Private Sector Investment Finance

Ex-Ante Evaluation (for Private Sector Investment Finance)

Private Sector Investment Finance Division,
Private Sector Partnership and Finance Department,
JICA

1. Name of the Project

Country: The Federative Republic of Brazil
Project: Distributed Solar Power Generation System Project
Loan Agreement: March 31, 2020
Borrower: Banco Cooperativo Sicredi S.A.

2. Background and Necessity of the Project

(1) Current State and Issues of the Energy Sector in Brazil

Brazil's maximum power demand in 2019 stood at 91 GW as of August 2019, according to the Brazilian Ministry of Mines and Energy. By 2027, it will amount to 125 GW due to population growth and economic growth, according to the Ten-Year Energy Expansion Plan 2027 of the Brazilian government. As of December 2019, Brazil's electric generating capacity stood at 168 GW, supported by power utilities' large generation sources. This will allow the country to meet growing demand for some time. A look at the power mix in 2019 shows that hydroelectric power accounts for 60.9%, wind power 8.7%, biomass 8.5%, natural gas 7.6%, oil 5.1%, and solar power 1.4%, according to the Brazilian Solar Energy Association. This power mix means relatively small emissions of greenhouse gases. The country's heavy dependence on hydroelectric power generation, however, raises concerns that a drought, for example, will destabilize power supply, in the forms of a power outage or a price spike. Going forward, it will be increasingly necessary for Brazil to stabilize power supply, mainly by diversifying its power mix in light of the impact of climate change over the medium and long term.

Given this background, the Brazilian government aims to increase the share of renewable energy sources other than hydraulic power in the power mix to 28-33% by 2030 under its Nationally Determined Contribution (NDC). To this end, since 2012 the government has been aggressively encouraging not only power utilities to develop major power sources but also individuals and corporate entities (commercial establishments, factories, etc.) to introduce distributed power sources (private power generation from solar power, biomass, wind power, etc.) by establishing a legal infrastructure which promotes power trading between such private generators and power distribution companies.

Meanwhile, in recent years a marked drop in the cost of introducing a solar power

generation system has been promoting the introduction of solar power among other distributed power sources in Brazil. According to the Brazilian Solar Energy Association, the capacity of distributed solar power generation jumped from 0.25 GW in May 2018 to 1.93 GW in January 2020. The Ten-Year Energy Expansion Plan 2027 forecasts that solar power will account for 82% of the distributed power sources. The Brazilian government has developed a plan to meet some 10% of total power demand with the distributed power sources of individuals and corporate entities, as it expects that their total generation capacity will increase up to 21 GW by 2027.

Under these circumstances, Sistema de Credito Cooperativo Sicredi (herein after referred to as "the Sicredi system"; the term "system" here means "alliance"), one of Brazil's largest credit union alliances, has been aggressively implementing a program called Solar Energy Financing (SEF) since January 2016. SEF offers long-term loans for the members of the Sicredi system who want to buy equipment for a distributed solar power generation system. The Sicredi system, which boasts an expansive network in rural areas, plans to roll out SEF across the country. Introducing distributed power sources requires long-term loans for necessary capital investment. In Brazil, however, only a limited number of private financial institutions can afford to offer such loans for individuals and corporate entities. Securing long-term funds that support the geographical and quantitative expansion of SEF is a major challenge for the Sicredi system.

The Project is designed to provide funds necessary for individuals and corporate entities to introduce a distributed solar power generation system and thus assist Brazil in achieving two goals--stabilizing power supply through more diversified energy sources and taking further climate action--by offering loans to the fund-raising arm of the Sicredi system called Banco Cooperativo Sicredi S.A. (hereinafter referred to as "the borrower" or "Sicredi Bank"). Thus, the Project is consistent with the country's energy development policy.

(2) Japanese Government’s and JICA's Policy for the Energy Sector in Brazil and the Priority of the Project

The Project, which is designed to support the introduction of distributed renewable energy sources in Brazil, is consistent with the Support Program to Respond to Climate Change, one of the priority programs JICA implements in the priority area of "urban issues and management of environment and disaster risks" as defined in Japan's Country Development Cooperation Policy for the Federative Republic of Brazil. Energy is identified as one of the priority areas in the Memorandum of Cooperation between Japan and the Federative Republic of Brazil for the Promotion of Investments and Economic Cooperation in the Infrastructure Sector, signed in

October 2016. In light of the above, the Project is consistent with Japan' and JICA's cooperation policies for Brazil.

Additionally, the Sicredi system is committed to promoting the employment of women and developing a favorable working environment and systems for them. Accordingly, it is hoped that the Project will contribute to the "2X Challenge: Financing for Women," one of the commitments made at the G7 Charlevoix Summit in June 2018 with the aim of mobilizing three billion US dollars. (The Project is expected to meet Category 3 criteria of employment.).

3. Project Description

(1) Project Objective

The Project is designed to promote the wider use of distributed solar power generation systems and thereby assist Brazil in stabilizing its energy supply and mitigating the impact of climate change by supporting the financing program that the Sicredi system is rolling out across the country.

(2) Project Site/Target Area

Brazil as a whole

(3) Project Component

The loans provided under the Project will be subleased to the member credit unions of the Sicredi Group via Sicredi Bank, the fund-raising arm of the Group. Each credit union in turn will provide loans for its individual and corporate members who intend to introduce a distributed solar power generation system.

(4) Environmental and Social Consideration/ Cross-Cutting Issues/ Gender Classification

1) Environmental and Social Considerations

① Category: C

② Reason for Categorization: The Project is likely to have a minimal adverse impact on the environment as defined by the JICA Guidelines for Environmental and Social Considerations of April 2010 ("JICA Environmental Guidelines").

③ Other / Monitoring: The Project will adopt only activities classified in Category C in the JICA Environmental Guidelines as its sub-projects.

2) Gender Classification: ■GIS (gender integrated project)

<Specific Activities / Reasons for Classification> Women account for 58% of all employees of the system, which is committed to gender mainstreaming within the organization. Examples of such commitment include a women's committee where

women's working lifestyles are discussed, and a rally of female employees. In 2018, the World Council of Credit Unions granted the system the Athena Award, a prize given to credit unions committed to promoting women's leadership. In light of the above, the system is considered committed to promoting the employment of women and developing a favorable working environment and systems for them.

(5) Other Important Issues

The Project will be co-financed with Citibank, N.A.

4. Targeted Outcomes

(1) Quantitative Effects

The Project will measure such items as the aggregate installed capacity made possible by Solar Energy Financing.

(2) Qualitative Effects

Stable power supply and the mitigation of the climate change impact

5. Lessons Learned from Past Projects

(1) Lessons Learned from Past Projects

In the New and Renewable Energy Development Project for India (“Two-step” ODA loan project), the monitoring system of the executing agency was judged to be inadequate. The executing agency failed to report necessary development indicators. The ex-post evaluation of this particular project states, as one of the lessons learned, that JICA should preferably analyze the executing agency’s monitoring system and its associated capacity and extend support for strengthening its monitoring system as needed.

(2) Lessons for the Project

The appraisal process for the Project has confirmed that the Sicredi system has sufficient monitoring capacity, after checking the workings of both the central monitoring system of the Sicredi system and the member credit unions whose outstanding loans under SEF are among the largest.

6. Evaluation Results

The Project is relevant to one of the development issues facing Brazil and the country's development policy and is consistent with Japanese Governments’ and JICA's development cooperation policies. It will also contribute to Brazil's stable energy supply and global climate action. Accordingly, the Project is expected to help achieve three of the SDGs: Goal 7 (energy), Goal 13 (climate change), and Goal 17 (partnership). Thus, the Project, which takes advantage of the Private-Sector Investment Finance Scheme, is highly relevant.

7. Plan for Future Evaluation

(1) Indicators to be used

As shown in Section 4 (1) above.

(2) Timing

5 years after loan disbursement (subject to change)

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