factsheets on relevant (global) energy initiatives

Name	Sustainable Energy for All (SE4ALL)
Mission	To ensure that every person on Earth has the opportunities that energy provides
Objectives	Objectives to be achieved by 2030: • Ensure universal access to modern energy services. • Double the global rate of improvement in energy efficiency. • Double the share of renewable energy in the global energy mix.
Strategy	• Create transformative national programs for energy access • Strengthening innovation for bottom-up, distributed energy access so that small power producers and mini-grids can deliver electrification and renewable energy • Promote and share sustainable energy standards and policies across countries • Encourage financial innovation for sustainable energy investment
Funding	A.o. Denmark, Sweden, Germany, Netherlands, United Kingdom
Governance structure	
Organization and management	The 3-person Global Facilitation Team acts as global secretariat, which links the high-level (political) discourse with the African, Asian and Latin-America Hubs (or regional secretariats) and the knowledge Hubs at IRENA and the World Bank. At a country level, participating governments appoint a focal agency to coordinate the SE4ALL agenda in-country. Participating institutions, like the UNDP, the EU and the World Bank provide technical assistance and funding to the government agency to undertake the activities listed below. For example in Nepal, the National Planning Agency is the focal agency and is supported by the UNDP, who pays for a national SE4ALL coordinator.
Activities	• Set-up a national coordination mechanism between government, civil society and the private sector • Conduct a gap-analysis on energy access and energy efficiency needs.

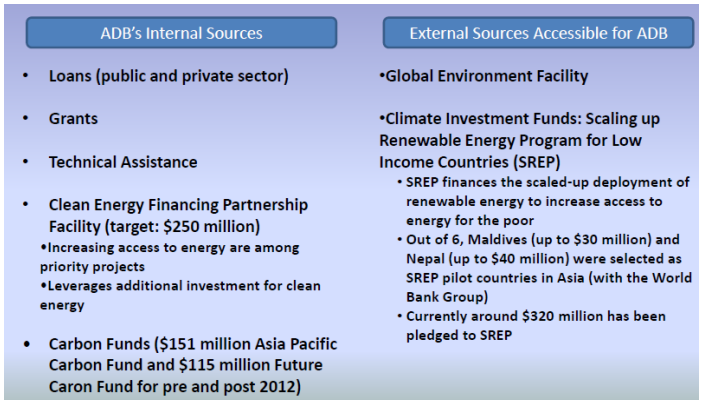
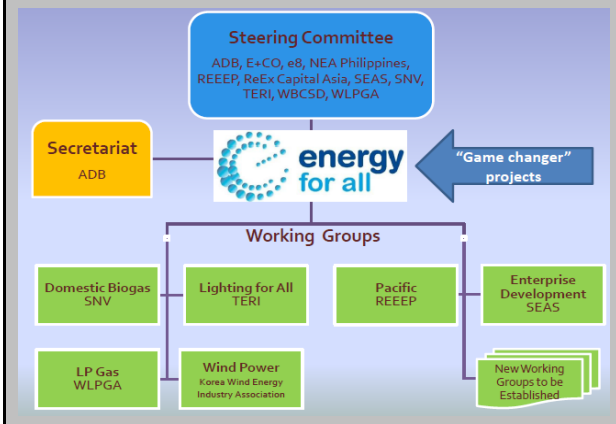
	• Formulate a national action plan • Collect primary energy access and energy efficiency data • Coordinate operational planning amongst national and international stakeholders • Facilitate technical assistance activities, including those related to capacity building, project development, and facilitating access to investment resources • Leverage knowledge management for operational actions • Undertake communications, civic engagements, advocacy • Ensure monitoring, reporting and accountability • Mobilizing partnerships and resources
Sources	Interview with SE4ALL coordinator in Nepal; http://www.se4all.org/wp-content/uploads/2013/09/SE_for_All_-_Framework_for_Action_FINAL.pdf ; http://www.se4all.org/?s=monitoring ; http://mptf.undp.org/factsheet/fund/SEA00

Name	Lighting Africa
Mission	To facilitate the transition from fuel-based lighting to clean, modern lighting
Objective	• Eliminate market barriers so that the private sector can supply high quality, modern, off-grid lighting products to 250 million people in Africa without electricity by 2030.
Strategy	Accelerate the development of off-grid lighting markets by: • Provide market intelligence on market size, consumer preferences and behaviour • Facilitate business to business interactions through conferences, workshops and a dedicated web-platform • Provide targeted business development services and facilitating access to finance for manufacturers, local distributors and other stakeholders • Provide quality assurance through the certification of products
Funding	3 161 474 USD (2011) by • Africa Renewable Energy and Access Grants Program • Public-Private Infrastructure Advisory Facility IFC Sustainable Business Innovator Multi-Donor Trust Fund • Global Environment Facility • Norway
Governance	This initiative is an integral part of the World Bank Group and governed by its Board of Directors.
Organization and management	Lighting Africa is implemented by the World Bank and IFC, through a dedicated program organization within the World Bank's Africa Energy Unit.
Activities	Lighting Africa works with manufacturers, distributors, consumers, financial institutions, development partners, and governments to: • Attract new companies and investors into the market by providing market intelligence demonstrating the viability and growth of the off-grid lighting sector and facilitating access to finance; • Build consumer, and other stakeholders', confidence in the sector by developing a quality assurance framework to counter market spoilage; • Support scale-up and replication of successful business models by providing business development services to partner companies; • Educate potential consumers on the benefits of quality solar lighting products; • Support governments in Sub-Saharan Africa to expand access to modern electricity and lighting services.
Impact	Per June 2012: • Signed 14 manufacturers and distributors of off-grid lighting products • Submitted more than 100 products for quality testing (40 products have passed Lighting Africa's Minimum Quality Standards) • Over 3 years, sold 780,000 lanterns in 15 countries across Africa. • Consumer outreach and awareness activities reached 22 million in Africa. • Africa reduced its greenhouse gas emissions by 78,000 tons in the last three years.
Sources	http://www.lightingglobal.org; http://www.ifc.org/

Name	Energy Sector Management Assistance Program (ESMAP)
Mission	to increase know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth
Objectives	• Energy security • Energy access • Clean energy • Energy efficiency
Strategy	• assist its clients to carry out energy assessments and develop strategies to enhance sector planning, regulation, and governance. • support initiatives to reduce energy poverty by expanding access to modern, safe, affordable and sustainable energy services • assist client countries to integrate climate change mitigation and adaptation options into energy sector planning. ESMAP also supports the scale-up of renewable energy through resource assessments, strategy development, and policy and institutional development
Funding	US$140 million for 2013 - 2016 Donors: Australia, Austria, Denmark, Finland, France, Germany, Iceland, Japan, Lithuania, Norway, Sweden, The Netherlands, United Kingdom, The World Bank
Governance structure	As a formal trust fund of the World Bank, the program is (i) guided by a Consultative Group of representatives from contributing donors (chaired by the Director of the Sustainable Energy Department of the World Bank) and (ii) governed by the rules and regulations of trust funds of the World bank and ultimately by the World Bank's Board of Directors. The Donor Consultative Group annually approves ESMEPS business plan and does not approve individual projects.
Operations and management	The program is implemented by a 25-person strong, dedicated program management unit within the World Bank. Individual initiatives or programs are implemented by operational units, such as the Africa Energy Unit (regarding Lighting Africa and AFREA)
Activities	Amongst others: • Knowledge development and dissemination • Resource mapping, rapid assessments, database development • Project development and pilot testing • Program initiation and funding (e.g. AFREA, Africa Clean Cooking Energy Solutions Initiative, AEI, Small island developing states program) • Energy project assessments and development of strategies to enhance sector planning, regulation, and governance. • Mainstream of energy considerations • Develop and test Results-based financing modalities • Detailed gender assessments in large energy infrastructure, and energy sector reform and pricing
Sources	Program-level interviews http://cdkn.org/project/esmap-africa-clean-cooking-initiative/ http://www.esmap.org/node/2698 http://www.esmap.org/sites/esmap.org/files/PORTFOLIO%20REVIEW_REVISED%20VERSION_EDITED%20FINAL_6.25.2012_Optimized2.pdf

Name	Africa Renewable Energy and Access program (AFREA)
Mission	To help meet energy needs and widen access to energy services in Sub-Saharan African countries in an environmentally responsible way
Objectives	• to expand access to reliable and affordable modern energy services by supporting improved service delivery and the scale-up of innovations in electricity, lighting and cooking. • to support green growth for a reliable, low carbon and sustainable power supply, supporting competitiveness and employment, enabling more businesses and people to realize their economic potential.
Strategy	• Supporting Governments to innovate and scale-up • Developing sustainable markets for basic energy services • Filling the knowledge gaps and building capacities
Funding	Original contribution of US$28.875 from the Kingdom of the Netherlands (through ESMAP) New contributions by the Netherlands and ESMAP is under consideration.
Governance structure	This is an initiative of ESMAP, a Trust Fund of the World Bank Group, and therefore governed by the World Bank's Board of Directors.
Operations and management	AFREA is implemented by dedicated staff within the World Bank's Africa Energy Unit.
Activities	• Enhance the capacity of key institutions—government ministries, rural energy agencies (REAs), power utilities, regulators and power pool operators • Investment grants for pilot projects (e.g. financing local business which distribute lighting products) • Knowledge management / analytical work (e.g. study into which collection of interventions are necessary to successfully connect poor households to modern energy services, or Solar PV for Community Services Toolkit) • Fund other initiatives like Lighting Africa, Africa Electrification Initiative
Sources	Program-level interviews http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRREGTOPENERGY/0,,contentMDK:22500298~menuPK:8913746~pagePK:34004173~piPK:34003707~theSitePK:717306,00.html http://www.esmap.org/sites/esmap.org/files/ESMAP_Africa_Renewable_Energy_and_Access_Program_Optimized.pdf

Name	Africa Electrification Initiative (AEI)
Mission	Create and sustain a living body of practical knowledge and a network of Sub-Saharan African (SSA) practitioners for the design, development, and implementation of rural, peri-urban, and urban on-grid and off-grid electrification programs
Objectives	To mitigate barriers and promote solutions to SSA electrification
Strategy	• Establish, maintain, facilitate and mobilize a growing network of African practitioners, including representatives from rural energy agencies and funds, government ministries, and regulatory agencies and from state, community, and privately owned utilities that collectively make up a network of electrification "thinkers" and "doers" across SSA. • Connect this network through an electronic discussion platform.
Funding and Governance structure	This is an initiative of ESMAP / AFREA, a Trust Fund of the World Bank Group, and therefore governed by the World Bank's Board of Directors.
Operations and management	AEI is implemented by dedicated staff within the World Bank's Africa Energy Unit.
Activities	Conferences, seminars, on-line discussions, trainings, workshops, research, toolkits, website, capacity building, technical assistance, advisory services, economic and social studies
Sources	Program-level interviews http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRREGTOPENERGY/0,,contentMDK:22404873~menuPK:6613283~pagePK:34004173~piPK:34003707~theSitePK:717306,00.html

Name	ADB: Energy for all Initiative
Mission	Provide reliable, adequate, and affordable energy for inclusive growth in a socially, economically, and environmentally sustainable way
Objectives	We aim to provide energy access to 100 million people in Asia and the Pacific Region by 2015
Strategy	ADB internal track • Developing new methodologies and approaches to support ADB's operations departments to identify, design, implement, and monitor access to energy projects • Engaging in policy dialogues with governments • Building capacity and sharing knowledge ADB external track • Promoting exchange of knowledge, ideas, and information • Replicating and scaling up proven approaches • Building partnerships to develop, finance, and implement access to energy projects
Funding	
Governance structure	A Steering committee, including the members shown below, provides oversight. The steering committee does not get involved in individual project approval. 

Operations and management	The initiative is led, through a dedicated secretariat or program organization, by ADB. Partner organizations lead individual working groups (which serve to exchange and develop knowledge).
Activities	• Project development facility • Capacity development • Knowledge development and exchange • Development of financially viable business models for scaling up energy access and linking it with productive use of energy • Expanding the role of small scale entrepreneurs • Work with commercial banks and micro-finance institutions • Establishing of the Energy for all Partnership (which develops and mainstreams approaches for scaling up access to affordable, modern and clean energy)
Sources	Program level interviews http://www.energyforall.info/about/energy-for-all/ http://www.adb.org/sites/default/files/projdocs/2013/40629-012-reg-tcr.pdf http://www.iea.org/media/weowebsite/workshops/weopoverty/09_Mr_Tumiwa.pdf

Name	Global Alliance for Clean Cookstoves (GACC)
Mission	Save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions
Objectives	To foster the adoption of clean cook stoves and fuels in 100 million households by 2020
Strategy	• Enhance demand: develop better technology, provide consumer finance • Strengthen supply: attracting more finance and investment • Foster an enabling environment: engaging national and local stakeholders
Funding	USD 32 million over 5 years More than hundred donors 1. National donors (Canada, Denmark, Finland, Germany, Ireland, Malta, Netherlands, Norway, Spain, Sweden, United Kingdom, United States) 2. Corporate donors (Dow Corning Corporation, Royal Dutch Shell plc., Morgan Stanley Corporation, Baker & McKenzie, Johnson & Johnson, Infosys) 3. Foundations (Barr Foundation, GIZ, Korean Foundation, Osprey Foundation, Shell Foundation, SNV, World Bank, United Nations Foundation, The Nathan & Gretchen Day Fund of the Dallas Foundation, World Lung Foundation, The OPEC Fund for International Development) 4. Individual investors
Governance structure	The UN Foundation Board of Directors holds final legal and fiduciary authority. An Advisory Council guides the Alliance in the execution of its mission. Its 10 members are representatives from the private sector, donors or individual experts from the health, gender, energy, development and business sectors.
Organization and management	The United Nations Foundation is the Secretariat and host for the Global Alliance for Clean Cookstoves. It manages day-to-day operations. The Executive Director reports to the UN Foundation's chief executive officer and serves as a member of the Foundation's senior staff.
Activities	• Attract new financial resources • Help develop and implement standards • Distribution of cook stoves • Research • Organization of forums • Collecting and publishing market information, working with governments to create favorable regulatory and policy environments, and enhancing the clean cooking value-chain through capacity building and improved access to finance

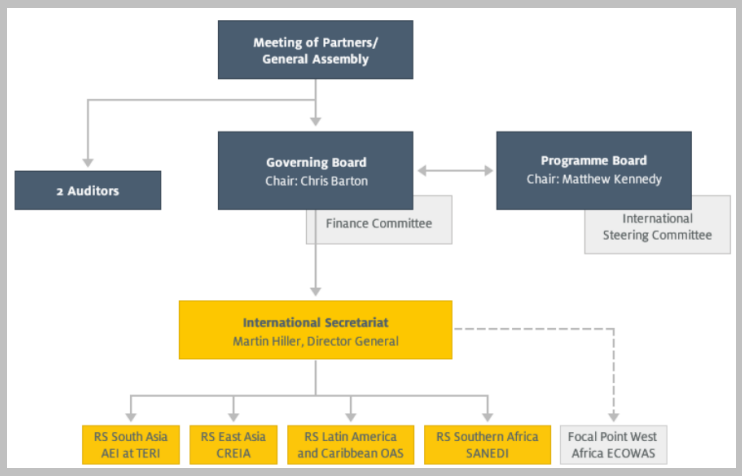
Impact	Results for 2012 Responses (# partners): 246 Stoves distributed: 8.2 million Stoves manufactured: 9.6 million Fuels distributed: 7.5 million kg Fuels produced: 6.4 million kg # countries where partners worked: 98 % manufacturers reporting stove/fuel testing: 84% # countries where testing occurred: 48
Sources	http://www.cleancookstoves.org/resources_files/results-report-2012.pdf http://www.cleancookstoves.org/resources/fact-sheets/alliance-third-year-report-1.pdf

Name	Global Lighting and Energy Access Partnership (Global Leap)
Mission	Transform the global market for affordable, clean, high-quality off-grid lighting by addressing fundamental barriers to market development
Objectives	Facilitate access to improved lighting services for 10 million people by 2017
Strategy	Replacing dirty, fossil-fuel-based light sources such as kerosene lanterns with solar-powered, light-emitting diode (LED) lights.
Funding	US$15 million for 5 years (since 2012) from: • US$10 million Italian Ministry for the Environment, Land and Sea • US$5 million U.S. Department of State
Governance structure	Members: U.S. Department of Energy; Italy's Ministry of Land and Sea; the World Bank; the International Finance Corporation; the UN Foundation; The Energy and Resources Institute; the African Development Bank; the Global Environment Facility; the UN Development Program; Japan's Ministry of Economy, Trade & Industry
Operations and management	IFC is the implementing agency for the partnership
Activities	• Launched two Global LEAP Outstanding Product Awards competitions for off-grid appliances (LED lighting and color televisions) • supported the development of a global standard for solar LED lanterns within the framework of the IEC • The top solar lighting products were recognized in the Lighting Global Outstanding Product Awards, sponsored in part by Global LEAP • Assisted in the establishment of Global Off Grid Lighting (Industry) Association (GOGLA) • Supported the launch of a Lighting Asia • Supported research on developing a quality seal for off-grid lighting
Impact	• Since 2012, through its support to Lighting Africa, helped enable the sale of over 1.4 million quality-assured off-grid lighting systems in Africa, benefitting 6.9 million individuals in more than 20 countries. An estimated 138,600 metric tons of GHG emissions (CO_2e) have been avoided, comparable to taking more than 26,000 cars off the road
Sources	http://www.cleanenergyministerial.org/Our-Work/Initiatives/Energy-Access http://www.clasponline.org/en/RFPsPartnerships/RFPs/ClosedRFPs/2013/RFP1-13

Name	The EU Energy Initiative – Partnership Dialogue Facility (EUEI - PDF)
Mission	Create an enabling environment and platform for government, private sector and donor-funded investments in improved energy access
Objectives	• Support the development of appropriate and cost-effective service delivery models • Improve the enabling environment for private investments in the energy sector • Build institutional capacity for executing agencies, regulators and public-private partnerships
Strategy	• Support developing countries in sub-Saharan Africa and elsewhere to design policies and action-oriented regional, national and sub-national strategies • Bring stakeholders from government, private sector, and civil society together
Funding	Funded by Austria, the European Commission, Finland, France, Germany, the Netherlands and Sweden.
Governance structure	The donors comprise a governing board
Operations and management	The Partnership Dialogue Facility is implemented by GIZ (through a 12-man secretariat). The secretariat is guided by 4 co-chairs (2 from the EU and 2 from African Union). The initiative has two experts seconded to the African Union dealing with policy dialogue and monitoring respectively.
Activities	• Policy and strategy development: country and regional studies, thematic studies, dialogue events • Africa-EU Energy Partnership (AEEP): development of the partnership • Renewable energy cooperation program (RECP): policy development, education and spearhead local financing for frontrunner projects; creation of a center of excellence on renewable energy in Algeria.
Sources	Program-level interview http://www.euei-pdf.org/sites/default/files/files/page_file/EUEI%20PDF_Factsheet_May%202012_EN.pdf

Name	African, Caribbean and Pacific-European Union Energy Facility (ACP-EU EF)
Mission	Increase access to sustainable and affordable energy services for the poor living in rural and peri-urban areas
Objectives	• To contribute to the Millennium Development Goals on poverty alleviation • To contribute to the fight against climate change focusing on renewable energy solutions as well as on energy efficiency measures • To improve governance and framework conditions in the energy sector, in particular those promoting access to energy services, renewable energy and energy efficiency
Strategy	The total Energy Facility commitment of EUR 420 million for the period 2006-2013 has been deployed through four different implementation modalities: • EUR 298 million for two Calls for Proposals for access and improved governance (one in 2006, and another in 2009); • EUR 40 million for the Pooling Mechanism , which finances mature, medium-sized projects outside the scope of the Call for Proposals. It blends grants from the 10th EDF Energy Facility with loans from the EU multilateral and bilateral finance institutions. • EUR 10 million for activities in preparation of the Africa – EU Infrastructure Partnership; • EUR 3.5 million for the Partnership Dialogue Facility, which supports energy governance in ACP countries. • An additional EUR 18.5 million has been allocated for contingencies and needed technical assistance to run the EF, monitor and evaluate the projects.
Funding	2006 – 2009: the 9th European Development Fund (EDF) with EUR220 million 2009 – 2013: the 10th EDF with EUR200 million
Activities	Grants, co-financing, development of sound energy policies and strategies, facilitate the removal of the obstacles to the private sector's involvement and strengthen the capacity of public authorities to manage the energy sector, empowers local authorities and communities, encourages the participation of the private sector
Impact	• More than 15 million people are expected to benefit from the more than 150 projects financed under the Energy Facility
Sources	http://ec.europa.eu/europeaid/where/acp/regional-cooperation/energy/documents/general_presentation_new_ef_en.pdf http://ec.europa.eu/europeaid/where/acp/regional-cooperation/energy/index_en.htm http://ec.europa.eu/europeaid/where/acp/regional-cooperation/energy/documents/brochure_print_en.pdf

Name	Energy+
Mission	To increase access to sustainable energy services and reduce greenhouse gas emissions in developing countries
Objectives	Support efforts of developing countries to scale-up access to renewable energy sources and increased energy efficiency
Strategy	Phase readiness: support development of national low-carbon and energy sector strategies, establish baseline data, and strengthen technical and institutional capacity within the government to support private sector investment. Phase implementation: continue to support institutional capacity-building, the implementation of policy and legal reforms and the establishment of monitoring, reporting and verification systems, promote regulatory regimes that provide incentives for commercial investments, and introduce results-based payment systems. Phase scaling up: Provide payment by results in terms of increased access to energy services by implementation of renewable energy and energy efficiency programs and projects. The payment will be channeled to the developing countries and will be used to finance new renewable energy and energy efficiency programs and projects.
Funding	• US$ 140 million by Norway as results-based payment as part of funding from other donors
Governance structure	Donors are involved in different working groups, though Norway is the interim secretariat.
Operations and management	The international Energy and Climate Initiative Energy+ is a partnership with more than 50 international partners. It is executed by an interim secretariat within the Norwegian Ministry of Foreign Affairs, which overall guidance and coordination. Energy+ by Norway has so far entered into a Energy+ Cooperation with Ethiopia, Kenya, Liberia and Bhutan. An Energy+ cooperation between Nepal and 4-5 donor partners lead by Denmark is prepared. Norwegian Embassy staff, together with local partners and external consultants, support development and implementation of national on-the-ground programs and projects.
Activities	Energy+ has three design principles: • Sectoral approach • Payment by results • Enabling a better environment to leverage private and commercial investments • Energy+ applies a phased implementation with three phases, and supports the developing country financially to carry out the agreed-upon activities of the phases.
Impact	Young initiative; results are expected to be verified by 3-5 years after start
Sources	http://www.regjeringen.no/en/dep/ud/campaigns/energy_plus/engagement/consultations.html?id=729528 http://en.openei.org/wiki/International_Energy_and_Climate_Initiative_%E2%80%93_Energy%2B

Name	Renewable Energy and Energy Efficiency Partnership (REEEP)
Mission	Accelerate the global market for sustainable energy with a primary focus on developing countries and emerging markets
Objectives	• Identify realistic business propositions for clean energy • Define the enabling regulatory and policy conditions needed to make particular propositions succeed
Strategy	• Work with local partners both in the public and private sector • Act as a funder, information provider and connector for scaling up clean energy business models • Annual call for proposal approach
Funding	Current Donors (each devotes grants for certain projects): • Government: Austria, Germany, Norway, Switzerland, United Kingdom • Australian Clean Energy Council (CEC) • Climate and Development Knowledge Network (CDKN) • OPEC Fund for International Development (OFID)
Governance structure	 The Program Board: • one representative from each of the regional secretariat areas, • up to five donor representatives, • at least one representative from an international NGO • two representatives from business and REEEP staff
Operations and management	The program is run by a 9-person strong secretariat or program organization located within UNIDO in Vienna.
Activities	Funding, knowledge storing and sharing, creating networking possibilities, project management, provides policy and regulatory overviews
Impact	Overall, disbursed a total of €18.4 million for more than 180 projects in 58 countries and leveraged €35.1 million in co-funding.
Sources	Program level interviews http://www.reeep.org/our-funding-approach http://www.reeep.org/sites/default/files/Selected%20projects%20-%20REEEP%209th%20funding%20cycle.pdf http://www.reeep.org/government-norway

Name	Energy and Environment Partnership (EEP)
Mission	The Energy and Environment Partnership (EEP) programs support wider access to modern energy services and promote renewable energy and energy efficiency in program countries.
Objectives	• to facilitate the development of innovative ideas, approaches and concepts, into sustainable and bankable investment projects that will bring substantial benefits to the partner countries.
Strategy	• provide grants for developing, piloting and scaling up inclusive business models • provide seed money for the preparatory phases of sustainable energy investments • The Program's approach is to support participation of all stakeholders (public and private sector NGOs and grassroots/ community organizations) with the objective of promoting partnerships between all stakeholders whether they are local, regional and/or international.
Funding	Total funding for the first phase (2010-2013) was 25 million Euros and second phase (2013-2017) 35 million Euros from Governments of Finland (lead donor), Austria, and the United Kingdom
Governance structure	n.a.
Operations and management	The program is managed by the EEP Regional Coordination Office (RCO), which is based in Johannesburg, South Africa. The EEP programs are run from 5 regional offices. • Andean region • Central America • Indonesia • Mekong region • Southern and Eastern Africa
Activities	• The EEP programs fund pre-feasibility and bankable feasibility studies as well as pilot and demonstration activities. • The program is demand driven, and projects are identified on the basis of competitive Calls for Proposals, which are launched 1-2 times per year at the websites of the regional programs. • The programs are open to public and private entities, research institutions, universities, and civil society organizations. • EEP also supports resource surveys, demonstration and piloting activities, policy development, capacity development and the dissemination and exchange of information. • Dissemination and exchange of information through thematic seminars and web pages • The programs run in Central America, the Andean region, Southern and Eastern Africa, Mekong region and Indonesia.
Sources	http://formin.finland.fi/public/download.aspx?ID=58865&GUID=%7BF535F048-BA04-4640-8A6B-BFE0752B5D91%7D http://eepglobal.org https://www.gov.uk/the-energy-and-environment-partnership-eep-programme