Demand-Side Subsidies in the ICS sector: Why Uptake is Harder to Achieve

endev



Key Messages

- Demand-side subsidies alone are insufficient to drive uptake of improved cookstoves (ICS) and need to be complemented by measures addressing supply-side and structural barriers.
- Production infrastructure needs to be treated as part of market-building, not simply as a response to supply shortages.
- Awareness campaigns and community engagement are as important as price reductions to driving ICS uptake.
- Standard RBF approaches are less well suited to fragmented ICS supply chains with thin margins, limited production capacity, and frequent supply disruptions.
- ICS markets require a more flexible instrument mix, such as vouchers and blended demand- and supply-side support, to address affordability while strengthening suppliers.

What the DSS Component did

The EnDev Energy Access through Demand-Side Subsidy (DSS) component promoted ICS in Malawi and Uganda. In Malawi, ICS were promoted alongside solar home systems (SHS). Supported ICS were locally produced clay-based stoves manufactured by Stove Production Groups (SPGs) rather than formal private sector companies. Targeting was done through the Malawi Social Registry, focusing on households classified as poorer and poorest in selected districts. Initial subsidy levels covered 85% of ICS cost (incl. production and distribution cost) for poorer households and 89% for the poorest. As companies reported escalating transport costs, the distribution cost subsidy was increased twice during implementation, bringing total subsidy levels to 92% for poorer households and 94% for the poorest. The DSS was delivered through an RBF model, with companies being reimbursed after independent sales verification. Even with increased subsidies, advance payments, and transport aid, sales fell short due to government mandated price caps below delivery costs and production limits.



In Uganda, ICS were promoted alongside higher-tier cookstoves, solar lanterns and SHS. As in Malawi, DSS was implemented through an RBF model, where companies receive payment after sales are verified. Targeting was done geographically based primarily on demographic data from gazetted refugee hosting districts and poverty status indicators to identify eligible beneficiaries. A 50/50 allocation between refugees and host communities for both interventions was applied. Initial subsidy levels ranged from 42% to 67% of product cost. Operational feedback led to significant adjustments: the absolute ICS subsidy cap was doubled from EUR 2,15 to EUR 4,30, and a 60% relative price cap was introduced to better reflect last-mile delivery costs in remote and refugee-hosting districts. The KoboToolbox eligibility tool was eventually removed for lower-tier ICS sales, and the paper-trail verification requirement was waived in favour of phone verification. The 50/50 refugee-to-host community ratio was relaxed for ICS to accommodate slower adoption rates in refugee settlements.

What we learned

Subsidising the price of a product does not automatically create willingness to pay for it, particularly when the status quo carries no obvious financial cost. The benefits of ICS (reduced smoke exposure, lower fuel consumption, and time savings) are less visible and harder to communicate than the benefits of many other energy products, and accrue primarily to those responsible for cooking, predominantly women. In both Malawi and Uganda, perceived value of these benefits was further weakened by the availability of free firewood.

The ICS market is structurally less well suited to standard RBF delivery models than the SHS market. The standard delivery model was designed around private sector companies with sufficient operational capacity to manage digital data collection, navigate reimbursement cycles, and absorb working capital gaps between sale and payment. In the cookstove sector, these conditions were rarely fully in place. In Malawi and Uganda, ICS companies showed lower levels of professionalisation and digitalisation than their solar counterparts and many struggled to accurately assess or manage the cost of expanding into remote areas.



Supply-chain readiness is a precondition for effective DSS delivery; production capacity, logistics, and company liquidity need to be assessed and addressed before subsidies are deployed. In Malawi, clay-based ICS production is heavily seasonal: output drops sharply during the rainy season as drying and firing processes are weather-dependent. This created stock shortages precisely as community mobilisation and sales campaigns were underway. Regional production imbalances compounded the problem: districts without locally established SPGs depended on inbound supply from other areas, introducing transport costs and lead times that even an increased distribution subsidy could not fully neutralise. In Uganda, the logistics of moving ICS from Kampala to remote northern districts were consistently underestimated, with companies regularly citing transport as a primary constraint.



Sales in both pilots increased markedly where active community engagement preceded the product offer. In Uganda, demonstrations and peer-to-peer outreach were among the most effective demand drivers. In Malawi, radio proved the most cost-effective channel. Messaging that addresses concrete household benefits appears more effective than generic product promotion and must be designed specifically to counter the perception that firewood is free and that ICS offer limited additional value. Beyond this layering communications proved the most effective. While sales agents focused on product awareness, local leaders and organisations built trust, legitimacy, and understanding of eligibility criteria required for uptake.

The effects of previous free distributions and fixed price ceilings distorted market incentives and undermined the commercial viability of providers operating in the same market. In Uganda, baseline data showed that approximately 67% of prior ICS ownership was linked to free or heavily subsidised distribution by NGOs or carbon-credit-funded programmes. This shaped consumer expectations and reduced willingness to pay even small amounts. In Malawi, a price ceiling imposed by the Malawi National Cookstove Committee created a serious constraint: products meeting EnDev quality criteria were more expensive than the official price ceiling, requiring administratively complex workarounds that did not address the underlying pricing tension.

In ICS markets, requirements for tracking sales and eligibility should be proportionate to the value of the transaction. For solar products, registration, serial number recording, payment-plan selection, installation information, and follow-up are usually normal company processes. For lower-value fast-moving products, such as ICS, the same level of (digital) data collection can be disproportionate, meet resistance from customers, and may slow down sales. The Uganda pilot removed the requirement to use the KoboToolbox eligibility tool for lower-tier improved cookstoves, reflecting the need to balance control with usability.

Future DSS approaches for ICS should address the wider conditions required for a functioning market and not rely on price subsidies alone – even in more mature markets. Programme design also needs to consider supply-chain and company capacity, active demand creation through community engagement, and promoting stronger sector coordination to build sustainable markets.

Funded by:

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Ministry of Foreign Affairs of the Netherlands

Norad

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Agency for Development and Cooperation SDC

Coordinated by:

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Netherlands Enterprise Agency

Published by:
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
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As of: 26/10/2026

Photos:
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