

GPOBA Lessons Learned Series is a forum for discussing and disseminating project insights at the conclusion of projects in supporting the delivery of basic services to the poor. GPOBA is a partnership established in 2003 by the UK (DFID) and the World Bank. Its other donors are the International Finance Corporation (IFC), the Netherlands (DGIS), Australia (DFAT), and Sweden (Sida). For more information visit www.gpoba.org or email us at gpoba@worldbank.org.

LESSONS LEARNED



Electricity Access Rural Expansion Project

DEVELOPMENT CHALLENGE

Ethiopia has a population of about 75 million inhabitants, with 85 percent living in rural areas. The country has one of the lowest electrification rates in sub-Saharan Africa. In 2008, the national electricity coverage was only 7 percent, and access in rural areas only 2 percent. About 44 percent of the population lived below the poverty line of \$1 per day, and the per capita Gross National Income (GNI) was \$150.

In this context, the Government of Ethiopia (GoE) planned to increase access to electricity to 50 percent in five years, under the Universal Access Expansion Program (UAEP), which would be implemented by the state-owned utility Ethiopian Electric Power Corporation (EEPCo). However, despite the government's efforts to expand the hydro-generation capacity and the electricity network, the pace of access to electricity services remained slow. Many poor households living near the grid could not afford to pay the full cost of the connection fee, which ranged from \$50–100. Within the first year of electricity becoming available in a given area, only about 20 percent of customers received metered connections; this was followed by an increase of just 10 percent in subsequent years.

THE PROJECT AND ITS PARTNERS

In 2008, a GPOBA grant of \$8 million was signed to accelerate the pace of connections among grid customers by making the connection charge affordable to the poor population through a credit scheme. The subsidy covered the interest on five-year loans provided by EEPCo to poor households and the distribution of two free Compact Fluorescent Lamps (CFLs) per household to promote energy efficiency and help make energy bills more affordable. The GPOBA grant was linked to the \$170 million IDA-financed Ethiopia Electricity Access Rural Expansion Project Phase II.

The envisaged target of the GPOBA intervention was the connection of 228,571 poor rural households (about 1,340,000 people) to the electricity grid. The target population included residential users in grid-electrified rural towns and villages who had applied for a new metered connection with the five-year loan from EEPCo. Under the GPOBA – funded scheme, the households paid, up front, 20 percent of the \$75 average connection charge, with the balance paid in installments of about \$1 per month.

According to grant design, EEPCo would be reimbursed a subsidy of \$35 per connection after the following conditions were met and independently verified: (i) EEPCo established electricity connections to new households that received a five-year loan and two free CFLs each; and (ii) EEPCo invoiced and collected proceeds for three billing cycles.

RESULTS ACHIEVED

- This project provided 43,000 poor rural households, or about 215,000 people, with formal connections to grid electricity, representing 75 percent of total connections in the entire country from 2011–2013. In addition, 32,000 CFLs were distributed to customers connected under the GPOBA scheme.
- Approximately 14,331 informal connections were observed during the verification. All of these informal hook-ups were connected to the energy meters, allowing energy consumption to be monitored.
- A socio-economic assessment funded by GPOBA suggests that living and working conditions in the households benefiting from electricity connections under the project have generally improved. Women in particular found that access to electricity facilitated household work through better lighting, electric refrigeration, and use of electric stoves for cooking. Some women started to engage in income generating activities such as handcrafting. Better lighting and reduced smoke improved children's ability to study and learn.



Lessons learned

1 Mechanisms for targeting the poor should be simple and effective. In this project, targeting was achieved by combining geographical with self-selection methods. Experience showed that households able to pay the connection fee did so right after the village was electrified; EEPCo therefore financed connection fees for poor households in areas where the grid had been established for at least a year but the household had been unable to afford the connection. The targeting was consistent with the government's policy of providing equity and broad geographical coverage for its rural electrification access program.

2 Sector challenges play a critical role in the implementation of GPOBA grants. A conservative assessment of energy sector challenges, such as limited power supply and the ability of the utility to undertake ambitious access programs, would have helped anticipate the grant's implementation challenges and enabled the setting of more realistic targets. Implementation was affected by two major policy decisions of the government: (i) a moratorium on new connections from 2008–2010 in response to power supply constraints resulting from poor hydrology and delays in the commissioning of dams; and (ii) the requirement for sole source procurement of meters to support the development of local industry, which stopped all access programs from April–December 2012 when the designated local supplier delayed production. The decision regarding procurement was reversed at the end of 2012 as a result of discussions between the World Bank and the government; in early 2013, EEPCo proceeded with procurement of meters from alternative sources and resumed implementation of electricity access programs.

3 Policy decisions had a negative impact. These decisions negatively affected all rural electrification projects in Ethiopia in terms of achievement of development objectives, disbursements, and performance of the overall World Bank energy portfolio of about \$1 billion.

4 Enforcing quality standards is important for safe connections and successful subsidy disbursements. The grant set a very ambitious time frame, aimed at establishing more than 228,000 connections in a three-year period (approximately 75,000 households per year). During this same period, EEPCo was implementing other large energy sector projects and addressing other sector priorities, and therefore employed contractors to install a significant number of connections. In some instances, the Independent Verification Agent (IVA) observed that technical and safety standards were not fully enforced, which affected the subsidy disbursement. The IVA also noted unsatisfactory distribution of CFLs due to EEPCo's limited dispatch and storage capacity. EEPCo started to take measures to address these challenges, providing their local offices with better information on GPOBA program requirements and safe connection practice; however, the actual implementation period was too short to allow for significant improvement.

5 Since poor rural households do not represent a significant revenue stream to the service provider, ensuring sufficient incentives for utilities to reach low income households is crucial in project design. When the moratorium on new connections was lifted, EEPCo started connecting customers who had paid the connection fee up front and in full. While the GPOBA subsidy covered the cost of financing the loan scheme and two CFLs, there was not enough incentive to overcome the administrative burden and cost of processing and monitoring new connections under the GPOBA grant. Further, the fact that these customers would yield lower revenues for EEPCo through the lifeline tariff provided even greater motivation for EEPCo to prioritize connecting the customers who paid up front and paid higher tariffs. Despite these challenges, continued dialogue with EEPCo kept the focus on pro-poor access under the GPOBA grant.

6 Internal wiring could be considered in OBA financing. Internal wiring is usually the responsibility of the households. This increased the cost of access for poor households and impacted the quality of the internal wiring. Financial and institutional arrangements to cover internal wiring could be considered for future electricity access projects under the OBA model.