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PUBLIC-PRIVATE PARTNERSHIPS BRIEFS

Djibouti: Solar Rural Electrification



Overview

The Public-Private Infrastructure Advisory Facility (PPIAF) supported a pre-feasibility study to explore potential private sector participation options for the supply of electricity to rural villages in Djibouti using small-scale mini-grids solar schemes. The pre-feasibility analysis found that a build-operate-transfer concession model would not be financially viable due to the small scale. Instead, the study recommended operations and maintenance contracts for 12 mini-grids, with public or donor funding used to cover project capex. Under this approach, the solar equipment would be either provided to or leased to the private sector.

This series showcases how the World Bank Group supports the development and implementation of public-private partnerships. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Hydroelectricity imports from Ethiopia account for 90 percent of Djibouti's power supply. Djibouti relies almost solely on diesel and heavy fuel oil (HFO) to generate its own electricity. As a net diesel and HFO importer with a small and poor economy, the country remains susceptible to the volatility in fuel market prices. Electricity is provided by the state-owned national power company, Electricité de Djibouti (EdD), which distributes electricity mainly to the urban areas.

Only 50 percent of Djibouti's population, or 70,000 homes located in urban areas, has access to electricity. The price of electricity has been the highest in Africa for many years. Despite the recent tariff reductions (of 30 percent in March 2014 and an additional reduction planned in 2016), Djibouti remains one of the African countries with the highest electricity prices.

EdD has 18 generating units running on HFO and six diesel units, with a total installed capacity of about 67 megawatts. The power interconnection between Ethiopia and Djibouti, in operation since 2012, provides a cost effective supply of hydroelectric energy throughout the year. However, power imports are not fixed meaning that Ethiopia can and does curtail supply, particularly during its dry season, which results in daily service disruptions. And during the rainy season, failures of the Ethiopian interconnections network can lead to unplanned interruptions.

The EdD distribution grid is limited to pockets where population is concentrated (Djibouti City, Tadjoura, Obock, Dikhill, and Ali Sabieh). Two thirds of Djibouti's population lives in urban areas, mostly in the capital. The remaining one third in the rural areas are mainly nomadic and pastoral people.

Despite a few solar electrification pilot programs (Ali Addeh and Adailou, which are operated by the Agence Djiboutienne de Développement Social -ADDS, the rural

areas remain largely unelectrified. The lack of electricity translates into lack of access to pumped water, unsafe conditions in public spaces for women, a handicap for the school children to do their homework in the evening, and creates a serious constraint on the economic development of small businesses.

World Bank Group Role

In 2012-13 PPIAF conducted a technical, economic, and financial feasibility analysis for electrification through solar energy of 25 rural villages in Djibouti.

With the feasibility analysis completed, the World Bank Group and other development partners can immediately deploy funds available to address energy access and better manage water scarcity, safety and well-being of vulnerable populations in rural areas of Djibouti.

Outcomes

This study produced a technical, economic, and financial feasibility analysis to assess the most viable and sustainable roll-out option available to electrify each of Djibouti's 25 rural villages targeted.

Work resulted in the preparation of:

- Analyses/assessments including a pre-feasibility analysis, a public-private partnership (PPP) option study, and PPP operations and maintenance contract structuring recommendations.
- Policies or recommendation for legal/regulatory changes including the identification of appropriate contractual and governance arrangements to incentive the private sector operator to maintain the mini-grid, ensure a reliable supply and to extend the mini-grid.
- Plans/strategies including a census update and pilot prioritization plans.
- Workshops/seminars/public meetings including pilot project appraisal and trainings.



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