Evaluation Summary

Country: **Sri Lanka** | Sector: **Energy**

Evaluator: **CRISIL Ltd.**
Date of the evaluation: **February 2024**

Key data on AFD's support

Projet numbers: CLK1011 04L
Amount: EUR 30 million
Disbursement rate: 80%
Signature of financing agreement: 2nd October 2015
Completion date: June 2021
Total duration: 5 years, 9 months

Context

As part of AFD's energy diversification strategy in Sri Lanka the REATDP project was identified to enhance the RE potential of the grid by increasing the total installed capacity of mini-hydro projects through the construction of 132/33 kV grid substation (GSS) and 132kV transmission lines in the central and Sabaragamuwa regions as per the Long-Term Transmission Development Plan (2015-2034)

Actors and operating method

AFD was the lender of the loan for this project which amounting to EUR 30 million while Government of Sri Lanka was borrower and Ceylon Electricity Board (CEB) was the final beneficiary.

CEB was the main implementing entity for the project and some of the key divisions of CEB were:

- CEB's Transmission Project
- Transmission Generation and Planning
- Transmission Design and Environment
- Renewable Energy Procurement
- Transmission Operations and Maintenance division

Objectives

The project aimed at improving the electricity provision in Sri Lanka:

- Increase the grid's renewable energy (RE) absorption capacity (specific outcome)
- Reduce the average cost of production across the network (general outcome)
- Enhance private sector participation in RE production. (specific outcome)
- Enable climate change co-benefits of reducing greenhouse gas (GHG) emissions of the grid (specific impact)

Expected outputs

- Addition of 4 new GSS at Maliboda, Nawalapitiya, Ragala and Wewalwatta with 2 transformers in each of the 4 GSS of 63 MVA capacity each. Adding 252 MVA (8 X 31.5 MVA) transformation capacity to the grid
- Addition of 4 132kV transmission lines
- Replacement of thermal fuel-based generation by RE from this project leading to GHG reduction goals
- Contracting for multiple procurement lots
- Compensation benefits and tree plantation to mitigate the environmental and social risks of the project

Performance assessment

Relevance : Project Alignment with CEB Transmission Master Plan

The construction of the 4 GSS was in alignment with CEB Transmission Master Plan 2013-2022 (TMP), the National Energy Policy of Sri Lanka and other relevant regulations in the power sector. As TMP of 2013 and subsequent TMPs considered the state of previously planned GSSs and accordingly prepared the plans so there were no overlaps, redundancies, etc. in the grid during the implementation of this project.

Effectiveness: Connection of originally planned RE capacities and contributing factors

The project has successfully constructed 4 GSS and TLs along with achieving the connection of 91 MW of RE capacities by 2021, out of the 220 MW originally planned to be connected and plans to connect an additional 57 MW by 2031. One of the main reasons limiting IPPs to connect with the grid was the tariff regime in Sri Lanka which was not cost remunerative and dynamic in nature and was not revised until 2021. The AFD project was not fully able to utilize the potential of RE capacities to be added and achieve the associated climate change mitigation goals as the old tariff regime was not revised until 2021.

There is a strong need for a conducive tax and regulatory regime to be in place for RE based IPPs to effectively tap In their potential. The success of energy projects depends heavily on the tariff systems governing IPPs which should be cost remunerative, and have a dynamic pricing mechanism.

Efficiency: Timeliness, cost, and cost of the project

CEB was able to complete the project within a period of 4 years as compared to 3 years which was initially planned. There was delay mainly in the commissioning phase of the project due to Covid but CEB could efficiently address time delays by taking all necessary risk mitigation steps on time.

In terms of cost efficiency, the project was successful in realizing a cost savings of EUR 7 million on the estimated project cost due to the multiple lots procurement system, participation from small contractors and a financially competitive bidding process

CEB demonstrated organizational efficiency during project implementation through effective co-ordination and control between different divisions, and the instrumental role played by the Project Management Unit (PMU) of REATDP.

Impact: Addition of RE capacities, enhancing private sector participation and reduction in GHG emissions

The project has successfully connected 91 MW of RE and aims at connecting with 57MW of power from 49 IPPs which are currently pending connectivity. The project channelized the positive outcome of revision of the regulatory framework and a flexible tariff structure by facilitating private sector participation.

In terms of climate change mitigation co-benefits, the project is expected to lead to an estimated GHG reduction of 10,923,046 tCO2eq over the project life of 30 years. Additionally, it achieved a cost savings in annual power procurement of LKR 177,594.

Sustainability: Multiple lots system and TA under FEXTE

The PMU of REATDP was able to execute the multiple lots system and ensure sustainability of the system for future projects thanks to the technical assistance provided by EDF International which was critical for tender evaluation, preparation of bidding documents, and engineering design.

Scalability: Future potential of GSS

There is potential of adding one more transformer of 31.5 MVA in each of the 4 GSS will further enable the addition of 27.5 MW of RE per GSS.

Added value of AFD's contribution : Multiple lots and E&S risk assessments

The multiple procurement lots system supported by the TA received under EDF International helped in developing CEB's internal capacities in designing high-voltage (HV) sub-stations and effectively managing the tendering for this project.

AFD's social and environmental guidelines helped the project in terms of identification of E&S risks and implementing mitigation measures through compensations benefits and environmental conservation activities.

Conclusions and lessons learnt

1. **Importance of positive and sustained regulatory and tariff regime:** There was a prolonged period when IPPs could not connect due to misinterpretation of laws and a non-remunerative tariff. Private sector participation for mini-hydro development was positively impacted by the revision of the tariff regime which needs to be cost remunerative and must be continuously updated based on AWPLR (average weighted public lending rate), fixed deposit rates, and foreign exchange rates

2. **Policy advisory on tariff and regulatory system:** AFD should integrate a policy advisory as part of the project to provide support and assistance to the Government on tariff structures and policies regulating the connection of RE based IPPs. The advisory can be designed at three levels of high level Government advocacy on tariff and regulatory systems, implementation guidelines of Standard Power Purchase Agreements (SPPAs), and tariff related guidelines and norms.

3. **Replication of the multiple lots system**: The multiple procurement lots system was critical in achieving cost savings and institutional strengthening of CEB thanks to the TA received under FEXTE and should be replicated in the future for other development projects to ensure cost effectiveness and capacity strengthening of implementing entities.

4. **Integrated systems and processes for institutionalizing multiple procurement lots system:** CEB should develop strong mechanisms for institutionalizing the multiple lots system in the long run through internalized trainings, guidebooks, templates etc.

5. **Focused efforts in improving Environmental and Social (E&S) reporting:** Although detailed environmental and social risk assessment prior to the project and risk mitigation activities were undertaken during the project, there remains some gaps in reporting and tracking E&S risks, and mechanisms for follow-up on all E&S measures, process for giving compensations, accountability of grievance redressal mechanisms, and monitoring of the working conditions of laborers which should be in place.