Report Number: ICRR0021787

1. Project Data

Project ID	Project Name
P114971	PY Energy Sector Strengthening Project
Country	**Practice Area(Lead)**
Paraguay	Energy & Extractives

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IBRD-79940	31-Dec-2015	90,105,042.62
Bank Approval Date	**Closing Date (Actual)**	
30-Nov-2010	31-Oct-2018	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	100,000,000.00	0.00
Revised Commitment	100,000,000.00	0.00
Actual	90,105,042.62	0.00

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2. Project Objectives and Components

a. Objectives

According to both the Loan Agreement (LA, p.5) and the Project Appraisal Document (PAD, p.5) the project development objectives were "to increase the quantity and quality of the provision of electricity services by the Borrower, while improving the Borrower's performance," where the Borrower was defined as *Administración Nacional de Electricidad* (ANDE), the national power utility of Paraguay.

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

Did the Board approve the revised objectives/key associated outcome targets?
No

c. Will a split evaluation be undertaken?
No

d. Components
The project had three components with multiple sub-components.

1. Modernizing the Borrower's Distribution Management System and Installing an Advanced Metering System for Large Consumers *(Appraisal cost: US$25.00 million of which US$20.00 was to be financed by the International Bank for Reconstruction and Development (IBRD); Actual cost is not reported.)*
1.1. Installation of a state-of-the-art integrated distribution management system integrating technical and commercial operations consisting of Supervisory Control and Data Acquisition (SCADA), Energy Management System (EMS), Demand Management System (DMS), Operations Management System (OMS) and Integrated Electrical Distribution Management System (SGIDE- *Sistema de Gestión Integral de Distribución Eléctrica*).
1.2. Installation of advanced remote metering systems for medium voltage customers.

2. Improving the Performance of the Transmission Network *(Appraisal cost: US$96.25 million of which US$77.00 million was to be financed by the IBRD; Actual cost is not reported.)*
2.1. Construction of two new substations below the existing transmission lines in the Guajayvi and Minga Porá districts.
2.2. Extension and transformation capacity expansion of ten existing substations.
2.3. Installation of reactive compensation at the Guarambaré substation.

3. Strengthening Paraguay's Electricity Sector and the Borrower's Institutional Capacity *(Appraisal cost: US$3.50 million of which 2.75 million was to be financed by the IBRD; Actual cost is not reported.)*
3.1. Improvement of the performance of the electricity sector through: (i) the carrying out of an independent institutional assessment of the legal framework, the organizational structure and operational procedures of the electric sector in Paraguay; (ii) the development of an action plan; and (iii) the implementation of the key priorities established in the action plan.
3.2. Institutional strengthening of the Borrower's capacity in investment and project planning and implementation through: (i) strategic advice to the Borrower's Presidency on managerial decisions; (ii) consultancy in the implementation of a distribution management system; (iii) strengthening of the Borrower's environmental and social unit; and (iv) strengthening of the Borrower's financial and asset management practices, its internal auditing unit, and provision of external auditors for the Project.

Revised Components
At the first restructuring (Restructuring Paper dated December 10, 2015, p.8-10), subcomponent 1.1 was revised to undertake only the SCADA and EMS portion of the original activities with an estimated cost of US$4.94 million, because of limited time left—even with an extension of the project closing date by 22 months—to complete all components of the distribution management system. New activities were added to be financed by the balance from the original budget from subcomponent 1.1: supply and installation of fiber optic network, active communication equipment, wireless meshed network, and digital carrier equipment.

Furthermore, due to the bids received lower than the estimated budget and the savings incurred accordingly in the purchase of transformers, new investments were added to subcomponent 2.2: supply of transformers for additional seven substations, supply of a mobile substation, purchase of a truck to transport power transformers. Finally, the project team and ANDE agreed to replace the three studies originally planned under subcomponent 3.1 by technical assistance to analyze ANDE's organizational structure and human resources, and the first activity under subcomponent 3.2, i.e., strategic advice to the Paraguayan Presidency on managerial decisions, was deleted.

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

Project Cost: The total project cost was originally estimated at US$125.00 million including physical and price contingencies and a front-end fee of US$0.25 million to be covered by the IBRD loan. In December 2018, the project closed with a total cost of US$98.89 million*. The actual cost was 79.1 percent of the cost estimated at appraisal including physical and price contingencies.

* Annex 3, Project Cost by Component gives the IBRD loan allocations which were revised in the first restructuring (please see the paragraph below about restructurings) rather than the project components' actual costs. They are not reported in other parts of the ICR, either. Therefore, the actual project cost is taken from the Data Sheet of the ICR (p.2).

Financing: At appraisal, the IBRD loan was estimated at US$100.00 million. At project closing, the IBRD financing stood at US$90.11 million. The refund by ANDE of the unused portion of the loan in the amount of US$3.47 million was pending at project closing. ANDE refunded the outstanding amount in June 2019, and all funds were accounted for as of June 28,2019.

Borrower contribution: At appraisal, the borrower contribution was estimated at US$25.00 million, of which US$19.25 million was for the project activities to improve the performance of the transmission network under component 2. Due to the lower actual cost of the transformers, the borrower contribution at project closing stood at US$8.78 million. It should be noted that due to the long delay in project implementation start, ANDE used its own funds to finance the upgrading of original ten substations, which was not accounted as borrower's contribution.

Restructurings and Dates: There were two project restructurings:

- **First Restructuring (December 10, 2015):** The project became effective in February 2012, more than 14 months after the World Bank Board Approval, on account of the lengthy internal process in Paraguay, which required approval of a specific law in the congress. After effectiveness, the project implementation was slow until national elections in April 2013. As a result, at this restructuring, the project closing date was extended by 22 months from December 31,2015 to October 31, 2017. Furthermore, as explained in the previous section under Revised Components, subcomponents 1.1, 2.2, 3.1, and 3.2 were amended. This also led to the reallocation of IBRD funds among components, which was possible due to savings accrued in component 2 because of bids received with amounts lower than the estimated budget (Revised allocations are given in the table at the end of this section). Lastly, in order to better monitor and evaluate the outcomes of the project, some irrelevant indicators and indicators that measured the overall system parameters in the country rather than the project related investments were deleted, and others were replaced or their methodologies were revised. Project development objective (PDO) indicators measuring distribution losses, unscheduled

outages and project direct beneficiaries were deleted. The methodology of one the remaining two PDO indicators; i.e., improvement of the voltage quality, was revised to count the number of hours during which the voltage was in the acceptable range, rather than the number of days. A new PDO indicator was added to measure the increase in energy invoiced to medium voltage customers. However, the calculation method for the remaining PDO indicator, i.e., increase in energy supplied through the transmission network, was later modified to measure the impact of the transformers upgraded by the project funds, excluding the originally listed ten substations which were upgraded by ANDE using their own resources during the initial long delay of project start. Hence, the target for this indicator was revised down due to the different energy flow in the project-funded new substations. These changes in the results framework allowed the project team to better and correctly capture the impact of the project and they did not result in lowering the scope or the ambition of the project. Since this was in line with the Bank Guidance on Implementation Completion and Results Report (ICR) for Investment Project Financing Operations regarding indicator changes (please see Paragraph 61 Changes to PDO indicators on page 18 of the Bank Guidance), a split rating will not be implemented.

- **Second Restructuring (September 19, 2017):** The project closing date was extended by 12 months from October 31, 017 to October 31, 2018, resulting in a total extension of project closing date by 34 months. This was required to complete project activities related to the implementation of the SCADA system, construction of the fiber optic network, establishment of a wireless network, construction of two substations and consultancy works for the revision of energy planning and human resources structure of ANDE. At the restructuring, IBRD funds were once more reallocated among components due to more savings accrued under components 2 and 3, and higher costs under component 1 (Revised allocations are given in the table below).

Table 1. Allocation of IBRD Funds (US$ million)

	Original	First Restructuring	Second Restructuring
Component 1	20.00	25.63	30.15
Component 2	77.00	71.77	67.83
Component 3	2.75	2.35	1.77
Front-end-fee	0.25	0.25	0.25
Total	**100.00**	**100.00**	**100,00**

3. Relevance of Objectives

Rationale

Despite a high electricity access rate of 99.3 percent of the population (Word Bank data 2017), uninterrupted, reliable and high-quality electricity supply, especially among the most vulnerable segments of the population, has been one of the obstacles for sustained poverty reduction in Paraguay (Country Partnership Strategy 2015-2018, p.7). Therefore, the project aimed at addressing this development problem through increasing the quantity and quality of electricity supply and improving the performance of the electricity utility ANDE. The project area was the Asuncion Metropolitan Area, where 15 percent of the population lived under poverty line. Furthermore, although Paraguay is a major electricity generator and

exporter in South America, electricity consumption per capita has been very low compared to the consumption levels of Brazil and Chile—one third of the consumption in those countries at the time of appraisal (PAD, p.3). Hence, the project objective has been relevant to the country conditions and to ANDE's ten-year Master Plan (2009-2018), which is built on three broad objectives: (i) reducing power losses in transmission and distribution; (ii) expanding transmission capacity; and (iii) enhancing ANDE's efficiency and revenues. The project was to also support the emergency plan passed by the Congress in 2010 as a response to the increased outages and voltage fluctuations in the summer of 2009/10 (ICR, p.6). Overall, the project objective was appropriately pitched for development status in the country.

At the time of project closing, the project objective was broadly aligned with the Country Partnership Strategy (CPS) 2015-2018. Although the project objective fell under Pillar 2 Poverty, Results Area 2. Boosting Pro-Poor Delivery of Public Goods and Services (CPS, p.27-28) and corresponded to Results 2.2: Improved Access to Quality Public Services for the Poor, the strategy's focus was more on the provision of improved access to water and sanitation and improving the quality of services through institution building activities. On the other hand, the Country Partnership Framework (CPF) 2019-2023, which became effective after project closing, supports the strengthening of Paraguay's electricity sector through improved governance and performance of ANDE under Focus Area One, Objective 3: Improve governance in the water and electricity sectors which aims at reducing ANDE's total electricity losses.

Rating
Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1
Objective
"to increase the quantity of the provision of electricity services by the Borrower"

Rationale
Theory of Change

The project had three objectives: (i) to increase the quantity of power supply;(ii) to increase the quality of power supply; and (iii) to improve ANDE's performance. The original project activities to install an integrated distribution management system and 1,060 medium voltage meters, and to increase transformation capacity in 12 substations by 426 megawatt ampere (MVA) were to directly lead to an increase in the quantity and quality of power supplied by overcoming the bottleneck in the transmission and distribution infrastructure, lowering commercial electricity losses and decreasing the voltage fluctuations. The outcomes of these activities were to contribute to the improvement of the technical and financial performance of ANDE, too. Furthermore, the technical assistance activities to be implemented under the third component were to help ANDE to increase the capacity of its environmental and social unit, to strengthen the financial and asset management practices, as well as internal audits. These activities were expected to improve the performance of ANDE in related fields. While the causal pathways from inputs to outputs and outcomes appear credible

and robust, the original and the revised theory of change do not evaluate whether the choice of activities was the most appropriate to achieve the project development objectives, and whether the activities were of adequate scale to generate a critical mass of change.

Achievement of the First Objective

As a result of project activities, 2,773 advanced energy meters for medium voltage customers were installed against the original and revised targets of 1,060 and 2,388, respectively. This was supported by the installation of the SCADA system and related 38,200 tele-supervision points, with which the system can now be better monitored in real time (It was originally estimated that 53,000 tele-supervision points would be needed. During implementation, it was found that the actual number of points that were needed to be integrated in to the system was 38,200). Furthermore, the installation of 3,611 km of fiber optic network against a target of 2,952 km now allows a better communication among substations. These project outputs led to an increase in the amount of electricity invoiced by 30.0 GWh from a baseline of 571.9 GWh to 601.9 GWh. The target was an increase of 17.2 GWh to 589,1 GWh. This increase in the electricity invoiced can also be interpreted as a decrease in commercial losses of ANDE, which, together with technical losses, was 34.5 per cent in 2009 (PAD, p.18). The project indicators did not measure the decrease in commercial or technical losses.

Moreover, targeted 17 existing substations were upgraded with new transformers; and two new substations were built as planned, increasing the installed capacity of these transformers form a baseline of 791 MVA to 1,592 MVA, substantially achieving the revised target of 1,755 MVA. This resulted in a directly attributable increase in energy supplied through the transmission network in a year from a baseline of 3,008 GWh to 4,704 GWh, again substantially achieving the revised target of 5,051 GWh.

Overall, the achievement of the first objective is rated Substantial.

Rating
Substantial

OBJECTIVE 2
Objective
“to increase the quality of the provision of electricity services by the Borrower”

Rationale
As explained in the previous section, 17 substations were upgraded, and two new substations were constructed, as planned. In addition, a reactive compensation was installed at the Guarambaré substation to improve the voltage quality in the system. These resulted in a substantial increase in the installed capacity at the upgraded substations and the voltage quality improved: the number of hours during which the voltage is between 198 kv and 242 kv in a year increased from 6,600 (275 days) to 8,729 (almost 364 days). The target was 8,040 hours (335 days). As such, the project was highly successful in achieving this objective.

Rating

High

OBJECTIVE 3

Objective

“to improve the Borrower’s performance"

Rationale

The results framework did not include any specific output indicator to measure the implementation of technical assistance activities. However, the ICR (p.28) states that following project activities were implemented:

- Corporate diagnosis study and plan to improve ANDE’s corporate performance were carried out by specialized consultants.
- Consultants supported ANDE in implementing SCADA
- Workshops were organized and survey equipment was purchased to support the Environmental and Social Unit.
- Training was given by consultants in financial and asset management practices and internal audits.

The results framework did not include any PDO level indicator to measure the achievement of this objective. However, it can be argued that the increase in the quantity and the improvement in the quality of electricity supplied can be used as proxy to evaluate the improvement in the utility’s performance. The increase in the amount of electricity billed to medium voltage users should have a positive impact on the financial viability of the ANDE. Furthermore, the installation of SCADA is to be expected to allow ANDE to better operate and maintain the system.

Overall, the achievement of this objective is rated modest because while the PDO level indicator (on energy sales invoices) could be taken as proxy for financial performance of the utility, there were no other indicators to capture the utility's performance in distribution management, planning, environmental and safety management, etc.

Rating

Modest

OVERALL EFFICACY

Rationale

Through the installation of medium voltage meters and the upgrading of substations, including the installation of a reactive compensation, the project was substantially and highly successful in achieving the objectives to increase the quantity and quality of electricity supplied, respectively. However, there was insufficient information to measure the achievement of the third objective to improve the performance of the utility through technical assistance. It was partially measurable through first PDO level indicator, which is used as a

proxy; therefore, its achievement is rated modest. Overall, the efficacy of the achievement of project objectives is rated substantial.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic Analysis

Neither the PAD nor the ICR contains a "with project" or "without project" discussion. There is no discussion in the documents, either, whether the project is the least cost alternative to achieve the project objectives. The discussion in the PAD (p.8) about lessons learned and reflected in the project design does not provide information about which alternatives, if any, were considered during project design.

At appraisal, an economic analysis was conducted for project activities under components 1 and 2. The economic analysis was typical and straightforward for such electricity infrastructure investments: costs were taken as the cost of investments, engineering and administration, and operation and maintenance (O&M), whereas benefits were restricted to incremental savings from loss reduction and total increased energy sales. Other long-term benefits of increased electricity consumption by consumers were not included in the economic analysis. The analysis time frame was 40 years. The economic analysis resulted in an economic rate of return (ERR) of 37 percent for base case and 21 percent for low case, which combines an increase of 20 percent in project costs, a decrease of 20 percent in additional electricity to be provided by the investment, and a 20 percent increase in the foregone value of electricity sold to Brazil (PAD, p.12). The net present value (NPV) calculated at appraisal resulted in US$495 million for base case and US$218 million for the low case at a discount rate of 10 percent.

Economic analysis was repeated at project closing. Main differences in assumptions were lower than expected project costs, a higher opportunity cost of the energy used to meet the growing demand instead of selling it to Brazil or the regional market, and a lower difference between domestic and export prices of electricity (ICR, p.13). Furthermore, the quantity of electricity supplied increased less than the estimated amount. At project closing, domestic tariff levels were at a similar level in real terms when compared to the level at appraisal. Nevertheless, economic analysis at project closing resulted in an ERR of 15 percent and an NPV of US$48 million at 10 percent discount rate. The longer-than-expected project implementation period adversely affected the economic benefits of the project, too.

Financial Analysis

Financial analyses were conducted at appraisal and project closing. The only difference between the economic analysis and financial analysis is that the latter includes financing costs and taxes in the costs (ICR, p.33). The calculations show that the financial rate of return of 34 percent at project closing was higher than 24 percent calculated at appraisal, whereas the NPV of US$70 million was at project closing was markedly lower than the NPV of US$190 million calculated at appraisal.

Operational and Administrative Efficiency
There were major shortcomings in the operational and administrative efficiency of the project. Because of the lengthy legal approval process of the loan agreement in Paraguay, the elections held in April 2013 and the time required to complete the ongoing project activities, the project closing date was extended by 34 months. As explained under economic analysis above, this had adversely affected the ERR and NPV figures at project closing. Furthermore, the project components and indicators had to be restructured to improve the project design and monitoring and evaluation arrangements for better capturing project outcomes and the achievement of the objectives. Until early 2015, the project implementing unit did not have a dedicated manager and there were no clear action plans prepared (ICR, p.15). Lack of sufficiently trained personnel in ANDE to carry out procurement and fiduciary activities according to relevant World Bank guidelines was another factor adversely affecting project's efficiency. These shortcomings required the World Bank project team to assume a more active role in project implementation through direct support to ANDE.

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	✓	37.00	96.80 ☐ Not Applicable
ICR Estimate	✓	14.00	97.80 ☐ Not Applicable

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

6. Outcome

Although the project objectives are highly relevant to country context in Paraguay since it is directly related to poverty reduction, especially in rural areas, the Bank strategy at the time of project closing focused on water and social sectors more than the electricity sector. Therefore, the relevance of project objectives is rated substantial. The project was substantially successful in achieving its objectives to increase the quantity and to improve the quality of electricity supplied in the project area. The project partially achieved its objective to improve the performance of the electricity utility, ANDE. Overall, efficacy is rated substantial. The efficiency of the project is rated modest, mostly because of the shortcomings in operational and administrative efficiency, such as long delays, project design and M&E arrangement issues, and lack of capacity on the borrower side to implement the project. Overall, the project outcome is rated moderately satisfactory.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

A deterioration of the financial viability of ANDE and potential corporate governance issues may pose a low risk to the development outcome. Currently, ANDE's financials are sound. Following the tariff adjustment in March 2017, ANDE had a net profit after tax and interest of US$67.5 million and US$97.8 million in 2017 and 2018, respectively. However, although ANDE is an autonomous and decentralized public institution, it is a government institution and is subject to tariffs determined by the government. In the future, if the government follows populist policies and tariffs are not sufficiently increased to cover ANDE's increasing operating costs, the financial condition of ANDE might deteriorate and this might have an adverse impact on the sustainability of the project's development outcome.

8. Assessment of Bank Performance

a. Quality-at-Entry

The objectives were strategically relevant to the country context, but they were not clearly stated, especially the third objective to improve the performance of ANDE. The theory of change was robust for the first two objectives to increase the quantity and improve the quality of electricity supply, whereas a direct link could not be established between the project activities and the objective to improve ANDE's performance, nor did exist any indicators to measure the achievement of this objective. Since the original indicators were difficult to track and measure, they were revised in the first restructuring (Restructuring Paper dated December 10, 2015, p.6). The project was designed to address the priorities of the country. However, the project components had to go through a revision because of a long delay after approval caused by the lengthy internal approval process in Paraguay, which was a risk not identified at appraisal. Lessons learned and reflected in the project design are briefly and generically explained in the PAD; therefore, it is not clear how the project benefited from lessons learned in similar projects in other countries and recent projects in Paraguay (PAD, p.8).

An economic analysis conducted at appraisal was adequate for such an investment although project benefits were restricted to incremental revenues from increased billing and sale of additional electricity but did not include other economic benefits. Technical aspects of the project were sound and the equipment and technology to be used in the project were sector standards. The project being ANDE's first project funded by the World Bank, training was given to ANDE's staff on the World Bank's financial management procedures, and fiduciary arrangements were in place to ensure compliance with the World Bank financial management guidelines during project implementation (PAD, p.13-14). Despite detailed implementation arrangements being in place (PAD, p.23-34), the legal framework under which the ANDE would execute this project was not adequately incorporated into the project design; ANDE's cumbersome operational and financial processes, since it operates as a government institution but not like a state-owned economic enterprise, caused delays in project implementation (ICR, p.20). Risks related to ANDE's project implementation and procurement capacity, which materialized during project implementation, and their mitigation measures were among the risks identified in detail during project management (PAD, p.35-39). Relevant safeguards policies were triggered at appraisal.

Overall, the quality of entry is rated moderately unsatisfactory.

Quality-at-Entry Rating
Moderately Unsatisfactory

b. Quality of supervision

There were 16 supervision missions during project implementation. Due to lack of institutional capacity of ANDE to implement the project and the absence of exclusively dedicated project manager and clear action plans, supervision missions assumed a very active role in project implementation (ICR, p.15). Bank supervision led to the appointment of a dedicated project implementing unit (PIU) manager and full-time qualified personnel in 2015 (ICR, p.15). As a result, PIU's performance improved and project implementation accelerated (ICR, p.18).

After a long initial delay in project implementation, the project team restructured the project to better capture the impact of the intervention and to monitor the achievement of the outcomes (Please see First Restructuring in Section 2.e). Despite an improvement in the project's monitoring and evaluation (M&E) arrangements at this restructuring, the absence of indicators capturing the achievement of the third objective to improve ANDE's performance was not corrected (ICR, p.12).

Supervision of fiduciary and safeguard aspects was adequate. Supervision of project's financial management was facilitated by the presence of a Bank fiduciary team in the region. The project team closely supervised procurement activities, which were mostly carried out in compliance with the World Bank guidelines, and intervened when there were issues in safeguards compliance: the project team was actively involved in addressing the non-compliance with the environmental safeguard during the construction of the Minga Pora substation, one of the two new project-funded substations.

Quality of Supervision Rating
Moderately Satisfactory

Overall Bank Performance Rating
Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

Project objectives were not clearly defined, especially the third objective to improve ANDE's performance. Theory of change for the first two objectives was robust. Original indicators were specific and mostly measurable. However, there were irrelevant indicators, such as reduction in service interruption, which is related to reliability of electricity supply, and there was no outcome or intermediate level indicator to capture the achievement of the third objective. Some project development level (PDO) indicators were designed to measure the system-wide changes, not the impact of the project in the project area. As the borrower,

ANDE was responsible from M&E, and the M&E arrangements were adequately well-embedded institutionally.

b. M&E Implementation

The weaknesses in the M&E framework were mostly corrected at the first restructuring in December 2015. Irrelevant indicators were deleted and indicators which did not capture project's impact were revised; however, no indicator was added to the results framework to directly capture the achievement of the third objective. This deficiency continued until project closing. ANDE monitored and shared project outputs and intermediate results, as planned in the M&E design (ICR, p.16). ANDE's regional and headquarter offices provided project implementation data to project implementing unit to monitor project progress and the achievement of project objectives. ANDE has adequate infrastructure, which is strengthened with the installation of SCADA and tele-supervision points, to sustain M&E functions and processes after project closing.

c. M&E Utilization

M&E findings were adequately communicated to the government and the World Bank project team. They were used to restructure project components and indicators to better capture the achievement of project outputs, outcomes and objectives. However, absence of relevant indicators hindered the evaluation of the achievement of the third objective. M&E data was sufficiently used to provide evidence for the achievement of the outcomes related to the first and second objectives to increase the quantity and quality of electricity supply.

The project had moderate shortcomings in design and implementation, but overall M&E arrangements, especially after the restructuring in December 2015, were generally sufficient to assess the achievement of the objectives and test the links in the results chain.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was classified as Category B under Environmental Assessment (OP/BP 4.01) and triggered Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Physical Cultural Resources (OP/BP 4.11), Indigenous Peoples (OP/BP 4.10), and Involuntary Resettlement (OP/BP 4.12).

Environmental Assessment (OP/BP 4.01): All project investments were expected to pose small-scale direct and reversible environmental and social impacts (PAD, p.15). An Environmental and Social Management Framework (ESMF) and Environmental and Social Management Plans (ESMP) for the existing and new substations were prepared before approval and disclosed in Paraguay and in the World Bank's Infoshop between August and October 2010. Compliance with this safeguard was supervised by

ANDE with the support of two dedicated consultants. Supervision results were reported bimonthly. The project was mostly in compliance with this safeguard; however, there were challenges in securing compliance with environmental and social safeguards during the construction of the two new substations. The reasons were the low environmental management capacity of the contractor, which required the project team's involvement to support ANDE address this issue (ICR, p.40) Under component 3, the project funded activities to strengthen ANDE's environmental social management capacity; however, "[t]he level of [environment and social] management required by the World Bank was considered high against the prevailing sector standards in Paraguay" (ICR, p.21).

Indigenous Peoples (OP/BP 4.10): The Indigenous Peoples Plans were prepared during project implementation and disclosed in the country and the World Bank's Infoshop but were not implemented because indigenous people were not affected by project activities (ICR, p.18).

Involuntary Resettlement (OP/BP 4.12): Two resettlement action plans (RAPs) were prepared for the construction of two new substations. The RAP for one of the new substations was not implemented, because the substation was constructed on land owned by ANDE. Other RAP was implemented in compliance with the safeguard policy. A grievance redress mechanism was effective in resolving claims (ICR, p.40).

Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), and Physical Cultural Resources (OP/BP 4.11): The ICR did not provide information about the implementation and results of these three safeguard policies.

b. Fiduciary Compliance

Financial Management

ANDE was the primary borrower of the loan, which was guaranteed by the Government of Paraguay, and responsible for the financial management of the project. Interim and annual financial reports were mostly submitted on time. Audited financial statements were unqualified and they were acceptable to the World Bank. Financial arrangements were in compliance with the World Bank guidelines; however, at project closing in October 2018, the final audit report was not received by the World Bank and US$3,473,166 of the unused loan amount was not refunded by ANDE. In June 2019, ANDE submitted the final audit report, and refunded the unused loan amount. All IBRD funds were accounted for at the time of this review.

Procurement

Procurement was implemented in accordance with the Work Bank procurement guidelines. However, lack of coordination among different departments of the ANDE, especially during the early stages of project implementation, resulted in longer contract processing times. Until 2015, the project implementing unit (PIU) did not have trained personnel to carry out procurement (ICR, p.15). The World Bank project team had to closely monitor the procurement process to accelerate contracts' processing and ensure compliance with the World Bank guidelines (ICR, p.18). After the appointment of a dedicated manager to the PIU in 2015, performance of the PIU, including procurement activities, improved substantially. Training on World Bank procurement rules was given to the personnel of the PIU. International bidding allowed non-traditional providers, i.e., providers that have not traditionally provided equipment and services in this sector or in the region, to participate in the bidding process, which required closer supervision (ICR, p.18).

c. Unintended impacts (Positive or Negative)

The primary purpose of the SCADA system and fiber optic network installed under the project was to improve ANDE's performance in monitor the electricity network. However, the fiber optic network will now allow the national communications company, *Compañia Paraguaya de Comunicaciones*, to improve communications in the country, which is expected to have a positive impact on the quality of services in health, education and security (ICR, p.14).

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	Modest	Substantial	Despite some shortcomings in design and implementation, the M&E system was generally sufficient to assess the achievement of the objectives and test the links in the results chain.
Quality of ICR	---	Modest	

12. Lessons

First lesson was selected from the ICR with some adaptation of language. Second lesson was derived from the ICR.

If internal approval processes necessary for project effectiveness and the legal framework under which the project implementing agency will execute the project are not fully taken into consideration and incorporated into project design, project implementation can face serious delays and require a closer supervision by the World Bank project team. The project became effective 14 months after it was approved by the World Bank Board, because a law had to be passed by the parliament in Paraguay. Furthermore, being a government institution, but not a state-owned economic enterprise, ANDE had complex and cumbersome operational and financial processes. This manifested itself in slow processing of contracts and inadequate monitoring of

project activities, including safeguard policies. As a result, the World Bank project team had to supervise the project implementation more closely than such a project would require with a more flexible and agile project implementing agency experienced in executing projects according to the relevant World Bank guidelines.

Proactivity of the project team in revising the results framework based on the findings during early stages of project implementation will help better capture the achievement of the project objectives. In this project, the original results framework included indicators which were not directly related to the achievement of the project objectives. Furthermore, other indicators were designed to measure the system wide changes, not the changes caused by project intervention. Also, baseline figures and targets for some indicators needed to be revised to capture the full impact of the project. The restructuring resulted in some indicators being dropped, others being revised and new ones being added, reflecting different and better measures of the project's achievement. After the revision, these indicators were better able to encompass outcomes related to the first and the second objectives (though, unfortunately, for the third objective, no new PDO indicator was introduced to capture improvements in the performance of ANDE)

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is concise and candid in presenting the shortcomings in project design, results framework and project implementation. The discussion of theory of change is adequate. The narrative is detailed and internally consistent and supports the ratings with available evidence. It mostly follows the Bank Guidance.

On the other hand, although the lessons are useful and supported by evidence in the ICR, they are fairly general and not all linked to specific events or actions. Secondly, the ICR fails to provide information on three safeguard policies (out of six) which were triggered at appraisal. It should be mentioned also that the project's actual component costs are not reported. Finally, given that key outcome indicators were revised in the first restructuring, the ICR does not provide an explanation why a split rating was not implemented.

a. Quality of ICR Rating

Modest