



## 1. Project Data

<b>Project ID</b> P112893	<b>Project Name</b> NP: Kabeli Transmission Project
<b>Country</b> Nepal	<b>Practice Area(Lead)</b> Energy & Extractives

<b>L/C/TF Number(s)</b> IDA-49320,IDA-H6760	<b>Closing Date (Original)</b> 30-Jun-2015	<b>Total Project Cost (USD)</b> 17,274,997.95
<b>Bank Approval Date</b> 10-May-2011	<b>Closing Date (Actual)</b> 31-Dec-2016	

	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	38,000,000.00	0.00
Revised Commitment	20,725,856.06	0.00
Actual	17,274,997.95	0.00

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## 2. Project Objectives and Components

### a. Objectives

The objectives of the project are (i) to support the addition of transmission capacity to the Recipient's integrated power system; and (ii) to provide access to electricity and cooking fuel to communities in the area of the Kabeli 132 kV transmission line (Financing Agreement, p 5).

In light of the Independent Evaluation Group (IEG) Guidelines, this ICR Review assesses the outcomes of the project in the efficacy section, since the stated objectives primarily measure the output level performance.



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

No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

**Component 1: Kabeli Corridor 132 kV Transmission Line** (Appraisal cost: US\$31.56 million, Actual cost: US\$15.97 million)

This component included construction of a 90-kilometer 132 kV double circuit transmission line from the Damak substation to the Kabeli substation including an erection of approximately 300 towers and four substations. The International Development Association (IDA) funded three substations (Amarpur, Phidim, Ilam) and the Government of Nepal funded one substation (Damak). The component also provided technical assistance for facilitating project implementation (PAD, p.7 and p. 32, and Financing Agreement, p. 14).

**Component 2: Community-based Rural Electrification-Grid Extension** (Appraisal cost: US\$5.71 million, Actual cost: US\$7.44 million)

This component included a grid extension to the unelectrified communities located within 2.5 kilometers of either side of the constructed transmission line under Component 1. Activities were to finance and construct 11 kV distribution lines, 400/230 V distribution lines, distribution transformers, and associated engineering services and technical assistance (PAD, p. 7 and p. 33).

**Component 3: Rural Enhanced Energy Services** (Appraisal cost: US\$2.32 million, Actual cost: US\$2.20 million)

This component included off-grid rural electrification of communities where the grid extension was not a feasible option. Activities included off-grid electrification through a pilot village micro-hydro scheme which would be connected to the grid; solar systems for home and institutions (schools and health posts); and improved cooking fuel through biogas applications. (PAD, p. 7 and p. 34)

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

**Project Cost:** The estimated project cost was US\$47.68 million. The actual cost was US\$29.61 million (ICR, p. 18).



**Financing:** The appraisal estimated that the IDA would finance a US\$27.4 million loan and a US\$10.60 million grant. The actual disbursement of the loan and grant was US\$19.97 million and US\$5.6 million respectively (ICR, p. 18).

**Borrower Contribution:** The Borrower was expected to contribute US\$7.75 million at appraisal. The actual contribution was US\$6.2 million (ICR, p. 18).

**Dates:** The project was approved on May 10, 2011 and became effective on September 21, 2011. The project underwent two restructurings. The first restructuring was made on March 2015 to extend the project period by 18 months to compensate for the implementation delay. The second restructuring occurred in April 2016 to reallocate US\$3.08 million from Component 1 to Component 2 to fill the expected financing gap of Component 2. (ICR, p. 3 and p. 20). The project was closed on December 31, 2016.

### 3. Relevance of Objectives & Design

#### a. Relevance of Objectives

**Alignment with strategy:** The objective of the project was tightly aligned with the bank's strategy. The Country Partnership Strategy (FY14-18) focused on increasing economic growth and competitiveness for which measures included an increase in electricity supply (CPS, p. 15). The Country Partnership Framework (FY19-23) also set out the priority on private sector-led jobs and growth for which improved power generation capacity and access to electricity were two of the main outcomes (CPF, p. 14).

**Country context:** Improving power supply has been the major issue of the development in Nepal, which was fully consistent with the objective of the project. At appraisal, 88 percent of the country's total primary energy demand was dependent on traditional forms of energy and over half of the population did not have access to reliable sources of electricity (PAD, p. 1). A national energy crisis in 2008 exacerbated the situation, prompting the Government of Nepal to formulate the Electricity Crisis Management Action Plan. The Plan put a priority on the development of the Kabeli Transmission Corridor to facilitate the development of new hydropower projects, which required an increase in transmission capacity to evacuate their power to the integrated national power system. (PAD, para. 27). At closing, the Government of Nepal maintained its focus on increasing electricity supply and its priority on the Kabeli Corridor. A Government's concept paper on National Energy Crisis Mitigation and Electricity Development Decade published in 2016 committed to advancing the Kabeli Corridor development (ICR, p. 12). Throughout the project life, the project objective was aligned with the country and sector context.

**Previous sector experience:** The project was realistically designed based on experience and lessons learned from an earlier project, Power Development Project (P043311). In this project, the Bank supported to develop Nepal's hydropower potential to help meet electricity demand; to improve access of rural areas to electricity services; and to promote private participation in the power sector. The Bank identified several



lessons: acceleration of procurement through advance procurement, contract management by assigning an Owner’s Engineer so that an Implementing Agency would be able to monitor a project effectively; multi-sectoral capacity in the project team; and benefit sharing of the power development around the project area such as an offering of an additional rural electrification program. All the lessons were incorporated into the project design (PAD, p. 7-8. ICR, para. 14).

In summary, the objectives of the project were fully aligned with the Bank's strategy and the country context. Relevance is rated high.

**Rating**  
High

**b. Relevance of Design**

The theory of change of the project was based on two main activities: one aimed at increasing transmission capacity and another aimed at improving access to electricity and energy sources along the Kabeli corridor. For the former objective, the project would construct a 90 km 132 kV transmission line, evacuating power that would be generated by the Independent Power Producers (IPPs). An underlying assumption was that IPPs would construct the hydropower stations and would use the transmission line. For the latter objective, the project would support on- and off-grid rural electrification as well as improved cooking fuels. Another assumption was that people in the benefitted areas would change their behavior to substitute a new source of energy for their conventional energy.

The design entailed three shortcomings. First, the outcome was inadequately stated. As the ICR itself indicates, the outcome should be the evacuation of power instead of an increase in transmission capacity. Second, the outcome indicator of the second objective - to provide access to electricity and cooking fuel to communities in the area of the Kabeli 132 kV transmission line – did not capture both on-grid and off-grid electrification. Third, Component 3 had inconsistent input-intermediate outcome relationship. The intermediate outcome was the increased percentage of off-grid rural electrification schemes. But the inputs in Component 3 included not only electrification schemes but also an improved source of energy such as improved cooking fuel. To that extent, the results framework did not reflect appropriate causality and attribution.

**Rating**  
Modest

**4. Achievement of Objectives (Efficacy)**



## **Objective 1**

### **Objective**

To support the addition of transmission capacity to the Recipient's integrated power system.

### **Rationale**

#### **Theory of Change:**

Theory of Change of Project Development Objective (PDO) 1 was to increase transmission capacity up to 150 MW along the Kabeli corridor, by constructing the electricity transmission line. The ICR pointed out that the outcome should have been evacuation of power from hydropower plants along the corridor (ICR, para. 26). This was because increased transmission capacity would be operationalized if power from IPPs would flow on the transmission line.

IEG agrees with the statement, but notes that the causality of the outcome could be further strengthened. The project constructs the transmission line to evacuate power to the integrated power system, which eventually flows into those in demand for power. In other words, the shortage of power compelled the Government to incrementally increase the power supply through IPPs and transmission line. Hence, the outcome is restated as "to meet the demand of IPPs along the Kabeli corridor for evacuating their aggregate power generation to electricity consumers, by increasing the transmission capacity." IEG evaluates efficacy of PDO 1 with the restated outcome since the objective in the ICR was not properly articulated.

### **Outputs**

- Stringing of the transmission line was completed up to 64 km out of 90 km (71 percent).
- Tower foundation was completed for 252 points out of 258 (98 percent).
- Tower installation was completed for 235 points out of 258 (91 percent).
- Construction of four substations which included one substation financed by the Government of Nepal was fully completed.
- Through these activities, the transmission line equipped with 200 MW transmission capacity was completed (ICR, para. 26).
- The task team leader (TTL) informed IEG that the likelihood of completing the remaining works was high. 90 percent of supplies for civil works were procured by the Bank's funding before its closure. The contractor is the same as for the Bank's project and has completed almost all civil works. The remaining financing, approximately US\$ 1.5 million, should be financed by the implementing agency, but this is not a substantial budget for the Nepal Electricity Authority (NEA) given the current financial statement. Also, there has been intense pressure from the IPPs to complete the stringing, prompting NEA to act on the remaining section.



## Outcome

The project was able to evacuate 71 MW of power generated by the IPPs along the Kabeli corridor against the target of 150 MW. The ICR indicated the likelihood of power generation by the IPPs amounting to a combined generation capacity of 173 MW by 2022 (ICR, para. 43), which would flow into the transmission line under the project. However, IEG considered this as optimistic. Table 9 of the ICR presented the latest estimate of the generation capacity in each hydropower project. This table showed that four projects, with a combined capacity of 102 MW (58.4 percent of total capacity of the Kabeli corridor), are still under construction. The average capacity of the remaining hydropower projects is 2.5 times larger than that of the completed projects (10.1 MW for the completed projects, 25.5 MW for the on-going projects on average). The large volume of the remaining works and the comparatively larger projects may involve more complex and unforeseeable conditions, such as environmental and social considerations, contract management issues, and natural and geological constraints. IEG was not provided adequate and convincing evidence that these remaining works would be completed as estimated by the ICR. Hence, the likelihood of meeting the demand of IPPs is still in question.

At a higher level of the outcome to respond to the shortage of power supply, it was recognized, according to the IEG's query to the task team and IEG's own analysis, that the project would have contributed to reducing the national power demand and supply gap. The national power demand has continued to grow at a rate of 7 percent from 2009 to 2018, and the demand and supply gap had also widened at a rate of 8 percent until the project was completed in 2016. After the completion of the project, it contributed to 3.7 percent of the national demand, raising its proportion to 4.7 percent in 2018 in accordance with the increasing power generation around the Kabeli corridor (52 MW in 2016 and 71 MW in 2018). As a result, the demand and supply gap has started to decrease after 2016. Given the limitations of data, it is not feasible to directly attribute the project outcome to specific power demand centers at the national level, but it was at least accurate to say that the project had responded to the shortages in power supply.

## Counterfactual

In the absence of the project, the existing IPPs would not be able to evacuate power. Unavailability of the transmission line might have caused a problem in the Power Purchase Agreements (PPAs) with the IPPs, which would eventually require the Government to pay a compensation or any other required fees specified in the PPAs. Also, in light of consumers who were the eventual beneficiaries, they were benefitted by reducing the cost of power purchases. Consumers, in the absence of the project, would have purchased more expensive power such as diesel generation.

Given the partial achievement of the outcome, the efficacy of achieving the project's first objective is rated modest.

**Rating**  
Modest



## **Objective 2**

### **Objective**

To provide access to electricity and cooking fuel to communities in the area of the Kabeli 132 kV transmission line.

### **Rationale**

#### **Theory of Change:**

The theory of change for PDO 2 was to extend the grid and off-grid rural electrification as well as to provide improved cooking fuels, which would lead to improving energy access around the Kabeli 132 kV transmission line. The instruments for electrification were 11 kV and 400 Volt distribution lines, micro-hydro, toilet attached biogas applications for cooking fuel, solar systems for both home and institutions such as schools and hospitals. The ICR made a valid argument that the project outcome indicator only measured off-grid energy services and did not measure the on-grid electricity (ICR, para. 26). IEG agreed with this, however, it also considered that PDO 2 should have been expressed in terms of outcome level performance. Improving access to electricity and providing cooking fuel were the outputs directly derived from the project interventions. Given the causal links to a higher objective, this PDO should have been restated as “the improvement of a quality of life in rural areas along the Kabeli corridor through improved on-grid and off-grid electricity access and energy sources.” Like PDO 1, the IEG assessed the efficacy of PDO 2 with the restated outcome.

### **Outputs**

- No households were connected to the grid through 11 kV distribution lines in Panchthar and Ilan Districts against the target of 5,200 households.
- The planned 250 kW micro-hydro schemes were not implemented. Instead, the project constructed the 11 kV mini grid based on the close consultation with the communities who preferred the grid connection. This change was not reflected in the results framework. For a reference, the anticipated electrification by micro-hydro schemes, which intended to install the capacity of 250 kW to 2,000 households in 14 communities in Ilam and Panchthar districts, was partially met by the introduction of the 11 kV mini-grid which served 8 communities in Taplejung District.
- The project successfully installed 230 toilet attached biogas applications for cooking fuel against the target of 200 households.
- 369 solar home systems were installed, exceeding the target of 300 installations.
- Institutional level solar power systems were introduced to 16 institutions (14 schools and 1 health post). Exceeded the target of 15 institutions.

### **Outcome**



For the on-grid electricity services, the achievement of the project was negligible as the 11 kV distribution lines were dropped from the project. The distribution lines are currently covered by another IDA financed project, Grid Solar Energy Efficiency Project (P146344), yet no tangible evidence is observed about the likelihood of completing the lines. For the off-grid electricity services, the project accomplished the connection of 47 communities against the target of 25 communities. For improved energy sources, the project installed the toilet attached biogas for cooking fuels, which exceeded the target. As a result, the project partially achieved the improvement of the quality of life in the project area.

### Counterfactual

In the absence of the project, the local communities had to continue to use the traditional energy such as diesel and wood. This would have exacerbated the pressure on household incomes as they would have had to pay the higher cost for energy use while emitting more carbon dioxide. It was likely that those in the 47 communities were benefitted by the project in terms of improving their quality of life.

In summary, considering the partial achievements for on- and off-grid electrification and provision of improved energy sources, the project's efficacy in achieving PDO 2 was rated modest.

### Rating

Modest

## 5. Efficiency

**Economic analysis:** The project calculated both Economic Rate of Return (ERR) and Financial Rate of Return (FRR) at the appraisal and ICR stages. The original estimate of ERR for the transmission line was 38 percent, while the ICR's ERR at closing was 60 percent. Both analyses used the same assumptions with some variations. The economic cost, which excluded any customs, duties, and taxes, was calculated based on the latest available construction cost for (i) the transmission line and substations (appraisal: US\$ 30.3 million, ICR: US\$15.47 million for the completed and remaining transmission line works); (ii) hydropower plants (appraisal: US\$ 141 million for 5 hydropower projects with 73.5 MW, ICR: US\$ 341 million for 11 hydropower projects with 173 MW); and (iii) O&M cost (1.5 percent for the transmission line and 5.0 percent for the hydropower plants, applicable to both appraisal and ICR). The benefit was calculated based on the avoided diesel generation cost by the introduction of the hydropower plants (appraisal: US\$0.20 per kWh, ICR: US\$0.25 per kWh). Both applied a 10 percent discount rate and a 25-year project life. The significant increase in ERR was explained by (i) the benefits from the increased number of hydropower plants offset the increase in the cost of hydropower construction; (ii) the decrease in the construction cost of transmission line; and (iii) the increased avoided cost.



Concerning the FRR, the appraisal estimated equity IRR at 22.2 percent with an assumption that debt and equity would be financed by 70:30. The ICR highlighted that the review should apply FRR instead of equity IRR. Equity IRR is used when the private sector is involved in the operation of the infrastructure, but there is no plan for the private sector to participate and operate this transmission line. In fact, the source of financing to the NEA was 100 percent equity. The ICR recalculated FRR at the time of appraisal as it was not given in the PAD, which showed 12.96 percent, while the FRR at closing was 26.0 percent. The increase of the financial return was attributed primarily to the increased volume of power selling.

**Aspects of design and implementation:** At the project’s design stage, the critical assumption of the project was the estimated total generation capacity. The estimated capacity was 73.5 MW by 2015 and 140 MW by 2023 (PAD, para 20 and 61), which were proved to be more or less valid. The actual installed capacity was 52 MW at project closing in 2016, rising to 71 MW in 2018, and the total installed capacity is now expected to be 173 MW by 2022 (ICR, para. 43). In spite of the realistic estimation, the project design had some shortfalls in design and implementation. As being described above, the theory of change and the results framework involved deficiencies in their outcome setting and indicators. The complicated institutional arrangements required close coordination among the NEA, Community Rural Electrification Department (CRED), and Alternative Energy Promotion Center (AEPC), which resulted in prolonged decision-making, slow project implementation, and extension of the project. During the project implementation, it should be noted that the project made a laudable effort to better manage external relations. NEA assigned Public Relation Officers for better communication among the Project Management Unit, contractors, and the local community. The Implementing Agencies (IAs) managed the communities’ expectations by replacing the idea of installing micro hydro schemes with mini-grid extension. Nevertheless, the overall project implementation was very slow because of the issues around the scant inter-agency coordination. It was a fact that the earthquake in April 2015 suspended the project at least for five months, however most of the inefficiency was derived from the internal issues in the IAs’ project management and the Bank’s supervision.

In summary, although the project sufficiently achieved economic efficiency, it faced many difficulties in efficiently managing the project. Overall, the project’s efficiency 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	✓	38.00	66.19 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	60.00	53.93 <input type="checkbox"/> Not Applicable



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

## 6. Outcome

The **outcome** of the project is rated **moderately unsatisfactory**, concurring the ICR's overall outcome rating. **Relevance of the objective is high** because the project highly aligned with the country context and bank strategy. Nepal has faced with the shortage of electricity supply, hindering sustainable economic and social development. The Government of Nepal has pursued a stable electricity supply through the development of the Integrated Nepal Power System. The Bank's CPS and CPF consistently prioritized the development of the energy sector to bolster private sector development and economic growth. **Relevance of design is modest** given the major shortcomings in theory of change and the results framework. **Efficacy is modest** since two PDOs did not achieve, or only partially achieved, the intended results. **Efficiency is modest** given the limited design and implementation efficiency.

### a. Outcome Rating

Moderately Unsatisfactory

## 7. Rationale for Risk to Development Outcome Rating

**Technical and Operational Risks:** There would be relatively limited risk in completing the remaining works of the transmission line. After the project closure in December 2016, there was substantial progress by the NEA – the completion rate of tower foundation works increased by 17 percentage points, that of tower installation increased by 26 percentage points, and that of stringing increased by 30 percentage points. As stated in the outputs of PDO 1, the progress has been significant and no major risks are observed. On the other hand, the off-grid electricity activity may face technical difficulty, particularly on the operation and maintenance of the 11 kV mini-grid (ICR, para. 36).

**Financial Risks:** The financial risk would not be substantial. A concern may arise in the remaining works of the transmission line, but the additional explanation by the task team was convincing that NEA had already procured goods and equipment for the transmission line by using Bank funds before its closure, which accounted for 90 percent of the contract. Given the progress of the works, the financial risks would be minimal. For Component 3, the AEPC acquired the supplementary budget (US\$300,000) for the procurement and installation of the control system of the mini-grid, and no procurement and construction remained. But it is still uncertain how the AEPC procures the budget to conduct training on O&M of the mini-grid and to provide remaining social safeguard packages such as non-formal education program and resettlement and rehabilitation assistance to residential structures (ICR, para. 30).

**Institutional Risks:** The PMU of Component 1 still needs to complete the remaining works. The institutional risk of Component 1 is low. Also, since the major works under Component 3 were completed and the installed



equipment and facilities are maintained by the communities, which have been performing well so far, there is no emerging issue on institutional risk.

**a. Risk to Development Outcome Rating**

Modest

## **8. Assessment of Bank Performance**

**a. Quality-at-Entry**

The project properly estimated the capacity and power generated by the hydropower plants around the project area, which was the critical assumption for successful implementation of the project. Also, the quality of the project design incorporated sector experience at the Bank. The lessons were properly applied in project design, for example, advance procurement with International Competitiveness Bidding, contract management by assigning the Owner's Engineer, and benefit-sharing of power supply for both the on- and off-grid areas. However, the institutional arrangements should have been more streamlined since it required a lot of communication and coordination between different institutions. Since the earlier project showed that the institutions were weak in coordinating and bringing coordinated decisions, the institutional arrangement could have been organized in a different way.

**Quality-at-Entry Rating**

Moderately Unsatisfactory

**b. Quality of supervision**

The Bank supervised the project through the periodic review missions. Although this contributed to advancing various elements of the project (project implementation, fiduciary management, procurement actions, and safeguards compliance), the Bank should have instituted stronger supervision mechanisms. The ICR reiterated the institutional complexities of the Government and IAs such as lengthy and complex decision-making, limited communication within and across the IAs, and cumbersome land valuation and compensation processes. More qualified and robust supervision such as regular meetings between the Bank and the IAs and Mid-Term Reviews could have unpacked such complexities or at least established an action plan with due dates. Also, the project did not improve the results framework despite a flaw in the articulation of its objective and a change of the activities under Component 3.

**Quality of Supervision Rating**

Moderately Unsatisfactory



## **Overall Bank Performance Rating**

Moderately Unsatisfactory

## **9. Assessment of Borrower Performance**

### **a. Government Performance**

The Government showed strong commitment through policy and budgetary actions. Despite the slow progress of the project, the Government continuously prioritized the project in its policy paper throughout the project period. The Government also disbursed 80 percent (US\$7.75 million) of the estimated governmental expenditure, which accounted for over 16 percent of the total project cost. However, the Government lacked active engagement in directing the IAs to expedite the project. Inter-governmental issues such as access to forestry areas managed by the Department of Forest could have been resolved by the government's active involvement. Also, the Government should have played a role in resolving the land valuation and compensation issue in an earlier stage of the project, which was the cause of the delay at the initial stage of the project.

### **Government Performance Rating**

Moderately Unsatisfactory

### **b. Implementing Agency Performance**

The NEA, an Implementing Agency for Component 1 and 2, showed the ownership of Component 1 but was more limited in executing Component 2. Given the strategic importance of Component 1, the NEA was actively engaged in the project through procurement, safeguards implementation, and project execution. But for Component 2, the IAs' engagement was partial, which were seen in a frequent turnover of staff and shortage in the number of PMU staff. Also, the lack of interdepartmental coordination between PMU and CRED hampered the achievement of outputs of Component 2.

In contrast, the AEPC committed to executing the activities of Component 3. AEPC's involvement was demonstrated by limited staff turnover, a streamlined decision-making process, and proactive problem-solving. With this high level of ownership, Component 3 successfully achieved its outputs.

On balance, taking into consideration the relative performance of NEA and AEPC, the IAs' performance is rated moderately unsatisfactory.

### **Implementing Agency Performance Rating**

Moderately Unsatisfactory

### **Overall Borrower Performance Rating**



Moderately Unsatisfactory

## 10. M&E Design, Implementation, & Utilization

### a. M&E Design

The PAD designed the M&E to require periodic implementation progress reports to be prepared by the NEA and the AEPC, which would describe project progress, scheduling, contract status, institutional components, and implementation of the Environmental Management Plan and Resettlement Action Plan. In addition, the annual reports prepared by the respective IAs would be the resources for the Bank to monitor project progress. However, such instruments did not address issues embedded in project design, particularly the results framework. As the ICR described, the project encountered the discrepancies in the outcome indicators. As a result, the ineffective results framework led to the difficulties in measuring the project output and outcome in the course of project implementation.

### b. M&E Implementation

M&E implementation was conducted through the Implementation Status and Results Report (ISR) missions. The data collected during the ISR missions were used for updating the regular reports. However, the project could have established more robust M&E mechanisms. Such regular updates, in comparison to the detailed evaluation such as the Mid-Term Review, did not contribute to deciding the restructuring of the project nor addressing the critical issues promptly. Also, the project could have improved the results framework during its implementation as mentioned earlier. The timely update of the results framework would have enabled project stakeholders to become more engaged with achieving the outcome.

### c. M&E Utilization

There was limited utilization of M&E as well as the results framework. The project had updated data through the ISR missions, but it was not substantial enough to operationalize the M&E system. A more regular M&E utilization could have expedited project implementation.

### M&E Quality Rating

Modest

## 11. Other Issues

### a. Safeguards



The project was classified as Environmental Category B and triggered the Bank's safeguard policies on Environmental Assessment (OP/BP 4.01), Indigenous Peoples (OP/BP 4.10), Involuntary Resettlement (OP/BP 4.12), and Forests (OP/BP 4.36).

The project IAs prepared the Environment Management Plan and implemented a set of mitigation measures including the compensatory plantation of 97,800 trees, training on Non-Timber Forest Product and biodiversity conservation and awareness program, and protection of towers from landslide/flood risks. In contrast, social safeguards were partially implemented. 55 percent of compensation for the Project Affected Families (PAFs) was paid, the breakdown of which was 82 percent (188 PAFs out of 228 PAFs) for tower pads; 50 percent (41 PAFs out of 82 PAFs) for structures; and 50 percent (673 PAFs out of 1,339 PAFs) for easement fee of Rights-of-Way (RoW). Some other social safeguards were also not completed yet, which included reconstruction of community schools that had been located within RoW of the transmission line (expected to be completed by end of December 2018); and the resettlement and rehabilitation assistance to residential structures' owners and non-titleholders. The project IAs have committed to completing the pending safeguard activities through an external monitor hired by the project.

## **b. Fiduciary Compliance**

### **Financial Management**

There were issues in financial management until mid-2014 according to the ICR. The issues identified in the ICR were the late submission of audit reports with limited quality in accounting, asset management, and internal controls; the deficiencies in outstanding advances/inter-unit balances; lack of verification of project assets; and AEPC's capacity to develop an expenditure report at the district level. However, such issue was resolved after late 2014 through the regular monitoring by the Bank.

### **Procurement**

According to the ICR, the project complied the Bank's procurement procedures. The Bank's regular procurement clinics contributed to building the IA's procurement capacity. However, the project experienced delays in procurement primarily caused by slow decision making by the IAs.

## **c. Unintended impacts (Positive or Negative)**

The project's interventions may have contributed to the communities' self-help due to the need for additional water and for mobilizing own financial resources to meet water requirements of biogas plants (ICR, para. 47), although there was no comparison or counterfactual case to validate these.



**d. Other**

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**12. Ratings**

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Unsatisfactory	Moderately Unsatisfactory	---
Risk to Development Outcome	High	Modest	Technical, financial and institutional risks appear low in light of the construction progress to date.
Bank Performance	Moderately Unsatisfactory	Moderately Unsatisfactory	---
Borrower Performance	Moderately Unsatisfactory	Moderately Unsatisfactory	---
Quality of ICR		Substantial	---

**Note**

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006. The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

**13. Lessons**

**1. A robust monitoring and evaluating system is essential in a country where the Implementing Agency's capacity is limited.** The project was built upon lessons informed by an earlier project in the country and equipped with some preventive measures to avoid project implementation failure. Nevertheless, the project was not implemented efficiently and effectively. One of the reasons was the lack of a robust monitoring and evaluation system. Due to the complexities and limited capacity of the IAs, there were a lot of points where the project was stalled. A robust M&E system, such as regular meetings with a periodic review of indicators and action plans, could have been a platform for project stakeholders to gather and change its project management approach.

**2. Adaptability of the project is the key to mobilizing citizen engagement.** Unlike Component 1 and Component 2, Component 3 showed significant success in the project. One of the reasons could be the close dialogue with the beneficiaries and adaptation of the project. The beneficiaries continuously requested grid



electricity instead of micro-hydro schemes. This was not anticipated in the project design, but close dialogue with citizens discovered the genuine needs of the beneficiaries and the project effectively adjusted its activities by applying a standard design of the 11 kV mini-grid to squeeze in the time for construction. Even though this alternative solution was not able to meet the output indicator, the satisfaction level of the beneficiaries was sufficient as the project efficiently managed the citizen's expectations.

**3. A periodic review of the Theory of Change and the results framework is critical to bring stakeholders in an appropriate direction.** A lack of causal relationship in theory of change of the project negatively influenced project implementation. It could be assumed that the lack of on-grid rural electrification indicator under Component 2 resulted in dropping this activity, which was transferred to another project. An effective theory of change and valid results framework could have clarified the causal relationships of the project, and the consequences might have been different.

#### **14. Assessment Recommended?**

No

#### **15. Comments on Quality of ICR**

The ICR was clearly written and provided a candid review of the project's performance. The critical review of the project's design, implementation, and supervision was to the point, based on adequate evidence, and provided compelling explanations. Although the ICR should have strictly assessed the efficacy section by differentiating outcome and outputs, it largely complied with the OPCS guidelines for ICR preparation.

##### **a. Quality of ICR Rating**

Substantial