Report Number : ICRR0021256

1. Project Data

Project ID	Project Name	
P104265	MA-ONE Support Project	
Country	**Practice Area(Lead)**	**Additional Financing**
Morocco	Energy & Extractives	P145649
L/C/TF Number(s)	**Closing Date (Original)**	**Total Project Cost (USD)**
IBRD-75640,IBRD-83080	31-Mar-2014	150,000,000.00
Bank Approval Date	**Closing Date (Actual)**	
10-Jun-2008	31-Dec-2015	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	150,000,000.00	0.00
Revised Commitment	178,805,057.32	0.00
Actual	146,254,670.80	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) was to contribute to increase the efficiency and reliability of electricity supply to electricity consumers (Loan Agreement, June 23, 2008, page 7).

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

Yes

Did the Board approve the revised objectives/key associated outcome targets?
Yes

Date of Board Approval
26-Nov-2013

c. Will a split evaluation be undertaken?
No

d. Components

At the appraisal the total baseline cost was US$161.14 million (PAD, Annex 5) Including physical and price contingencies, taxes and duties and interest during construction the total cost was estimated to be US230.72 million. Actual component costs are reported in Annex 1, table (a) of the ICR (page 28). This table did not show total component costs, rather it included ony IBRD costs by components plus (presumably) unallocated price contingencies of US$5.57 million and IBRD front end fee of US$0.5 million. The total actual costs in Annex 1, table (a) do not, however, match total IBRD loan disbursements in the World Bank Client Connection website or "IBRD Financing" in table (b) in Annex 1 on the same page of the ICR. In the absence of accurate information on actual total component costs requested from the Bank task team leader this Review had no option but to use the incomplete costs shown in Annex 1, tables (a) and (b) for the Sections below.

Component 1: Transmission and Distribution Network (appraisal US$144.74 million; actual US$129.4 million)
This component was to finance implementation of the National Office of Electricity's (Office National de l'Electricite, ONE) transmission network expansion plan over 2008–2013 as well as a program to reinforce the interface between transmission and distribution. It was designed to increase both efficiency and reliability of electricity supply. Following the project restructuring in October 2013 the National Office of Electricity and the National Office of Drinking Water were combined as the Office National de l'Electricité et de l'Eau Potable (ONEE) which formally became the new implementing institution for the project.

Component 2: Compact Fluorescent Lamps (CFLs) Distribution (appraisal US$8.4 million; actual US$7.64 million)
ONEE would procure and distribute 5 million CFLs through an accredited marketer to its customers. Customers would pay for the lamps over 12 months through electricity invoice deductions. This program aimed to reduce peak demand by about 200 megawatt (MW) and total annual electricity demand by 300 gigawatt-hour (GWh).

Component 3: Energy Trading Desk (appraisal US$7 million; actual US$0 million)
This component was to finance the procurement of hardware and software to be installed in a trading and market risk management platform implemented by ONEE for fuel purchasing for its own power plants and for trading electricity with Spain. Energy trading allows for the rationalization and efficient use of energy resources. This component was dropped during the project's restructuring in October 2013.

Component 4: Wind Measurements Database (appraisal US$1 million; actual US$0 million)

This component was to retroactively finance an ongoing project to establish a certified set of wind data to support the development of wind capacity by independent power producers (IPPs). It was to inform the design of wind power generation plan to increase efficiency and reliability of electricity supply. This component was dropped during the project's restructuring in October 2013.

Component 5: Technical Assistance (appraisal US$2.5 million; actual US$0.87 million)
This component was to finance the four following technical studies, designed to inform potential reforms to enhance efficiency and reliability of electricity supply: (a) Development and implementation of contractual arrangements with other operators in the sector, (b) Tariff study, (c) Procurement Strengthening Study and (d) Rural Electrification Valorization (Valorisation de l'Electrification Rurale, VER). The first and third of these sub-components were dropped during the project's restructuring in October 2013.

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

Project Cost

At appraisal, total project cost was estimated at US$233.2a million (the total financing requirement of US$230.74 million in the project costs table of in Annex 5 did not include the technical assistance cost of US$2.5 million listed in the same table). PAD, Annex 5). Actual cost was US$175.05 million (including IBRD loan US$146.25 million, World Bank Client Connection website, and borrower US$28.8 million, ICR, Annex 1).

Financing

At appraisal, an IBRD loan equivalent to US$150 million was approved. Additional financing was US$40.5 million equivalent was also approved. Actual loan disbursement was US$146.25 million equivalent, which was 77 percent of the total approved amount of US$190.5 million equivalent. The undisbursed balance of Euro 8.65 million or US$44.25 million in historical US$ was cancelled after the project closure with the notification date of October 11, 2016 (World Bank Client Connection website). This large difference of undisbursed amount in US$ and Euro was because of the complex interaction of currency exchange and inflations rates among three currencies of Euro, Moroccan Dirham (MAD), which changed over the project period.

Borrower Contribution

At the appraisals of the original IBRD loan and additional financing, the borrower contribution was zero (PAD, pages before the main text, Additional Financing Project Paper, page v). The Borrower's actual contribution was US$28.8 million (ICR, Annex 1, table (b)) but the ICR did not report the nature of this contribution, i.e., whether it was in kind or financing of transmission and distribution network, etc., which would have helped assess the actual amount needed for the additional financing, whose approved amount was US$40.5 million or Euro 30 million in 2013.

Dates

The project was approved on June 10, 2008 and became effective on September 17, 2008. A Mid-term review mission was held during October 7-14, 2010. The project was restructured on October 15, 2013 to (a) change the borrower from Office National de l'Electricite (Moroccan Electricity Company, ONE) to

ONEE, (b) change the name of the project, (iii) reduce the project scope by removing two components and three subcomponents, (d) extend the closing date from original closing date of March 31, 2014 to December 31, 2015 (actual closing date) and (e) update the results framework to reflect the reduced scope. The reason for the closing date extension was the delay in awarding the construction contracts and the time needed to mobilize the additional financing required for some key components. An additional financing of US$40.5 million equivalent was approved on November 26, 2013 to fill a financing gap that original PAD did not address; the PAD noted that the project was part of a larger ONEE investment program and all infrastructure contracts covered in the project would be fully financed by the Bank (PAD, paragraphs 15 and 108; Additional Financing Project Paper [AF PP], paragraph 22).

3. Relevance of Objectives & Design

a. Relevance of Objectives

The project's development objective (PDO) was aligned with the Country Partnership Strategy (CPS) for FY2014–17 when the project was closing. The project was part of the CPS and in particular included the result area 1.5 "Improve Reliability of Electricity Supply". This project was also relevant to the result area 2.2 "Increase Renewable Energy Generation and Enhance Energy Efficiency". At appraisal, the PDOs were relevant to objectives of the Country Assistance Strategy (CAS) for FY2006-09, in particular, accelerated growth. The project was intended to ensure uninterrupted and high quality of electricity supply to households and firms. As a result, households would enjoy a higher quality of life and industry would avoid losses due to supply interruptions and, more generally, economic growth would be sustained.

The PDO was relevant to Morocco's energy sector strategy. In 2009, the Moroccan government developed a National Energy Strategy setting clear and precise objectives. This strategy covers five main strands: optimize the fuel mix in the electricity sector; accelerate the development of energy from renewable sources, especially wind, solar and hydropower; make energy efficiency a national priority; encourage more foreign investment in the energy sector; and promote greater regional integration. Morocco's first nationally determined contribution (NDC) includes a commitment to reduce greenhouse gas (GHG) emissions by 42 percent below business as-usual (BAU) levels by 2030, conditional on international support. Its unconditional target is 17 percent below BAU levels by 2030. According to the NDC, Morocco's GHG mitigation goals largely rely on transforming the country's energy sector to focus on increasing in renewable energy production, increasing the use of natural gas, and reducing energy consumption and public fossil fuel subsidies.

Rating	Revised Rating
Substantial	Not Rated/Not Applicable

b. Relevance of Design

The project's original design entailed five components aimed at achieving reductions in technical losses, power supply interruptions and inefficient energy consumptions through the strengthening of the Moroccan transmission and distribution (T&D) system and the installation of 5 million compact fluorescent lamps (CFLs). However, the results framework in the PAD did not show how project inputs would lead to outputs, intermediate outcomes and final outcomes of increased efficiency and reliability of electricity supply to consumers. On the contrary, the results framework was merely a statement of objectives and indicators and did not provide the results chains with the activities and institutions involved that underpinned the project's design and hence how the project's objectives would be achieved.

A more carefully prepared results framework in the PAD may have forestalled the restructuring of this project in October 2013 when the project's implementing agency was changed, and when two components and three sub-components were dropped, and shortly thereafter in November 2013 when substantial additional financing was provided which, according to the ICR, was to be used to complete the project's core objectives because of a financing gap equivalent to US$ 40.5 million or 27 percent of the original appraised total project cost in historical US$ or 33 percent in Euro.

Rating
Modest

Revised Rating
Not Rated/Not Applicable

4. Achievement of Objectives (Efficacy)

Objective 1

Objective
Increase the efficiency of electricity supply to electricity consumers.

Rationale
Outputs

- Number of CFLs placed was increased to 4.566 million, 92 percent of the target of 5 million compared with a baseline of 40,000. The CFLs increased the efficiency with which electricity was used in lighting.

- All the transmission and distribution (T&D) work was completed and commissioned, except the quite substantial Dar Bouazza 225/22 kilovolt (kV) substation as ONEE informed the World Bank in January 2010 of its decision to use its own financial resources to fund the Dar Bouazza substation. It was dropped at the project restructuring.

- The VER and tariff studies completed. According to the ICR the VER study enabled ONEE to set up custom-made offers accommodating specific customer needs to maximize economic benefits of electricity in rural areas (ICR, Indicator 9: VER study completed, page v). The tariff study was completed in 2014. It was a

critical input in the preparation of subsequent major power tariff adjustments. The tariff increase was approved by the Government in May 2014 and was introduced in August 2014. Thus, these studies contributed to improving the allocative efficiency in the electricity market.

On the other hand, the following three components were not implemented for acceptable reasons explained below which should have been identified during the project's design.

- The study of development and implementation of contractual arrangements was not implemented. It was found to be premature, because (according to the ICR) its scope was larger than ONEE's perimeter of action and the absence of new electricity market environment (ICR, paragraph 26). ONEE requested in September 2009 that this component be dropped (ICR, paragraph 26). It was eventually dropped at the Project Restructuring in October 2013.

- Technical assistance to upgrade procurement functions was also not implemented. ONEE decided to drop this activity after the announcement of a merger with the National Office of Drinking Water (Office National de l'Eau Potable, ONEP). ONEE argued that a profound rethinking of support functions, including procurement was required as a consequence of the merger of ONE with ONEP. However, as the ICR noted, ONEE is a sophisticated client and that its procurement procedures were proven to be at a high standard. Though there was room for improvement, the impact of withdrawing this study at Project Restructuring on project outcome was assessed in the ICR as "significantly limited" (paragraph 26).

- The Trading Desk was also not implemented. In July 2012, ONEE decided to drop this component, citing difficulties in implementing a trading and risk management platform in the absence of a regulatory framework required to trade and manage energy-linked financial contracts (ICR, paragraph 26).

Outcomes

- Electricity savings due to CFLs deployment (in gigawatt-hour, [GWh]) were 345 GWh, 15 percent more than the target of 300 GWh (ICR, Annex 2, Table 2.5). To the extent that more efficient use of electricity lighting leads to a permanent reduction in electricity consumption it would add to the available electricity supply.

- The ICR also reported that peak power savings due to CFLs deployment (in GW) achieved the target of 0.2 gigawatt (GW) (Annex 2, Table 2.5). In addition, data according to research conducted by ONE in 2010, "global satisfaction rate following use of CFLs was 84 percent and 65 percent of the customers noticed a decrease in their monthly electricity bills due to the use of CFLs. On average, a Moroccan household had a 400 kilowatt-hour (kWh) average decrease in electricity consumption" (ICR, page 37 . The ICR, continuing to quote from the research, stated that "the decrease of energy cost per household, or in other words, energy savings per household due to the use of CFLs, were at 20 percent with regard to

the bills and 22 percent in energy consumption (kWh)". (ICR, page 37). However, although the ICR provided a website address for the source of this finding, the website address did not lead to a website, and thus this ICR Review could not verify whether the research finding quoted was specific to the customers who used the CFLs financed by this project or not.

- Electricity transmission losses in Southern Morocco (south of Chcihaoua) achieved 6.5 percent, exceeded the target for this project of 8.5 percent by 80 percent from the baseline of 11 percent (ICR, Annex 2, Table 2.4). This was provided as evidence that the project's investments contributed to the project's objective "to increase the efficiency of electricity supply to electricity consumers" in Southern Morocco. The indicator of transmission losses South of Chichaoua was used as a proxy for the efficiency of the transmission line between Chichaoua and Agadir spanning 160 kilometers financed under this loan (Additional Financing, Project Paper, paragraph 26). The ICR implicitly assumes that the other project-financed lines would also show the same reductions in transmission losses.

Although there was no measurement of transmission losses in the project-financed transmission lines before and after the project was completed and provides no reason why such measurements were not made. The ICR also provides no reason why the reduction in transmission losses in the Chichaoua to Agadir line (roughly along the border between Southern and Northern Morocco) would be comparable to the reduction in losses measured in Southern Morocco. Nevertheless, in the absence of evidence to question the assumptions made in the ICR this Review accepts the ICR's conclusion that the new project-financed transmission lines in Southern Morocco would achieve the same declining transmission losses that were achieved in existing lines in the whole of Southern Morocco.

Rating
Substantial

Objective 2
Objective
Increase the reliability of electricity supply to electricity consumers.

Rationale
Outputs

Same T&D and CFL outputs were as in the Objective 1 above.

Outcomes

• Peak power savings due to CFL deployment (in GW) achieved the target of 0.2 GW (200 MW). Data on savings were derived from progress reports. The savings would contribute to reducing the potential risk of forced load shedding (brown outs).

• According to the ICR the reduction of unserved energy (arguably a measure of predictable deficit between electricity supply and demand and not a measure of reliability) achieved during project implementation was 230 MWh, which it stated exceeded the target of 400 MWH by 140 percent (see Data Sheet, page iii). To the contrary, the reduction achieved was 43 percent less than the target reduction.

A critical measure of increased reliability of electricity supply would be reductions in outages per year such as reductions in the number or frequency of interruptions to supply. Annex 1 of the Project Paper for the Additional Financing loan in 2013 indicated that the reduction in unserved energy was to be measured by "technical interruptions". This was certainly an improved basis compared with the use of unserved energy to assess reliability. In the absence of any information in the ICR on reductions in "technical interruptions" it is assumed there was no evidence confirming that the reliability of electricity supply to consumers had increased.

Based on the lack of any information that the reliability of electricity supply to consumers had increased in the project area this Review concluded that Objective 2 was not achieved and its efficacy is therefore rated modest.

Rating
Modest

5. Efficiency

Ex-Ante Economic Analysis

An economic analysis of the project's benefits and costs was not conducted at appraisal. On the other hand, as part of the appraisal of the Additional Financing loan in 2013, there was an analysis of the likely efficiency in Component 1 (Transmission and Distribution Network) and Component 2 (CFL Distribution) accounting for 96 percent of the total of the two IBRD loans. The focus was on that part of the PDO aimed at the increase in the efficiency of electricity supply. The efficiency of that part of the PDO aimed at an increase in the reliability of

electricity supply was not conducted. The analysis of Component 2 included an estimate of the social costs of carbon dioxide equivalent (CO2e), which could also be included in the analysis of Component 1 especially its assessment of the benefits and costs of power supply from the supercritical and subcritical coal plants.

For Component 1 (91 percent of the total IBRD loans), the cost benefit analysis was done in constant 2008 prices. The 'without' project scenario assumed that if the individual investment would not take place but that the system expansion would continue unhindered (AF PP, paragraph 3, Annex 4). The only benefit included in the analysis was the value from the incremental power sales from the evacuation of power from the Safi supercritical and Jorf Lasfar subcritical coal plants by Independent Power Producers (IPPs). Electricity sales of the electricity generated at these independent power plants (IPPs) valued at the estimated economic price of electricity in Morocco was estimated to be US$0.14 per kilowatt-hour (/kWh) (AF PP, paragraph 5, Annex 4). The costs in the analysis were (i) operation and maintenance costs, assumed to be two percent of investment cost for transmission line and substation project; (ii) the cost of procuring electricity from IPPs estimated at US$0.06/kWh; and (iii) the average system costs of the remainder of the transmission and distribution system to the end users estimated to US$0.015/kWh (AF PP, paragraph 3, Annex 4). The resultant net present value (NPV) was US$2.6 billion and an economic internal rate of return (EIRR) of 62 percent. This is the point value for the rate of return "at appraisal" used in the table at the end of this section. Although the PDO indicators included the transmission loss to assess the efficiency in transmitting electricity and unserved energy to assess the reliability of electricity supply, they were not included in the analysis of the project's efficiency.

For Component 2, the cost saving of reduced consumption of electricity and avoided CO2 emissions by using the CFLs was compared to the counterfactual of continuing use of incandescent lamps. The additional financing project paper (AF PP) did not report the NPV, real, constant or nominal prices and the discount rate of the analysis for the base year. According to the AF PP, the NPV was US$59.2 million and an EIRR was 276 percent. The ICR points out that the analysis underestimated the energy saving because the reduced consumption was valued at only the tariff rate of US$0.097 per kilowatt-hour (kWh) without considering an estimated US$0.14/kWh of economic price of electricity in the additional financing project paper (AF PP 2013). Thus, since avoided economic loss of electricity of US$0.043/kWh (gap between tariff and economic price of electricity) was not included in the analysis, the benefits were underestimated. The analysis in AF PP in 2013 assumed replacement of all 4.96 million CFLs was to take place during 2009, which was inconsistent with the actual data available in the same AF PP that reported 4.566 million were distributed by October 2013 (page 14).

Ex-Post Economic Analysis

The ex-post analysis covered the same components using the same methodology as in the additional financing project paper, but some information and assumptions were updated. The ex-ante analysis covered 94 percent of the actual project cost. The Bank team provided IEG with the calculations framework for the analysis to assist the preparation of this ICR review

For Component 1 (90 percent of the actual project cost), using the same framework as in the ex ante analysis with the updated costs of independent power producers' (IPP's) electricity and the T&D investments, a NPV was estimated to be US$1.8 billion with an EIRR of 52 percent. The actual calculation was in 2008 prices from 2008for an assumed operational life for transmission lines of 39 years, which differed slightly from 40 years

used in the ex-ante analysis (AF Project Paper 2013, page 24). This ICR review changed the base of NPV to 2008 to be consistent with the 2008 prices, which resulted in a slightly higher NPV of US$2 billion but an EIRR that remained at 52 percent. This is the result reported in the table at the end of this section.

For Component 2, the ICR did not report whether the ex-post analysis was conducted in real, constant or nominal prices. The base year of NPV estimate 2007, as the discounting started from 2008. CFL costs were converted from Euro to US dollar using an exchange rate in 2013 but included in the calculation in 2009, which is inconsistent with AF Project Paper 2013 that reported CFLs were procured in 2008 (page 3). The number of CFL installations and the saved electricity consumption in the ex-post analysis were inconsistent with the ICR output of CFLs and the records in the ISRs on CFLs. The ex-post analysis in the ICR overestimated the project's CFL distribution as it included the baseline CFLs distributed of 40,000. While the actual CFLs distributed were spread over 2009-2012 reported among the ISRs, in the efficiency analysis, CFLs were all assumed to be distributed in 2009. As in the ex-ante analysis, it underestimated the benefits of energy saving considering only the electricity tariff without considering the economic price of electricity. Besides, despite the tariff increase in August 2014, the analysis used the same tariff rate of US$0.097/kWh at the AF appraisal in 2013. It used the social value of carbon in the World Bank 2014 guidance, but it used US$30 per ton of CO_2e for 2015 in 2014 prices for the entire project period. This ICR's result was am NPV of US$68 million with an EIRR of 312 percent. This ICR review made the analysis more consistent by using 2008 prices, and including the avoided economic loss of electricity (as discussed in the ex-ante analysis) in addition to the tariff, using the CFL number in the ISRs and ICR excluding the baseline 40,000 CFLs, assuming the rest of the CFLs were used for replacement (AF PP page 3), and estimated carbon prices during 2010-2013 as the same increase of three percent. The results were an NPV of US$159 million with an EIRR of 462 percent.

Financial analysis of the project was not conducted at the appraisals (original and AF) nor in the ICR. The design and implementation efficiency was "modest" largely due to the need for additional financing that was necessitated by the misrepresentation of the actual financing needs in the PAD.

Despite the use of many assumptions in the analysis of efficiency in the ICR this Review concluded that the project's delivery of a reinforced electricity transmission and distribution system along with the installation of almost 5 million CFLs was efficiently achieved. Efficiency is therefore rated substantial.

Efficiency Rating
Substantial

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	✓	62.00	91.00 ☐Not Applicable

ICR Estimate	✓	52.00	90.00 ☐Not Applicable

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

6. Outcome

Relevance of the PDO was rated substantial, but the relevance of design was rated modest. Efficacy of the objective to reinforce the transmission and distribution of electricity to consumers was rated substantial. On the other hand, the efficacy of the objective to increase the reliability of electricity supply to electricity consumers was rated modest because there was no evidence that this objective was achieved. The efficiency with which the project achieved its objectives was, despite the many assumptions used in the analysis efficiency, substantial. This Review concluded that this project's achievements had moderate shortcomings. Its outcome is therefore rated moderately satisfactory.

a. Outcome Rating

Moderately Satisfactory

7. Rationale for Risk to Development Outcome Rating

The technical risk is low because the project did not use innovative technology and ONEE's personnel are highly experienced in operating and maintaining the project's infrastructure (ICR, paragraph 106). The financial risk is moderate. While the ICR noted that ONEE's financial position worsened since project appraisal, an important action plan to address the financial situation of the company was established by the Government in 2014 (ICR, paragraph 107). Despite the delay in implementing some of the commitments between ONEE and the Government, ONEE continues to show steady improvement in its financial performance, which turned positive in 2015. According to the this was made possible because of: (i) an increase in electricity tariffs, and (ii) a sharp decline in coal, gas and oil products prices since 2014. The increasing revenues and decreasing expenses continued through 2016, which helped ONEE regain profitability in 2017 (Morocco - Noor Solar Power Project Additional Financing (P164288), Project Paper 2018, paragraph 12). Demand side management (DSM) through efficient compact fluorescent lamps will continue as ONEE acquired a further 10 million CFLs and 2 million light-emitting diodes to distribute among its direct customers (ICR, paragraph 110). The Government is genuinely committed to major power sector reforms and to ensuring the financial viability of the industry. The political risk is low as Morocco has had a stable political environment, facilitating the implementation of major reforms in the energy sector. Social consensus on the reform program and institutional capacity are, however, needed for the sustained implementation of the reform program. There is a risk that recent power tariff increases and a return to an environment of high oil prices could lead the Government to backtrack on some reforms in order to contain any undesired social impacts. However, a sustained economic

growth and Government actions to shield low-income households from high-energy costs continue to mitigate political and social risks (ICR, paragraph 111).

a. Risk to Development Outcome Rating

Modest

8. Assessment of Bank Performance

a. Quality-at-Entry

The rationale and strategic sector context of the project was solid because the project was to support Morocco Energy Sector Development Policy Loan (DPL, P099618, 2007). The TA components of the project were intended to be complementary to actions undertaken under the DPL But most were dropped as part of the restructuring in October 2013 because they were judged to be "non-satisfactory activities" in the Project Paper for the Additional Financing (paragraph 13) The energy efficiency and renewable energy measures contemplated by the energy efficiency and renewable law approved by the Council of Government in 2007 (PAD, paragraph 7) complemented ONE'S demand side management program to moderate electricity demand growth.

The project addressed key priorities of the T&D network based on the analysis of ONEE's power sector expansion plans. Institutional issues were carefully considered and safeguards policies were adequately treated given project risk and other assumptions. Nevertheless, the ICR acknowledged that there was "a moderate shortcoming in the extent to which the World Bank prepared and appraised the operation without ensuring that a funding plan that covered total costs of the project was in place. The original PAD failed to address the issue of the important funding gap (almost 37 percent of total project cost) and only noted that the T&D component was part of a larger ONEE investment program while clearly stating that all infrastructure contracts included in the project would be fully financed by the World Bank" (paragraph 101).

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

According to the ICR the "World Bank team's supervision was thorough and proactive, especially on issues related to procurement and safeguards. The Bank carried out an average of two missions per year over the lifetime of the project with teams composed of technical and safeguards policy experts" (paragraph 102). Critical social safeguard issues were addressed, which were mainly identification and timely compensation of private landowners and beneficial communities of collective land. The World

Bank team had the appropriate skills, hired competent local experts, closely monitored the process of compensation, and provided advice and recommendation where and when needed (ICR, paragraph 105).

The World Bank team provided several trainings to address ONEE's unfamiliarity with some World Bank procedures over the duration of the project, in addition to the procurement training in the early stages of project preparation.

A midterm review was conducted in October 2010 when the project was handed over to a new Bank task team leader. Concerns over continued slow implementation progress and low disbursements were raised, and a project restructuring was identified as an inevitable requirement. The level two project restructuring dropped non-satisfactory activities in 2013, resulted in improvements in the progress toward the achievement of the PDO and the overall implementation progress of the project.

Quality of Supervision Rating
Satisfactory

Overall Bank Performance Rating
Moderately Satisfactory

9. Assessment of Borrower Performance

a. Government Performance
The ICR noted that the Moroccan Government supported the project throughout its implementation, such as securing the right-of-way and setting an acceptable compensation for private landowners and communities of collective land ownership. The Government was also a major driving force behind the tariff study, the results of which provided the necessary insight to craft a global tariff reform. Minor shortcomings include the substantial delay of the tariff study due to inter-ministerial delays (paragraph 107).

Government Performance Rating
Satisfactory

b. Implementing Agency Performance
The implementation agency, ONEE, was very responsive throughout the project's implementation. Despite the 2010 senior management overhaul, staff and management worked closely with the World Bank supervision team to ensure that project implementation was completed in time, within cost, and efficiently (ICR, paragraph 121). The PIU financial management and procurement functions were performed in a satisfactory manner and "provided quality technical management of the project implementation, prepared for missions, and complied with requests for supplementary information" (ICR, paragraph 124).

ONEE's environmental and social team carried out the necessary Environmental and Social Impact Assessment (ESIA) studies in accordance with the World Bank's requirements. Although the impacts were minor, the safeguards team did not consistently carry out follow-up of the actions agreed according to the Environmental and Social Management Plans and the reporting was inconsistent (ICR, paragraph 122). ONEE complied with the covenants in the Loan Agreement.

Implementing Agency Performance Rating
Satisfactory

Overall Borrower Performance Rating
Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design
The original M&E design had some shortcomings. As mentioned in the ICR, the PDO indicators selected at appraisal were: (a) transmission loss reduction in percentage; (b) reduced unserved energy in MWh; and (c) energy/power savings achieved owing to the use of CFLs in GWh and MW for peak power reduction. The ICR stated that "in general, the indicators were adequate to monitor progress toward the PDO". On the other hand, "the national transmission losses indicator was moderately relevant, as it pertained to an ambitious national generation and transmission plan (US$1 billion investment over five years), of which the project accounts for only a moderate portion on the transmission part" (paragraph 62). Also, it was not clear, however, whether the measurement of unserved energy applied only to areas in Southern Morocco or to the entire national network.

b. M&E Implementation
During implementation, transmission loss indicators were revised to more specifically measure each aspect of the PDO to make them more relevant to the project. The initial shortcoming of monitoring and evaluation (M&E) was partially corrected by introducing additional key indicators to better capture project's impact, namely (a) transmission lines constructed under the project and (b) regional electric transmission losses (ICR, Table 1), but in the event the measured transmission losses covered only part of the T&D that the project financed (details in the section 4 above). The Project Paper for the Additional Financing noted that the measurement of unserved energy would be based on technical interruptions. However, the ICR provided no data on these measurements.

ONEE was responsible for monitoring implementation progress. The ICR stated that ONEE had adequate M&E experience and that project activities were supported by a management information system. ONEE prepared progress reports, which were submitted to the Bank and, according to the ICR, met the Bank's requirements (paragraphs 65 and 67). ISRs almost always included progress data. Although there were minor errors in reporting of progress on PDOs in ISR number 9 and unclear data (e.g., unrealistically very

high CFL GWh savings (1,211 GWh compared with the target of 300 GWh) reported in ISR number 7 relative to savings reported in the other ISRs), important information on issues such as transmission efficiency and service reliability was not recorded.

c. M&E Utilization

According to the ICR ONEE's project progress reports were utilized as a monitoring tool. It also noted that ONEE regularly utilized the World Bank's supervision mission Aide Memoires, which incorporated information from the progress reports to review and update their implementation processes for this (and other) projects (paragraph 68). On the other hand it is not apparent from the ICR that the M&E system had any impact on strategic decisions by the project's management.

M&E Quality Rating

Modest

11. Other Issues

a. Safeguards

Environmental Safeguards

The project was classified as Category B under OP/BP 4.01 (Environmental Assessment) because the project did not pose major environmental risks. The main environmental impacts have been the layout of the proposed transmission lines. Some of the corridors proposed by ONEE pass very close to areas of ecological and general environmental significance, which triggered the World Bank Policy OP/BP 4.04 Natural Habitats. Appropriate safeguards documents were completed and disclosed, including (a) ESIA; (b) Environmental Management Plans (EMPs) and monitoring plans; (c) a Resettlement Policy Framework (RPF); and (d) a Resettlement Action Plan (RAP). According to the ICR "Initially during project implementation, safeguard compliance was not satisfactory primarily because of ONEE's (and their contractors') limited experience in implementing environmental safeguards requirements. However, compliance gradually improved because of the continued support and guidance by the Bank task team, and the final monitoring conducted at the end of the construction revealed that the project did not cause any significant environmental impacts. This is substantiated by the overall ISR's safeguards ratings: until January 2011, the ratings were satisfactory and were then downgraded to moderately unsatisfactory because of poor reporting quality on environmental safeguards and the delays in submitting the environmental impact assessments and monitoring reports. The ratings were upgraded in June 2012 when the quality of reports improved" (paragraph 58). The ICR did not state whether or not the project complied fully with environmental safeguards.

Social Safeguards

The operational policy OP 4.12 - Involuntary Resettlement was triggered. To address the social safeguards issues related to land acquisition and right-of-way necessary for the T&D component, an Resettlement Framework Policy Resettlement Action Plans was prepared for the project. Component-specific RAPs were prepared after a census survey of all affected people to determine those eligible for compensation. The World Bank safeguards specialists closely monitored the implementation of social safeguards measures and raised awareness of the safeguards issues by ONEE and contractors over the life of the project. RAPs were implemented for all transmission lines and substations. Compensation was paid for land acquisition, right-of-way, crop and other losses during the implementation of the transmission lines components. As for land acquisition and right-of-way, 95 percent of private landowners and 16 percent of collective land representatives were compensated by November 2015. Compensation was secured for the remaining 52 private landowners and 48 collective land users through an escrow account for an amount of around US$220,000 under a strong and efficient social safeguards plan by the project closing date. The ICR did not clarify whether or not the project complied with social safeguards policies.

b. Fiduciary Compliance

Procurement

All procurement was carried out in accordance with World Bank Guidelines and the Legal Agreement. Procurement ratings were satisfactory throughout except for initial moderately satisfactory ratings from February 2009 to November 2011. The ratings were downgraded due to the slow procurement pace caused by concerns raised by ONEE on the World Bank's procurement requirements. ONEE's procurement capacity was enhanced by World Bank support and trainings, which then led to an upgrade of the procurement rating in November 2011 (ICR, paragraph 69).

Financial Management

The project's financial management system was acceptable to the World Bank. With few exceptions, ONEE was regular in submitting the financial management reports and the audited reports to the World Bank (ICR, paragraph 76). During project implementation, issues resulting in slow disbursement were identified. Two main factors contributed to the problem: (a) delays in some associated infrastructures (power plants) and (b) a slow procurement payment process. The slow payment processing was noticed for the TA components. The delays were mainly due to a cautious approach by ONEE to ensure that all documents and studies were complete in every respect (ICR, paragraph 77). Financial covenants were complied with in all ISRs except ISR number 8.

c. Unintended impacts (Positive or Negative)

Not applicable.

d. Other

Not applicable.

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Moderately Satisfactory	Insufficient evidence to support the assessment of "substantial" efficacy of increased reliability of electricity supply..
Risk to Development Outcome	Modest	Modest	---
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Borrower Performance	Satisfactory	Satisfactory	---
Quality of ICR		Modest	---

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

The following three broadly applicable lessons summarized from the five presented in the ICR with some editing of the substance.

1. Ensure simplicity in project design. Simplicity of design made project restructuring, as in this project where components and subprojects were dropped and replaced by others with some shifts in the distribution of the project's funding among categories, easy leading to effective implementation.

2. Reliable development partnerships can drive investment projects to develop infrastructure but also reinforce a policy dialogue to enable policy reforms. ONEE and the World Bank maintained a good partnership throughout the project. The World Bank reinforced its status as a reliable partner to support technical assistance, which enabled important reforms in a sensitive sector. The strong complementarity between this operation and an earlier Development Policy Operations was an important aspect of the Bank's support of a Government program, and could even be considered as a model for a Program for Results series of operations.

3. A strong engagement with the client on social safeguards facilitates project implementation. Throughout supervision, the Bank team demonstrated a strong ability to mobilize ONEE's teams for social safeguards monitoring, by properly identifying and compensating all the impacted communities and private landowners. A dedicated social safeguards monitoring tool was jointly developed by the World Bank and ONEE and merits replication for similar projects in the future.

14. Assessment Recommended?

Yes

Please explain

Almost all the data used in the ICR to assess efficacy and efficiency were estimates rather than measured information, despite the considerable support to the Moroccan government from the Bank for power generation, including solar power. Given the absence of measured evidence on efficacy and efficiency there is some doubt about the accuracy of the outcome rating for this project and hence a follow up assessment is warranted.

15. Comments on Quality of ICR

The ICR provides a detailed overview of the project. It is generally aligned to the project development objective. The report follows the majority of the World Bank Operations Policy and Country Services (OPCS) ICR guidelines (2014 updates), tries to triangulate data to reach conclusions, and is focused on results. The quality of evidence and analysis was not always aligned with the conclusions in the ICR. For example, (a) there were no reasons given in the ICR on why data on transmission and distribution efficiency could not have been measured for at least one project line that was reinforced; (b) there was misinterpretation in the ICR's Data Sheet of the extent to which the reduction in unserved energy was achieved; and (c) there was inadequate documentation and explanation in the ICR's efficiency analysis. There were considerable gaps in the information about the project's implementation. For example, (a) there is no description of the project area; (b) there was no information in the ICR on the nature of the borrower's contribution such as in-kind or for the cost of transmission and distribution systems; and (c) Annex 1 table (a) on project costs was incomplete. Finally, there were originally two copies of the ICR with the same dates in Image Bank. One copy has been removed but the one that remains (dated May 29. 2016) has a gap in paragraph numbering between paragraphs 46 and 62 which raised questions about missing text. The paragraph references used in this ICR Review are those in the version that is currently in Image Bank.

a. Quality of ICR Rating
Modest