

Improving Electricity Access for Low-Income Households in Zambia

Development Challenge

Zambia is a lower middle-income country that has made significant socioeconomic progress over the past decade, with economic growth averaging 5.7 percent and 2011 per capita income reaching US\$1,160. Despite robust annual growth, poverty is widespread and is persistently higher among women. Economic growth has had a small impact on overall poverty reduction because much of the benefits of growth have accrued to those who already live above the poverty line. In 2014, during project preparation, 47 percent of people were living in urban and peri-urban areas and only 3 percent in rural areas had access to electricity.

The Project and Its Partners

In 2015, the Global Partnership on Output-Based Aid (GPOBA) approved a US\$4.95 million grant to increase access to grid-based electricity services for 22,000 low-income households and 5,000 micro and small enterprises (MSEs) in urban and peri-urban areas through use of targeted subsidies, with the aim of reaching low-income communities who would otherwise have gone unserved.

Based on the results-based financing (RBF) component of the Increased Access to Electricity Services (IAES) project launched in 2008, the project was implemented by Zambia Electricity Supply Corporation Limited (formerly known as ZESCO) - the national utility - and was co-financed by the World Bank's International Development Association (IDA) and the European Commission. The IAES project had a connection fee subsidy (CFS) program, which ultimately connected 80,000 low-income households to the national grid at a subsidized rate. Funding was disbursed against specific project milestones achieved, linking funding to actual results achieved.

Project Components

OBA subsidies were paid to ZESCO once connections to low-income households and micro and small enterprises to the electricity network were verified. Technical assistance was extended to help ZESCO identify eligibility of MSEs and provide analysis of energy efficiency.

Project Partners

An important way to achieve effective results is to define clear roles for the project stakeholders under the contractual agreement. The project defined the following roles for each project stakeholder:

A grant agreement was signed between ZESCO, the implementing partner, and GPOBA to provide connections to about 22,000 low-income households and 5,000 MSEs in the targeted areas using an output-based subsidy for the connection fee. To verify the connections reported by ZESCO, an independent verification agent (IVA) was hired. The Ministry of Mines Energy and Water Development (MMEWD) provided project oversight for the government of Zambia.

The project was expected to benefit approximately 140,000 people. Subsidies were disbursed based on the result of connecting low-income households and MSEs to the national grid infrastructure through standard household connections and offering the targeted consumers energy-efficient compact fluorescent lights (CFLs). The subsidy was expected to be 86 percent of the cost (\$175) for standard connections and 82 percent of the cost (\$210) for enhanced connections, with beneficiaries contributing the balance of \$28 and \$46.60, respectively. Beneficiaries were identified through geographic targeting of low-income communities.

Results

- The GPOBA project exceeded its target, extending energy access to 32,843 households (about 150 percent of original GPOBA target) and 5,117 micro and small enterprises, benefiting approximately 200,000 residents in low-income townships. Together, the IAES and GPOBA Connection Fee Subsidy programs managed to connect over 113,200 low income households and more than 5,100 MSEs in low income areas to the grid. Therefore, over a five-year period (2012-2016) the CFS program succeeded in providing access to electricity services to more than 600,000 beneficiaries.
- The project successfully mobilized consumer contributions of 18 percent of the total project cost (about \$900,000)
- In addition to increasing electricity access throughout the country by approximately 1.3 percent (an increase to 5 percent in relation to existing electricity access), nearly one in every six newly electrified household started a business.
- The success of IAES CFS in providing access to low-income households has encouraged other cooperating partners to join the program, increasing overall access in Zambia. In addition to the support provided by the Swedish International Development Cooperation Agency (SIDA) through the GPOBA grant facility to scale up the connection fee subsidy program, the European Union also agreed to provide last-mile connectivity in the Lusaka region.

Lessons Learned

1 The success of IAES CFS and GPOBA connection fee subsidy initiatives clearly demonstrated that high connection fees are a major barrier to access to electricity services in Zambia, and that connection subsidies could encourage wider access to electricity and help low-income communities benefit from grid electrification.

2 Shifting the financial and operational risk to a client with strong implementation capacity and providing incentives to connect low-income households yielded positive results. The output-based project reimbursed ZESCO after

independent verification of connections. Thus, ZESCO had strong incentives to connect low-income households to the network. It also had the implementation capacity to do so. ZESCO prefinanced the extension program and was reimbursed after the outputs were independently verified.

3 ZESCO proactively used the short-term gains of the depreciation of the local currency to finance additional network connections. The subsidy reimbursement was set to be paid in US dollars, and the Zambian kwacha depreciated 90 percent against the US dollar over the life of the project. Although ZESCO's costs in kwacha increased because of inflation and imported inputs, ZESCO used the gains generated by the currency depreciation to connect an additional 10,000 households to the network.

4 Valuable consumption data about consumers was captured by tasking the Independent Verification Agent (IVA) to monitor the electricity consumption of connected households. The IVA found the median consumption to be 145 kWh per month for connected households and 40 kWh per month for micro and small enterprises. The data can help inform the design of new projects, help ZESCO plan an electrification strategy that can yield a positive economic return, and help assess the financial viability of connecting low-income townships to the national grid.

5 To support the uptake and roll out of ready boards, ZESCO needs to be more sensitive to the needs of users, find ways to meet their needs for multiple sockets and power points within their homes and businesses, and undertake an awareness campaign. No enhanced connections with ready boards were made under the project. However, site visits suggest that ready boards could be useful because they would save the consumer the expense of using electricians to perform very basic wiring within the premises. Some premises had one bulb and one socket, which a ready board could cover. However, having the ready board with light sockets and power points at a single location connected to the meter may not be ideal for consumers. Such connections need to be extended to other points in the premises.

Part of the World Bank Group, the **Global Partnership on Output-based Aid (GPOBA)** provides innovative financing solutions that link funding to actual results achieved. Our results-based financing (RBF) approaches provide access to basic services like water and sanitation, energy, health and education for low-income communities that might otherwise go unserved. By bringing together public and private sector funders to maximize resources, and designing effective incentives for service providers, we give people the chance for a better life. Visit www.goba.org to learn more.