



1. Project Data

Project ID P153268	Project Name Access to Sustainable Energy Project	
Country Philippines	Practice Area(Lead) Energy & Extractives	
L/C/TF Number(s) TF-A2379,TF-A2497	Closing Date (Original) 31-Jul-2019	Total Project Cost (USD) 17,994,961.25
Bank Approval Date 28-Apr-2016	Closing Date (Actual) 31-Aug-2023	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	23,833,400.00	23,833,400.00
Revised Commitment	17,682,246.10	19,122,046.10
Actual	17,994,961.25	17,994,961.25

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2. Project Objectives and Components

a. Objectives

According to the European Union (EU) Grant Agreement (p.5) and the Global Partnership on Output-Based Aid Program (GPOBA) Grant Agreement (p.5) both dated June 14, 2016, and the Project Appraisal Document (p.16), the project objective is “to increase household access to solar powered electricity within select electric cooperative service areas.”



b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

The project consisted of three components:

A. PV Mainstreaming of Solar Home Systems (SHS): *(Cost estimated at appraisal: US\$15.2 million; actual cost: US\$12.6 million)*

The component was to support the distribution and installation of 40,500 SHS by participating electric cooperatives in their coverage areas through the provision of grants as a capital subsidy. The scheme was to be mainstreamed and sustained through a regulatory framework that was to include monthly service fees paid by the SHS customers to the electric cooperatives.

B. Rural Network Solar (RNS): *(Cost estimated at appraisal: US\$6.9 million; actual cost: US\$4.4 million)*

This component was to support the development of small, grid-connected solar power plants to increase electricity generation by 14 megawatt (MW) and implementation of an RNS program in remote and isolated islands through the provision of grants to selected electric cooperatives and private companies as a capital subsidy.

C. Pre-Paid Metering: *(Cost estimated at appraisal: US\$0.11 million; actual cost: US\$0.0 million)*

This component was to pilot the provision and installation of approximately 1,000 pre-paid electricity meters in the project area to improve the electric cooperatives' commercial efficiency.

Revised components:

The Rural Network Solar component was redesigned because it conflicted with a Department Circular on the Competitive Selection Process issued by the Department of Energy (DOE) in early 2018, which states that electric cooperatives cannot accrue power from themselves without going through a competitive process. While the PAD (p.15) indicates that the electric cooperatives are off-takers in the original design, the DOE perceived the electric cooperatives to be the owner of solar power plants to be built under this component. Key features of the new design included the evolution of the electric cooperatives as developers of solar power plants with the aid of project implementing agency. The financial structure of the project was revised to allow the use of the project grants as capital contribution (accounting about 70 percent of the total project cost). electric cooperatives were to provide land as in-kind contribution (accounting for 30 percent of the total project cost).

The component Pre-Paid Metering pilot was dropped because of the risks related to the customers switching back to post-paid meters after a six-month trial period of the pre-paid meters. The possible



adverse financial and economic impact of this risk on the project resulted in the cancellation of this component.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project cost: Cost of the project was initially estimated to be US\$22.4 million, and the revised amount was US\$17.7 million after modifications. The actual project cost was US\$18.0 million.

Financing: The financing source was the EU and GPOBA, which were to contribute US\$20.24 million and US\$3.00 million, respectively. At closing the project disbursed US\$15.1 million and US\$2.9 million respectively.

Borrower contribution: No borrower's contribution was expected, and none materialized.

Project Restructurings:

The project was restructured five times as the following.

- *First Restructuring (May 11, 2018):* Funds were reallocated to ensure procurement of verification agent for photovoltaic mainstreaming (PVM) bidding. Furthermore, the descriptions of the pre-paid meters were modified in the eligible expenditures table of the EU grant agreement. Closing date of the GPOBA grant agreement was extended from June 30, 2018 to December 31, 2018 and that of the EU grant agreement from July 31, 2019 to October 31, 2019. These short time extensions were required to ensure the timely completion of all activities that were delayed because of the time required by the suppliers of SHS kits to post bank guarantees and modifications applied to the SHS kits to be financed by the GPOBA grant and the time required for the decision to auction a larger scale solar investment or smaller power plans as originally planned.
- *Second Restructuring (January 3, 2020):* A retroactive extension of the EU grant closing date from October 31, 2019 to September 30, 2021 was approved in order to give additional time for the implementation of the project. The project implementation was delayed because of the decision of the decision of the Local Government Unit Guarantee Corporation's (LGUGC) Board of Directors to dissolve the LGUGC by December 31, 2019, which resulted in the change of the implementing agency from LGUGC to the National Power Corporation (NPC).
- *Third restructuring (September 21, 2021):* Due to the Covid-19 pandemic and its associated implementation delays, the closing date was further extended by a year to September 30, 2022. Changes were made in the implementation arrangements that enabled NPC to directly distribute and install SHS, development of grid-connected solar plants and installation of pre-paid meters and implementation of pre-paid metering pilot.
- *Fourth restructuring (November 29, 2022):* The closing date of the grant agreement was retroactively extended from September 30, 2022 to July 31, 2023 in order to accommodate the above mentioned delays in the implementation process to achieve the stated development objectives.
- *Fifth restructuring (July 31, 2023):* A one-month EU grant agreement closing date extension was granted for the completion of four 1 MW solar power plants by August 31, 2023. The works were delayed because of continuous rain in the project sites and late delivery of key equipment and transformers.



Dates:

The project was approved on April 28, 2016 and became effective on June 16, 2016. The Mid-Term Review was conducted on March 15, 2021. The original project closing date was July 31, 2019, but it was extended by approximately 48 months (please see the project restructurings above for the reasons of project closing date extensions). The project closed on August 31, 2023.

3. Relevance of Objectives

Rationale

Alignment with strategy

The project objective is aligned with the World Bank strategy for the Philippines as defined in the Country Partnership Framework (CPF) FY20-23. The project sought to address the development problem of a lack of access to electricity in remote areas of the country serviced by electric cooperatives. The project was to achieve this through capital subsidies for the installation of SHS and the development of solar power plants to increase the availability of electricity supply. The project objective corresponds to the Focus Area 2 – Competitiveness and Economic Opportunity for Job Creation of the CPF and supports the achievement of the Objective 6: Improved efficiency of infrastructure services in selected areas. The project objective also corresponds to Focus Area 3 – Addressing Core Vulnerabilities by Building Peace and Resilience and supports the achievement of the Objective 8: Increased availability of basic services in conflict-affected areas. Through the implementation of solar power, the project objective is also aligned with Objective 10: Increase resilience to natural disasters and climate change of Focus Area 3 of the CPF (p.20).

The Systematic Country Diagnostic highlighted the importance of improving Philippine’s widespread yet unevenly distributed electricity access (ICR, p.17). Further to this, it is also linked to the Bank’s country partnership strategy (CPS FY15-18) aiding the climate change and inclusive growth pillars of the strategy. The PAD also adds that the subsidy schemes also support other pillars related to increasing renewable energy capacity, diversifying generation portfolio and expanding rural electrification.

Country context

The project objective is highly relevant to the country context and its policy goals in the short and medium term. Subsequent policy initiatives by the government including the Philippine Development Plan (2011-2016) and complete rural grid electrification have focused on boosting solar energy across the country. The Access to Sustainable Energy Project (ASEP) not only supports these but also synergizes with schemes such as Philippines Renewable Energy Development in promoting grid electrification across the Philippines. Further to this, the supply of small solar power plants aids the broader goals of the government mentioned above. In this context, there is a good fit between the project objective and the broader strategies of the country’s policymakers in the context of electrification and renewable energy supplies.

Other strategic plans such as the Missionary Electrification Development Plan and the Philippine Energy plan seemed to be aligned with the broader objective of the project to increase household access to solar powered electricity. While this objective will help in accelerating the goals to these plans, it is one component of their bigger vision. The projective objective is also broadly aligned to the national



electrification strategies (targeting universal access by 2030) which aims to enhance electricity access to remote areas and provide reliable supply of electricity in the country.

Previous Bank Experience

The World Bank has had substantive experience in the field of promoting solar power electricity and experience in dealing with electric co-operative areas. Further to this, the Bank assisted rural power project in the Philippines (ICR p.8) dealt with piloting PV mainstreaming in six electric cooperatives in Visayas as a service-for-free model for RE based electrification. This experience and expertise from this successful project were of important value for the ASEP given the similarity in the objectives and outcomes.

Overall, the relevance of the project objectives is rated High.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase household access to solar powered electricity within select electric cooperative service areas.

Rationale

Theory of Change

The project grants were to be used as capital subsidies for the installation of off-grid SHS, build grid-connected small solar power plants, and pilot the installation of 1,000 pre-paid meters in selected electric cooperative areas. The project outputs would have been SHSs installed in 40,500 households, a 14 MW solar power plant capacity created, and 1,000 pre-paid meters installed. The outcomes expected from the project outputs would have been more than 200,000 people having access to electricity on a fee-for-service basis and increased availability of electricity supplied to the other existing customers connected to the electric cooperatives' grids without the need to purchase electricity from independent power producers from long distance. The outcome expected from the installation of the pre-paid meters would have been the increased financial viability of the electric cooperatives ensuring cost recovery for operation and maintenance of the electricity services. Through its focus on fee-for-service and electricity security through the construction of solar power plants in the electric cooperative areas, the project was to ensure the sustainability of the electricity supply services in a more affordable way. Overall, the causal links from the project activities and outputs to the expected outcomes were direct and valid, and the achievement of the project outcomes and the objective could have been attributed to the project's intervention.

Outputs



- **Solar home systems installed:** The project provided capital subsidies for the installation of 40,500 SHS as planned.
- **People provided with new or improved electricity service:** The achievement was 202,500 people as targeted. However, this indicator is calculated by multiplying the number of SHS by an average of five people per household. Therefore, this indicator defines a project output by number of people.
- **Generation capacity energy constructed or rehabilitated:** The project supported the construction of 2 MW solar generation capacity against the revised target of 7 MW. An additional 2.2 MW supported under the project is expected to be commissioned in April 2024 (ICR, p.39). Another 3 MW solar power plant subproject was dropped due to unsuccessful tendering and insufficient time for completion by project closing.
- **Private capital mobilized:** The project was expected to mobilize around US\$14.42 million private capital for the development of solar power plant projects. However, because of the revision of the second component, the electric cooperatives took responsibility for the development of the solar power plants. Therefore, the project did not mobilize any private capital.
- **Villages where PV Mainstreaming is implemented with at least one public consultation held:** The ICR reports that the achievement was 100 percent as targeted. However, it is not clear what this achievement is. The PAD and the ICR do not define this indicator.
- **Pre-paid meters installed under pilot:** The project was to install 1,000 prepaid meters as a pilot. As explained in section 2.d. Components, this activity was dropped because of the risk that customers could revert back to post-paid metering service after a six-month trial period. The achievement was zero.

Outcomes

- **Estimated Greenhouse Gas (GHG) emission reduction compared to a business-as-usual baseline:** Because of the commissioning of the solar power plants, it was estimated that 0.50 metric ton of carbon dioxide equivalent GHG emission would have been avoided over a 20-year generation lifetime. The achievement at 0.07 metric ton of carbon dioxide equivalent of GHG reduction was significantly lower than the target because only 2 MW solar power generation capacity was developed under the project.

The results framework did not include any indicator to capture the outcomes expected from the installation of the SHS or the development of the solar power plants developed under the project and their impacts on rural electrification in the country. To address this shortcoming, the ICR presents two additional indicators:

- **Adoption of the delivery model tested in the PVM component by DOE for a larger scale deployment of SHS:** The electric cooperatives installed the SHS and will continue with their maintenance in return for a fee from the customers. The electricity delivery model is called fee-for-service, and it resembles to electricity service through grid with the exception that the electric cooperatives supply electricity to the customers through SHS in this model. The fee-for-service model is successfully implemented under the project. The ICR (p.18) notes that the electric cooperatives' ownership of the model was strong; subsidy support was successful in reducing the upfront capital cost; and the tariff was set at a level to cover the operation and maintenance costs of the SHS. The installation of pre-paid meters would have been expected to further support the sustainability of the fee-for-service model because they would have ensured a regular cash inflow to the electric cooperatives compared to post-paid metering. Because of the successful implementation of the SHS through the fee-for-service model in these remote project areas, the DOE confirmed that the model



will be scaled up to achieve universal access to electricity in off-grid areas served by the electric cooperatives by 2028 (ICR, p.18).

- **Adoption of the electric cooperative-joint venture (EC-JV) business model tested in the RNS component in future solar PV plants development in electric cooperatives' service areas:** Before the project, because of their capital constraints and lack of capacity to develop power generation projects, the electric cooperatives were electricity off-takers from independent power producers through long-range transmission network, which increased the cost of electricity and energy insecurity. Even though the project's achievement in developing solar power plants was low, it nevertheless demonstrated that the electric cooperatives could develop these power plants if their capital constraints are alleviated, and adequate technical assistance is given. Therefore, the limited, but successful development of solar power plants under the project demonstrated the viability of the solar power plants embedded into distribution networks within the service areas of the electric cooperatives. The DOE is expected to adopt the EC-JV business model to scale up the development of solar power plants in electric cooperative service areas, which would increase energy security, improve the affordability of electricity service, and contribute to the achievement of universal access to electricity by 2028 in rural areas. The success of this model led to discussions between the DOE, the Ministry of Finance, and the World Bank on a potential US\$650 million loan to scale up the business model in other electric cooperatives' service areas (ICR, p.19).

Overall, the project had a mixed success in delivering the project outputs; the project achieved the installation of SHS as targeted but failed significantly short of developing 7 MW solar power generation capacity. However, the successful installation of the SHS under the fee-for-service model and the development of solar power plants by the electric cooperatives are expected to lead to the DOE's adoption of these models to increase access electricity and enhance energy security while improving the affordability of electricity in remote rural areas of the country. The demonstration impact of the project was significantly high. Therefore, the project's efficacy in achieving the project objective to increase household access to solar powered electricity within select electric cooperative service areas is rated Substantial.

Rating

Substantial

OVERALL EFFICACY

Rationale

While the project fell short of achieving the project outputs related to the installation of solar power generation capacity and the pre-paid meters, the project successfully installed the SHS and demonstrated the applicability of the fee-for-service model and the development of solar power plants by the electric cooperatives. The Government of the Philippines is likely to scale up these models to increase access to electricity in remote regions to achieve universal access by 2023. Therefore, the overall efficacy of the project in achieving the project objective is rated Substantial.



Overall Efficacy Rating

Substantial

5. Efficiency

Economic Analysis

According to the ICR (p.21), economic analysis was done for the PVM and RNS components of the project. For the PVM component, the Economic Internal Rate of Return (EIRR) at completion was at 74.3 percent which was higher than the estimate of 33.4 percent at appraisal. Further to this, at completion, the payback period reduced to 1.8 years from 2.1 years at the beginning of the project. Improvement in both these metrics are attributed to lower investment costs on the solar home systems. For the RNS component, the EIRR was 30.9 percent at completion (post accounting for market driven factors) compared to the initial appraisal EIRR of 17.5 percent. The Economic Net Present Value (ENPV) was at 9.94 million (post accounting for market driven factors) compared to the ENPV of 8.4 million at appraisal. However, if the market driven factors are not included, then the ENPV was just 5.87 million which was much less than what was estimated at project appraisal. The ICR attributes it to the increase in diesel cost which is considered a major market driven factor. In terms of absolute economic benefits, the return on investment has been good and efficient along with a favorable investment climate for such projects. Furthermore, reduced investment costs have also ensured favorable net economic returns for the mentioned components in the project.

Operational and Administrative Efficiency

Project implementation was adversely affected by shortcomings in operational and administrative efficiency of the project. Factors such as product supply and quality issues and delays in replacements and logistical challenges contributed to lower achievement (ICR p.27). Lengthy governmental approval process, lack of planning among key stakeholders, unsuccessful bidding for project sites and procedural delays were also key factors in the inefficiencies. Second, the dropping of the Pre-paid Metering (PPM) component due to regulatory issues indicated operational and administrative inefficiencies and lack of due-diligence. Until 2020, the World Bank project team was not aware of any of the risks involved in this regulatory component and this became known only in 2022 even though the Energy Regulatory Commission regulations were published in 2009 and updated in 2012. Besides the PPM component inefficiencies, there were also delays in the oversight of the selection of the new implementing agency and the pandemic related delays as well.

Overall, the project's efficiency in achieving the project objective is rated Modest.

Efficiency Rating

Modest

- a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:



	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	25.00	67.10 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	34.00	70.10 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The objectives were highly relevant to the country context and the World Bank strategy; the relevance of objectives is rated High. While the project achieved the installation of SHS as targeted but failed significantly short of developing 7 MW solar power generation capacity, thereby having a mixed success of achieving desired outputs. However, the project successfully demonstrated the positive impact of the SHS installation along with the rolling out of the fee-for-service delivery model, along with the development of solar power generation plants by the electric cooperatives. Therefore, the efficacy of the project in achieving the project objectives is rated Substantial. There were issues with the implementation of certain components of the project due to administrative, operational, and regulatory issues. Lack of proper planning and dropping of the PPM component further exacerbated some of these problems which is reflected in the Modest rating for project's efficiency in achieving the project objectives. Overall, the project's outcome is rated Moderately Satisfactory.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

The political, social and governance risks are low given the stability of the government and the general amicable environment in the country. There is also a high degree of consensus on sustaining the key project outcomes and also broad relevant goals of achieving universal access by 2028. In terms of technical risks, the ability to operate and maintain SHS and the ability of LGUGC to allocate subsidy awards in a timely manner was an important risk factor. For the SHS, there have been reasonably good efforts taken to ensure that its performance is not compromised in the short and medium run. Efforts have been taken to address this including working with government authorities to devise a good subsidy allocation scheme to facilitate the same. The financial viability of the electric cooperatives to maintain electricity supply service through SHS and the grid to which the newly built solar power plants are connected poses a moderate financial risk. There has not been a financial risk assessment or financial stress test done to understand these risks better. In terms of natural disaster risk, the Philippines is quite prone to natural disasters such as typhoons and earthquakes at times. It is imperative that the impact of such prospective disasters on the functioning of SHS should be understood and proactive steps should be taken to mitigate its effects.



8. Assessment of Bank Performance

a. Quality-at-Entry

Increasing access to electricity in remote areas of the Philippines through the use of renewable energy (decreased the country's dependence on coal-fired generation) in electric cooperatives' service areas was of high strategic importance for the Department of Energy to achieve universal access. The project benefited from the experience gained during the implementation of previous access projects in the country; hence, it had a simple design focusing on the sustainability of the outcomes by demonstrating the successful implementation of fee-for-service model for electricity supply through SHS and the solar power plant development to secure the availability of affordable electricity supply. The technical aspects of the project were adequate because proven technologies were to be used in SHS installation and solar power plant development. The economic analysis concluded at appraisal confirmed the economic viability of the project, but the assumptions used in the cost-benefit analysis were not recorded properly. As the project implementing agency, the LGUGC was assessed to have sufficient capacity to implement the project and comply with the financial management requirements of the World Bank. The project triggered the relevant safeguards policies and necessary actions were taken at appraisal for the implementation of these policies. The monitoring and evaluation (M&E) arrangements were adequate to capture the achievement of the project outputs but there were moderate shortcomings in capturing the achievement of the expected outcomes (see section 9.a. M&E design). All major risks were adequately identified, and mitigation measures were in place but the regulatory risk for the implementation of the third component (i.e., installation of 1,000 pre-paid meters) was not identified. The materialization of this risk during project implementation resulted in the cancellation of this component, and the project could not install 1,000 pre-paid meters. As the ICR (p.33) reports, if this risk had been identified at appraisal, an exemption for the project could have been secured or a proper incentive mechanism for the adoption of the pre-paid meters could have been built into the project design. Additionally, the status of the electric cooperatives was not adequately defined; the project defined the role of the participating electric cooperatives as off-takers of electricity from the solar power plants to be developed under the project, but, according to the DOE, they were defined as the owners of those solar power plants. This resulted in a major revision of the second component, and because of the new financing structure, the scope of the component had to be reduced from 14 MW to 7 MW.

Overall, the quality at entry is rated Moderately Satisfactory.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

a. Quality of supervision

The World Bank project team conducted thirteen regular supervision missions (about twice a year), participated in bi-yearly review missions, and attended Project Steering Committee meetings (ICR, p.34). The project team's supervision of the fiduciary and safeguard aspects of the project was efficient. The overall candor and quality of performance reporting in the Implementation Status and Results Reports and Aide Memoirs was adequate, but some revisions to the project scope and results framework were not



adequately documented or reported, such as the revision of the second component, cancellation of the third component, and revisions of two indicators; the unexpected change of the Task Team Leader and the project implementing agency resulted in insufficient documentation of these changes.

Although the project team was proactive in addressing the challenges with which the project was faced through formal restructurings, the revisions made to the project components were not processed through a formal project restructuring. The project team was late in identifying the regulatory risk related to the piloting of the pre-paid meters; when it was identified in 2022, there was insufficient time to re-design the third component, and it was decided to cancel third component.

When LGUGC (the initial project implementing agency) informed the World Bank in October 2018 that its board of directors decided to dissolve the corporation by the end of 2019, a new project implementing agency selection was started. The Development Bank of Philippines was the front runner in the selection process, but the bank withdrew its application in July 2019 arguing a conflict with its corporate mandate. The project team could not identify this conflict earlier, which would have ruled out the Development Bank of Philippines from the selection process. Because of the lengthy selection process, the project activities had to be suspended by about six months.

Overall, there were significant shortcomings in the proactive identification of opportunities and resolution of threats to the achievement of the development outcomes. However, the project team's focus on the development impact of the project was sufficient in a challenging project implementation environment, which resulted in the achievement of project outputs and outcomes related to increasing access to electricity through successful implementation of the SHS under a fee-for-service model. The project team's supervision was also critical in achieving the successful demonstration of solar power plant development by electric cooperatives that is expected to be replicated in the country although the solar generation capacity built under the project was much lower than the target. The quality of the project team's supervision is rated Moderately Satisfactory.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project objective was clearly defined, and the theory of change was broadly reflected in the results framework. The indicators were relevant, time-bound, measurable and specific, but did not fully capture the outcomes expected from the project's intervention. The results framework did not include indicators two encompass two important project outcomes, i.e., the successful implementation of the fee-for-service electricity delivery model through SHS and the demonstration of the solar power plant development with the involvement of the electric cooperatives. Overall, the results framework included indicators capturing the project outputs. The baselines were identified. The M&E arrangements were sufficiently embedded



institutionally; LGUGC was to verify the data received from the electric cooperatives and hire an independent verification agent if needed.

b. M&E Implementation

The project implementing agencies (first LGUGC and later NPC) regularly collected data and reported them. The project hired an independent agent for the verification of the SHS installation and operation, which constituted a basis for the grant disbursements. This ensured reliability of the data. The project implementing agencies' attention to effective M&E implementation was sufficient. However, although the project was restructured five times, the weaknesses in the results framework in capturing the project outcomes were not addressed. The revision down of the target value for the installed solar generation capacity from 14 MW to 7 MW was processed without a formal project restructuring. The M&E functions and processes are likely to be sustained because the Department of Energy aims at scaling up fee-for-service electricity supply model and solar power plant development by electric cooperatives.

c. M&E Utilization

The project implementing agencies regularly communicated the M&E findings to project stakeholders. The initial M&E findings contributed to an increased effectiveness and efficiency of SHS distribution and installation in later stages of project implementation, resulting in successful completion of this activity and achievement of the related project output and outcomes. The M&E findings also led to a revision of the solar power plant development model and cancellation of the pre-paid meters' installation, but these were processed late in project implementation and not under a formal project restructuring. Although the indicators mostly captured the project outputs, there was a significant attempt to provide evidence of the achievement of the project outcomes and the project's impact on access to electricity and electricity supply availability in remote areas of the country. The M&E findings have contributed to the government's decision to scale up the fee-for-service model and the solar power plant development by electric cooperatives to achieve universal access.

Overall, while there were moderate shortcomings in the results framework in capturing some project outcomes, the M&E system as design, implemented, and utilized was sufficient to assess the achievement of the project objective and test the links in the results chain. The overall M&E quality is rated Substantial.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards



The project was classified as category FI (Financial Intermediary) under Environmental Assessment (OP/BP 4.01) and triggered the Indigenous Peoples (OP/BP 4.11) and Involuntary Resettlement (OP/BP 4.12) safeguard policies.

Environmental Assessment (OP/BP 4.01): The project was classified as Category FI because the first project implementing agency, i.e., LGUGC, was to act as a financial intermediary in the project. There are certain quality standards and certifications, as mandated by the ASEP, that needed to be met to get access to such financing. Support provided to electric cooperatives and the government authorities also impinged upon proposal battery storage and disposal systems. Government regulations also demanded environmental assessments with regards to the storage, transport, treatment, and disposal of toxic and hazardous waste. Therefore, an Environmental and Social Safeguards Framework (ESSF) was adapted from the Philippines Renewable Energy Development Project and disclosed on the World Bank's InfoShop on February 19, 2016. The project's compliance with this safeguard policy has been satisfactory through to project closing.

Indigenous Peoples (OP/BP 4.11): The project triggered this safeguard policy because there was a considerable chance for indigenous people to be present in the project area. The project was to use the ESSF to screen its impact on the indigenous peoples. The NPC employed a dedicated safeguards focal person. The project prepared Indigenous Peoples Plans for every subproject. The subprojects were screened adequately to assess their impact on these peoples. The ICR (p.32) reports that the project had no pending requirement under this safeguard policy.

Involuntary Resettlement (OP/BP 4.12): The project triggered this safeguard policy because there could be limited land acquisition required for the construction of solar power plants. However, the requirement of no involuntary resettlement was one of the criteria for subproject eligibility. Therefore, the project was expected to result in no involuntary resettlement. Nevertheless, the ESSF included provisions to address involuntary resettlement if needed. There was a possibility that ten informal dwellings would have been relocated because they were constructed on an electric cooperative's property. The subproject was redesigned to avoid these informal dwellings. The project closed without any involuntary resettlement.

b. Fiduciary Compliance

Financial Management

The ICR reports that the fiduciary compliance was moderately satisfactory. The risk rating was increased from low to substantial during the course of the project "due to the risk that funds may not be fully used because of delays in the implementation, possible uncompleted works, and unpaid billings towards the project closing date" (ICR, p.32).

In addition, the fiduciary standards and maintenance of accounting records at LGUGC and NPC were considered adequate during implementation with certain operational issues. There were also other products by LGUGC that had to be produced including the semestral interim financial reports, annual audited project financial statements and annual externally audited entity financial statements which have further bolstered the financial record keeping for the project. The LGUGC and the NPC submitted Interim Financial Reports and Physical Progress Reports semiannually that included variance analysis of project funds and total costs incurred under management fees (ICR p.31). The external auditors' opinion of the



project’s financial statements was unqualified. There were no known issues of corruption or misuse of funds associated with the project. The project team confirmed that all project funds were accounted for at project closing.

Procurement

At appraisal, procurement guidelines, methods and procedures were laid out along with sufficient risk assessment. Procurement compliance was considered to be moderately satisfactory due to the extended delays that were caused by the complex coordination mechanisms within the government and its agencies. This led to delayed decision making and slow procurement process. The procurement specialist hired by the project implementing agency has insufficient experience in procurement. As the ICR (p.33) reports, most of the procurement packages could not be finalized according to the schedule because of delayed and inaccurate procurement advice. The procurement was also adversely affected during the selection of the project implementing agency following the dissolution of LGUGC by its board of directors in December 2019.

c. Unintended impacts (Positive or Negative)

None.

d. Other

None.

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

Simplification of project design based on past experience can lead to a more effective approach. According to the project documents, simplification of project design is one of the important lessons to be learnt from the project. The efforts to mainstream photovoltaic were further bolstered by an approved regulatory framework with a simple yet effective design—fixed monthly tariffs to customers, sustainable revenue flow to service providers for operational support and a



design focus on the provision of services which ranges from efficient appliances to radios and fans—which is derived from global experience through the World Bank. Some of these elements of project design are visible in the ASEP project but they are component specific and does not necessarily diffuse into all areas of the project. As such, greater simplification of project design based on past WBG experiences could be a very key asset for the project per se.

Implementation of a fee-for-service delivery model for household solar systems can be critical in achieving off-grid electrification outcomes and ensuring sustainability. The successful demonstration of the fee-for-service delivery model by electric cooperatives showed that the sustainability of the solar home systems will be more likely compared to households covering the initial capital cost and maintenance cost of the systems. The mainstreaming of the fee-for-service delivery model within Philippines is evidenced by the adoption of this model for the full off-grid electrification in remote areas by the host government. According to the ICR (page 37), the model ensured strong ownership from the electric cooperatives, adequate subsidies and tariffs along with pre-installed PPMs to ensure periodic cash flow. It also incentivized the ECs to use SHS for their off-grid electrification projects with provision of grants for initial capital costs and maintenance of SHS in key areas. These interventions helped to ensure successful mainstreaming of the fee-for service delivery model.

Insufficient assessment of legal frameworks can adversely affect the achievement of project results. The pre-paid metering component of the project was dropped due to regulatory and ownership constraints. The possibility that the households could switch back to post-paid meters after a six-month trial of the pre-paid meters (allowed by law) was not identified at appraisal. The installation of the pre-paid meters was expected to contribute to the financial viability of the electric cooperatives that would have expected to provide them funds to adequately operate and maintain the on-grid and off-grid electricity infrastructure.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is fairly detailed and candid in presenting the project's shortcomings in design and implementation. The report is internally consistent and follows the majority of the Bank guidance. The narrative is sufficiently evaluative rather than descriptive. The quality of evidence and analysis is reasonably fair. The ICR provides adequate evidence to support the achievement of project results. Economic analysis is clearly presented. While the ICR's focus is on the achievement of project outputs, because of the limitations of the results framework, the report makes a genuine attempt to provide evidence for the achievement of the project outcomes related to the successful demonstration of the fee-for-service electricity supply model and the development of solar power plants by electric cooperatives. The section on lessons could have included more factual details related to the issues pertaining to partial implementation of the RNS component and the dropping of the PPM component.



a. Quality of ICR Rating
Substantial