Spurring Local Socio-Economic Development Through Rural Electrification
Executive Summary
IDEV conducts different types of evaluations to achieve its strategic objectives.
Executive Summary

Introduction and Evaluation Purpose/Scope

This document outlines the key findings of the synthesis of evaluations of completed rural electrification (RE) projects over the period 1999–2013. All of them on-grid, the projects under this review aimed to foster rural development and improve the living conditions of rural populations by supplying electric power to rural areas.

The purpose of this cluster evaluation is: i) to assess the relevance, effectiveness, efficiency, and sustainability of completed RE projects; and ii) to draw key lessons from what worked, and what did not work.

The evaluation can inform the design and implementation of future RE interventions under the African Development Bank’s (AfDB’s) New Deal on Energy for Africa.

Project cluster performance

Development outcomes

Overall performance

Only four of the seven projects in the cluster were rated satisfactory on development outcomes; the remaining three were unsatisfactory.

The project cluster was relevant and effective but delivered inefficiently with results that were unlikely to be sustained.

Project cluster objectives relevant, but weak in some design aspects

- The objectives of the cluster of seven RE projects (the project cluster) aligned well with the stated RE needs and priorities of the five countries.
- The project cluster’s objectives are also aligned with AfDB priorities and strategies, which consider RE as critical to local area development.
- The project cluster’s objectives are consistent with the broader need of rural households for electricity, but the projects fail to specify how poor rural households are to access and use the electricity effectively.
- The projects have clear objectives, with planned outputs relevant for RE. However, the project designs are weak.
- Although four of the five countries concerned have master plans, political interference meant that the selection of localities to electrify was not always based on sound technical and economic grounds.
- Finally, the project designs do not show flexibility in the types of phasing and metering system to use.

Achievement of objectives

- The projects provided the main physical outputs necessary for increasing access of the rural populations to electricity.
With the exception of Tunisia, the remaining six projects failed to connect households to electricity in a timely manner owing in particular to:

- The strategy prioritising geographical coverage that did not cater for low-income households;
- Low incomes meant that some households could not afford the connection fees;
- Limited capacity of the power utilities to meet increased demand for new electricity connections; and
- Compliance with certain aspects of local content policies (mainly concerning the use of locally-manufactured input such as electric poles in Benin and meters in Ethiopia).

Integrated approaches optimized the use of electricity as well as its impacts on rural business development and expansion, and standards of living.

Notwithstanding the positive effects of the RE project cluster, the available electricity was not used optimally (except in Tunisia) mainly because of the limited availability of complementary economic activities and limited capacity of households to pay the electricity tariffs.

Unsatisfactory project efficiency: Although viable economically, the projects suffered from limited financial viability and substantial implementation delays

- All the five projects which were rated on economic performance were satisfactory.
- Only two of the four projects rated on financial performance were satisfactory.
- All seven projects evaluated suffered substantial implementation delays which led to inefficiencies and cost overruns. The consequent project slippages were substantial.

The key factors behind project implementation delays included slow loan ratification, procurement issues, poor performance of contractors, late preparation of tender documents after loan approval, and limited payments of government counterpart funds.

Unsatisfactory sustainability of project benefits

- The project facilities are technically, environmentally and socially viable, but the projects were weak in financial viability, institutional capacity, political and governance environment, ownership, and resilience to external factors.
- The power utilities related to the seven projects rely on government subsidies to continue to operate. This is mainly due to the issues of electricity tariffs and their affordability for rural electricity consumers, especially the poor; insufficient electricity production capacity; and high investment and operating costs.
- The resilience of the projects to exogenous factors was weak, especially in face of price fluctuations of imported fuel and electricity.
- Six of the seven projects, were challenged by weaknesses in planning, managing for results, and designing appropriate policies and regulations. Institutional sustainability was strong in Tunisia but weak in all the other countries.

Project M&E performance

Limited monitoring and evaluation (M&E) systems

- M&E systems were incorporated in project designs but not operationalized or used effectively.
The quality of the M&E data was unsatisfactory.

Although three of the five project completion reports (PCRs) were prepared on time, there was a substantial disconnect (33%) between the PCR ratings and those of IDEV’s Project Evaluation Reports.

Key Issues & Lessons Learnt

Quality of project design

Lesson #1: Lack of critical risk analysis and adequate risk mitigation measures can contribute to substantial implementation delays and inefficiencies.

Quality project design requires, inter alia, adequate risk analysis and mitigation measures for fostering quality implementation. In this regard, the project designs addressed the risks relating to power generation during peak demand, the financial health of power utilities, and political control. However, they were silent on the following risks:

- Reliability of the supply and quality of locally-manufactured project inputs (for example the cases of electrical poles in Benin and electrical meters in Ethiopia).
- Capacity of the project implementation units to deal adequately with issues including the timely preparation of tender documents (in the Gambia and Tunisia, documents were prepared only after loan approval), different donor procurement rules and procedures (Benin, Ethiopia, the Gambia and Tunisia) and government procurement regulations (Ethiopia) in multi-donor financing arrangements (the Gambia).
- Capacity of the contractors to perform their contractual obligations (Benin, the Gambia, Ethiopia and Mozambique).
- Payment of national counterpart funds (Benin).

Lesson #2: Integration between RE and other rural development projects (irrigation, agriculture, water supply, health, education, microcredit, etc.) is critical to better outcomes.

- Integrating with other development initiatives can enhance the productivity of RE and of the downstream and upstream industries.
- The productive impact of RE was highest in Tunisia, where the Government integrated electrification in a holistic rural development plan.

Geographical coverage vs. universal access

Lesson #3: Focusing RE on geographical rather than household coverage can bring electricity closer to rural households but cannot ensure universal access unless issues of affordability to the rural poor are addressed.

In promoting universal access of electricity in rural areas, government electricity strategy matters. In their electrification policy statements and strategies, Governments apply two definitions of access to electricity; one based on “in-house access to modern forms of energy”, and the other on geographical
coverage. As a result, countries can opt to use either definition, or both strategies for RE.

Rural electrification in Tunisia focused on the rural household, but in Benin, Ethiopia, Gambia and Mozambique on geographical coverage. Tunisia succeeded in electrifying almost all its rural households whilst only a minority of rural households in the rest of the four countries had access to and use electricity.

Sustaining project benefits

Lesson #4: Appropriate tariffs and subsidies are critical to the financial viability of electricity utilities and to sustaining RE benefits.

- The main challenges to sustaining the benefits of RE projects are: i) household affordability, ii) electricity generation at times of peak demand, and iii) the financial health of the electricity utilities.
- Connection charges and power prices can prevent low-income rural households from connecting to the power grid and using electricity. To improve household access to electricity supply, subsidies and power price measures are necessary.
- Affordability challenges and operational issues remain factors that hindered or facilitated the result’s achievement and sustainability.
  - On the demand side, most rural households are unable to pay the full cost of connection upfront;
  - On the supply side, the subsidization policy poses a problem for sustaining the rural electrification services, as the government subsidies and electricity tariffs are inadequate to pay for the required RE investments. To finance investments requires a system of tariffs and subsidies that ensures sustainable cost recovery.
- Meeting peak electricity demand was also a challenge.
- All the power utilities in the five countries depend on transfers from national budgets and on government control tariffs. This strategy was not effective, as the utilities regularly show net annual financial losses.
- In addition to imposing unsustainable investment programs on their utilities, Governments prevent them from rising tariffs even when investment and operating costs are rising.

Political support

Lesson #5: Strong political support, including an initial investment subsidy and adequate institutional framework, is necessary to sustain project results.

Political and governance failure are the root causes of financial weaknesses within power utilities.

- In all five countries, the electricity utility companies were government-owned. As a result, the issues of electricity supply and tariffs were highly politicized.
- Government’s political goals may not match those of its power utility regarding the need of providing reliable and quality electricity services.
- The consequence is often insufficient tariff levels, restricted budgets, or even a power system in disrepair that cannot meet the electricity demand of connected customers.

The extent of these problems varies according to the political and governance environments. Tunisia, and to some extent Mozambique and Ethiopia, control tariffs while propping up their power utilities with huge subsidies.
About this Evaluation

This evaluation provides the key findings of the synthesis of seven rural electrification projects financed by the African Development Bank Group in Benin, Ethiopia, The Gambia, Mozambique and Tunisia. It assesses the results of the projects, and why the expected results were achieved or not. The seven projects, approved during the period 1999 to 2006 and completed (excepted one) in 2005–2016, amount to 200 million UA in net loans and grants. These projects aim at improving access to, and use of, reliable electricity by rural populations and entities in order to enhance rural economic and living standards.

The evaluation used a common data collection protocol to gather quantitative and qualitative data on the performance of each project. Several sources and methods of data collection were used, including 1) a desk review of relevant AfDB documentation and literature; 2) interviews with key stakeholders (internal and external to AfDB); 3) field visits to the sites of deliberately selected projects; and, 4) a survey of 500 households per project, purposely selected (including beneficiaries and non-beneficiaries).

This project cluster evaluation is a learning product, focusing on findings and lessons. As such, it does not contain recommendations. Rather than AfDB Management preparing a formal Management Response, a knowledge sharing and capitalization workshop was held with the relevant operations departments of the Bank.