Setting and Adjusting Subsidy Levels: Bridging Affordability Gaps Without Distorting Markets



Key Messages

- For demand-side subsidies targeting low-income and underserved groups, subsidy levels must be sufficient to bridge the affordability gap while not distorting markets.
- Investing early in good price and affordability data significantly improves subsidy efficiency.
- Subsidy formulas should balance precision with simplicity, using end-user prices and ability to pay as the starting point.
- Higher subsidy levels require more precise targeting to avoid over-subsidisation and market distortion.
- Subsidy levels should be regularly reviewed and adjusted based on emerging market data rather than automatically following average market prices.

What the DSS Component did

The EnDev Energy Access through Demand-Side Subsidies (DSS) component's objective was to make basic energy access more affordable for low-income and vulnerable groups, often left behind in classic energy access programmes. It covered different product categories and markets with different levels of maturity, data availability, and company capacity. Setting the right subsidy level, thus, required balancing all these aspects.

Subsidy levels were generally guided by the estimated affordability gap between the average market price of the supported product category and the ability to pay of the target group. In more nascent markets like Niger and Liberia, where transaction and price data is limited, the average market price was estimated based on e.g. supplier quotations, estimated distribution costs, anticipated market conditions, and competitive mechanisms such as reverse auctions. In all countries, access to reliable data on the ability to pay for energy products was a challenge and had to be approximated using data on e.g. household income and expenditure patterns collected from a sample of targeted households. Where better datasets were available, such as e.g. the national registry in Malawi, subsidy calculations were more directly linked to the socioeconomic profile of targeted customers.

While some countries set subsidies as a percentage of the product price (e.g. 75%), others introduced a fixed subsidy (e.g. EUR 70) or a combination of both (e.g. max EUR 90 up to 65% of product price). Combining a percentage subsidy with an absolute cap helped limit the risk that companies overinflate prices, while ensuring that only basic energy access was supported.

However, subsidy levels were not static. In all countries they were reviewed and adjusted during implementation in

response to sales progress, changes in market prices, foreign exchange rate fluctuations, inflation, and evidence of certain groups not being reached. Liberia increased its subsidy level early on as expansion and operating costs were higher and the affordability gap larger than expected. In Niger, the subsidy level for displaced customers was increased after uptake among this target group remained low. In Malawi and Uganda, changes in operating costs, company pricing and affordability constraints also required a review of subsidy levels.



What we learned

Estimating the affordability gap as a basis for subsidy level setting is difficult. A household may be able to pay more than it is willing to spend on a product it does not fully trust. A household's current energy expenditure can be a useful proxy for willingness to pay but should be interpreted carefully. A higher-quality product may offer better service and trigger higher willingness to pay, while very poor households may spend little on energy precisely because they cannot afford it. Income-based proxies, such as estimating a reasonable share of household income that could be spent on energy (typically 5%), are also an option, but income data is often incomplete or unreliable for the poorest households.

Reliable product price data is equally important to determine the right subsidy level. In established markets, a products' average market prices can be used for subsidy calculations. The average should account for several products and companies, with attention to the most sold products, and exclude outliers. If market price estimates are too high, there is a risk of over-subsidising companies or customers. If too low, the subsidy may fail to close the affordability gap or disadvantage companies with justifiably higher operating costs. In nascent markets, companies may not have experience with remote, low-income customers, product availability may be limited, and prices may not yet reflect the true cost of delivery. If so, reverse auctions or cost breakdowns can help generate proxy prices. However, there is a risk that companies underestimate costs to win tenders or overstate costs to secure higher subsidies.

The choice between percentage and fixed monetary subsidies has important market effects. A percentage subsidy is easy to understand with a clear link to the product price. But if applied without a cap it can create incentives for companies to inflate prices. A fixed subsidy enables clearer budget control and limits subsidy capture but may favour lower-cost products. There is value in combining both approaches, either by applying a percentage discount up to a fixed absolute cap or comparing the two and applying the lower amount. This reduces the risk of price inflation without imposing a full market price cap, which could interfere with market dynamics and exclude products or companies whose higher prices reflect legitimate differences in quality, payment model, or last-mile delivery cost.

Subsidy levels need to account for payment models, even where programmes do not set separate subsidy levels for each model. For many low-income customers, the relevant affordability question is not whether they can pay the full product price, but whether the deposit and monthly instalments are manageable. Where relevant, PAYGo prices were therefore used as the basis of the subsidy calculation, keeping one subsidy level per product category. Subsidy levels were based on what was considered a reasonable monthly payment over a reasonable PAYGo duration for the intended customer group. This avoided creating separate subsidy levels for each company's repayment plan, which would have made the structure harder to communicate, administer, and monitor.

How does the subsidy level impact PAYGO companies' customer engagement and sustainability?

PAYGo models can create specific incentive risks if subsidy levels are high and market prices are not carefully assessed. Where subsidies cover a large share of the product price, the remaining PAYGo balance may be too small to justify repeated visits to remote or low-income customers for payment collection, customer follow-up, and after-sales service. This can weaken the commercial incentive for companies to maintain the customer relationship after the initial subsidised sale. The risk is higher where the declared PAYGo price does not accurately reflect the real cost of serving the target area, or where repayment plans are longer than companies are realistically likely to manage. Subsidy calculations should therefore assess not only whether the subsidised offer is affordable for customers, but also whether the residual customer payments create a meaningful incentive for companies to continue collection, service, and local presence after disbursement.

Subsidy levels should not be more complex than necessary. Subsidy structures should be kept as simple and transparent as possible. More complex subsidies may be needed where market prices are unreliable, but each additional subsidy level creates additional communication, administration, and monitoring requirements. Complexity may improve precision, but it also increases the risk of errors. Companies need to know which subsidy applies to which customer and product. Customers need to understand the offer. Fund

managers need to process claims correctly. Programme teams need to monitor disbursements and budget use across multiple categories. A subsidy structure that looks precise on paper may become difficult to implement in practice. However, differentiation may be necessary where target groups face different affordability gaps.



The relationship between targeting and subsidy level is central. Broad geographic targeting is appropriate where data is limited, but high, low-precision subsidies increase the risk of supporting customers who do not need that level of assistance and the risk of market distortion. More precise targeting can create the basis for higher subsidies but usually comes with higher implementation costs, e.g. as more sophisticated eligibility verification systems are required. Subsidy levels and targeting mechanisms therefore need to be designed together.

Subsidies should be reviewed regularly. Data on product prices, affordability, operating costs, customer demand, and external factors, such as inflation, exchange-rate fluctuations, fuel prices, or transport disruptions, should be continuously collected and monitored to assess subsidy level appropriateness. Subsidy adjustments should not be automatic and should reflect contextual changes. Adjusting subsidy levels creates communication challenges, e.g. leading to frustration among customers who purchased earlier at a lower subsidy level. Customers may also delay purchases if they expect subsidies to rise. Reducing subsidies over time creates urgency and supports a gradual phase-out but may over-subsidise early customers if targeting is not sufficiently precise.

Overall, setting subsidies is not a once off exercise. It is a complex, iterative process requiring continual data collection, analysis, and adjustments to ensure effectiveness and minimise the risk of market distortion. The component did not identify major signs of market distortion during implementation, but distortion risks remain important as effects may only become visible after the subsidy ends. Future programmes should consider whether follow-up market assessments are needed to understand whether prices, sales patterns, or company behaviour changed after subsidies were reduced or ended.

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