



1. Project Data

Project ID

P117407

Project Name

EG - Helwan South Power Project

Country

Egypt, Arab Republic of

Practice Area(Lead)

Energy & Extractives

L/C/TF Number(s)

IBRD-82780

Closing Date (Original)

30-Jun-2019

Total Project Cost (USD)

419,213,909.10

Bank Approval Date

27-Jun-2013

Closing Date (Actual)

30-Jun-2019

IBRD/IDA (USD)
Grants (USD)

Original Commitment

585,400,000.00

0.00

Revised Commitment

419,213,909.10

0.00

Actual

419,213,909.10

0.00

Prepared by
Ranga Rajan
Krishnamani
Reviewed by

Ihsan Kaler Hurcan

ICR Review Coordinator

Ramachandra Jammi

Group

IEGSD (Unit 4)

2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) as stated in the Loan Agreement (Schedule 1, page 6) and the Project Appraisal Document (PAD, page 15) was:

"To increase power generation capacity in an efficient manner within the Borrower's territory."



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

No

c. Will a split evaluation be undertaken?

No

d. Components

There were two components (PAD, pages 45-46):

1. The Helwan South Power Plant. The appraisal estimate was US\$2,168.9 million (of this, IBRD contribution was US\$503.8 million). The actual cost was US\$1,294.4 million. The actual cost was lower than appraised due mainly to the overestimation of the project cost, which was based on local prices.

This component planned to finance the construction of a 3x650 Megawatt (MW) supercritical steam technology power plant at Helwan South fired by natural gas as the primary fuel, and heavy fuel oil as a back-up, and consisting of: (i) three identical 650 - generating units, each comprised of a steam generator, a steam turbine, a condenser, an electricity generator, process and cooling water supply systems, an air and flue gas system, fuel supply and other auxiliary systems; and, (ii) a distributed control system and a switchyard with step-up transformers. This component also planned to finance the costs of engineering and project management services, and an associated environmental and social mitigation plan.

2. Gas pipelines. The estimated cost at appraisal was US\$235.5 million (of this, IBRD contribution was US\$81.6 million). The actual cost was US\$25.9 million. The actual cost was lower than appraised due to changes in project scope (discussed in section 2e).

This component planned to finance construction of two pipelines capable of supplying about 12.5 million cubic meters of gas per day to the power plant described above. Activities in this component included: (i) construction of a gas pipeline of about 93 kilometers (km) in length to connect the Helwan South Power plant site near the town of Atfeeh to the existing gas pipeline network at the compressor station at Dashour; (ii) construction of a gas pipeline of about 65 km in length, from the Abu Hommos compressor station to the El Nubaria compressor station; (iii) pipeline inspection and cleaning facilities for on-line inspection vehicles and Supervisory Control and Data Acquisition (SCADA) facilities; and (iv) associated environmental and social mitigation plans.

This project did not specifically include Technical Assistance (TA) activities. However, this was deemed to be not necessary in view of the TA activities co-financed by other donors, counterpart funding, and parallel TA activities under other Bank financed projects.

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

Project cost. The estimated cost at appraisal was US\$2,404.4 million. The actual cost was US\$1,321.3 million. The actual cost was about 56% of the estimated cost due to the sizeable overestimation of project cost at appraisal.

Project financing. The project was financed by an IBRD loan of US\$585.4 million. The revised estimate of the loan was US\$419.2 million. The revisions were due to lower than expected costs and exchange rate



changes during implementation. About US\$166.2 million was unutilized and the amount disbursed at closure was US\$419.2 million. There was co-financing from the following agencies.

- The Arab Fund for Economic and Social Development: The appraisal estimate was US\$193.5 million. The amount disbursed was US\$139.3 million.
- The Islamic Development Bank: The appraisal estimate was US\$449.9 million. The amount disbursed was US\$383.8 million.
- The Kuwait Fund for Economic Development: The appraisal estimate was US\$213.8 million. The amount disbursed was US\$172.2 million. and,
- The Organization of Exporting Countries (OPEC) Fund for Economic Development: The appraisal estimate was US\$40.0 million. The amount disbursed was US\$41.5 million.

Borrower contribution. The borrower contribution was estimated at US\$921.8 million at appraisal. Their actual contribution was US\$165.2 million. The ICR (page 38) notes that detailed cost breakdowns and savings on Borrower's finance contracts were not available when the project closed.

Dates. The project was approved on June 27, 2013, became effective about ten months later on April 30, 2014, and closed as scheduled on June 30, 2019.

Other changes. The following changes were made through a Level 2 restructuring on June 2, 2016.

- The scope of the gas pipeline component was modified following the discovery of gas in Egypt. This change entailed dropping the 93 km of gas pipeline that was to be connected to the power plant, as this activity was no longer necessary since gas could be transmitted to the plant through the nearby pipeline that was 1.2 km away.
- The construction of a gas pipeline of about 70 km in length from the gas receiving facility at Raven gas facility to the Western Desert Gas complex (WDGC) in Alexandria was added to strengthen the gas transmission network.
- The results framework was modified, and one PDO indicator (km of gas pipelines) was added.

3. Relevance of Objectives

Rationale

Country context. Following the political events in January 2011, economic growth slowed significantly from 7% in 2008 to 2% in 2012. With the low growth rate, public and private investments including power sector investments declined. As sector investments did not keep pace with demand (with peak demand increasing from 15,678 MW in 2005, to 21,330 MW in 2009, and 24,400 MW in 2014), load shedding and supply interruptions were common. This led to citizen dissatisfaction on the one hand and impacted on economic growth on the other hand. Given that electricity demand was expected to continue in the foreseeable future, power sector investments to meet the peak demand were relevant at appraisal. The PDO of increasing generation capacity was less relevant at project closure due to the substantial increase in capacity "from about 25.0 Gigawatts (GW) in 2010 to about 55.0 GW in 2018 leading to a reserve margin of over 25 Megawatt (MW) compared to a peak load of 30.8 GW in 2018" (ICR, paragraph 22). The



construction of more efficient combined cycle gas turbine power plants to utilize the recently discovered natural gas reserves was the main reason for the large increase in installed generation capacity.

Government strategy. At appraisal, the Egypt Electricity Holding Company's (EEHC) Five Year Plan (FYP) for 2012-2017 forecast growth of peak electricity demand at 6% per year, and that 11,000 MW of additional capacity was required to meet this demand. The FYP identified that the capacity was to be increased through: (i) Combined-Cycle Gas Turbines (CCGT) using natural gas; and, (ii) steam plants (through supercritical plants, capable of using either natural gas or heavy fuel oil). The government's priorities regarding the sector, however, changed when the project closed. Having achieved sufficient power generation capacity and following the discovery of gas, the government's focus shifted from installing capacity to increasing energy security through renewable energy and other primary energy resources, such as coal. The government's Integrated Sustainable Energy Strategy to 2035, which was approved by the Cabinet in 2016, envisages diversification of the country's electricity generation mix to include coal, nuclear, and renewable energy.

Bank strategy. The PDO was well-aligned with the Country Partnership Framework (CPF) for 2015-2019. The Focus Area two of the CPF identified the need for "Improving opportunities for private sector job creation " by increasing energy generation capacity and improving energy efficiency. The Performance and Learning Review (PLR) of the CPF for 2015 - 2019 extended the CPF period to 2021. The CPF PLR does not mention additions to conventional generation capacity, but noted that "outcomes on conventional and renewable power generation capacity had been achieved" in Egypt to which the project contributed.

Bank prior experience. The Bank has had a long history of engagement with Egypt on the energy sector through both investments and sector reforms. Since 2006, the Bank financed six energy investment projects in renewable and conventional power generation, supporting wind power development, and gas transmission and distribution. Given the conditions at appraisal and the institutional capacity of the project implementing entity, the project objective was adequately challenging.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase power generation capacity in an efficient manner within the Borrower's territory.

Rationale



Theory of change. The causal links between project activities, outputs and outcomes were logical, and the outcomes were measurable. Construction of a supercritical power plant that could be fired by natural gas as the primary fuel and heavy fuel oil as a backup, and the construction of a transmission line that was necessary for evacuating power from the power plant was aimed at increasing generation capacity. Building a gas pipeline for connecting the power plant and a gas pipeline from the gas receiving facility at Raven to the Western Desert Gas complex in Alexandria was likely to strengthen the gas grid. Regarding the efficiency aspect, although the supercritical plant with a backup was relatively costlier than constructing CCGTs, which can only use natural gas, there were other advantages of the supercritical plant that ensured greater reliability (such as dual fuel hedge against natural gas supply constraints, lower maintenance cost, and system stability due to the plant's ability to serve both base load and intermediate load). The combination of these activities was likely to improve delivery of electricity services to households and industries and to the long term development outcome of increasing welfare of the population.

Outputs (ICR, pages 12-13 and pages 31-35).

- The power plant was constructed as targeted. When the project closed, the three generating units were synchronized (meaning they could provide power to the system).
- The project aimed at constructing a total of 71.2 km gas pipeline: (i) 1.2 km of gas line connecting the power plant; and (ii) 70 km of line for strengthening the gas supply system. While the former activity was completed, the latter activity was ongoing when the project completed. This activity is expected to be completed by the end of 2020. The ICR (page 13) notes that the commissioning of the power plant was not impacted by the ongoing construction activity although its completion was expected to help the long-run sustainability of the power plant (as the plant would be able to get the requisite natural gas supply for its operations).

Outcomes

- The conventional generation capacity of the power plant increased to 2010 MW. This represented a 3% increase relative to the target of 1950 MW.
- The estimates of the expected annual net generation capacity of the plant increased to 13,860 Gigawatt Hours (GWh), exceeding the target of 13,447 GWh. The ICR (paragraph 27) notes that the three generating units were in commercial operation in 2019. According to the information provided subsequently by the team, the power plant generated 6,226 GWh of electricity between October 2019 and September 2020 (with a monthly average of 522.20 GWh). The plant operated at an average of 35.6% capacity, slightly short of the target of 40%. The team clarified that this shortfall was due to the adverse impact of COVID -19 on electricity demand and economic growth (especially in the tourism sector).
- According to the clarifications provided by the team, the government's plans for generating electricity from coal or nuclear sources have been given a low priority, and new generation capacity is expected to increasingly come from renewable sources and the one combined plant. This is likely to increase the utilization of capacity of the plant.
- The constructed power plant was 42% thermally efficient at project closure. This exceeded the target of 40%.

The supercritical power plant was constructed to increase generation capacity as targeted. The information provided by the team provides adequate evidence of the increase in generation capacity by the plant. Further, the utilization is likely to increase, given the changing priorities of the government (away from



coal and towards renewable sources and the one combined cycle plant). Therefore, the efficacy of the project objective is rated as substantial.

Rating
Substantial

OVERALL EFFICACY

Rationale

The supercritical power plant was constructed to increase generation capacity as targeted. In view of the increase in generation capacity of the plant, the efficacy is rated as substantial.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic analysis. An economic analysis was conducted using comparable methodology for the activity associated with construction of the power plant. This activity accounted for 72% of the appraisal estimate and 98% of the actual cost. The ICR (page 41) notes that, as there was no wholesale market for electricity in Egypt, and retail prices were set by the government usually below cost recovery, the consumers willingness to pay was used as the measure for deriving the value of electricity based on past consumption and prices. The Net Present Value (NPV) at 10% discount rate at closure was US\$7,435 million compared to the NPV of US\$5,270 million at appraisal. The ex-post Economic Rate of Return (ERR) was 26% compared to the ex-ante ERR of 20%. The ex-post EIRR was higher due to the lower actual cost caused by a combination of factors including decrease in global power equipment cost, competitive bidding, and exchange rate changes during implementation. ERR was also calculated at closure for activities associated with transmission investments. With transmission investments, the ex post ERR dropped slightly from 26% to 25.5%.

The consumers' willingness to pay was also computed using two other approaches at closure. The first approach that was used in a prior Bank-financed project (Ain Sokhna Project) derived the measure of willingness to pay from the cost of diesel generation. This approach assumes that the alternative to power from large power plants was generation from diesel generators, and that consumers would not be willing to pay more for electricity from the large plant than the price they would pay for electricity from diesel generators. The NPV using this approach was US\$5,361 million and the ERR was 32%. The second approach that was used in another Bank-financed project (Giza North Project) utilized a demand function to derive the consumers willingness to pay. The NPV using this approach was US\$1,104 million and the ERR was 15%.



The EIRRs were further calculated by the team, on the basis of the actual electricity generated by the plant using the three approaches. These figures confirmed the figures provided in the ICR. The EIRRs were significantly above the opportunity cost of capital in Egypt of 10%, and the NPVs were positive.

Administrative and operational Issues. The project was implemented within the project timeframe. Advance procurement saved about a year and half of implementation period compared to the time it would have taken if the bidding process had been initiated after project effectiveness. There were some operational shortcomings. The project which was approved on June 27, 2013, became effective after 10 months on April 30, 2016. According to the clarifications provided by the team, these delays were mainly due the major political transition and election in May of 2014. There were delays in preparation of the Resettlement Action Plan with respect to the project activity of the construction of the Raven - Western Desert Gas Complex gas pipeline, due to the discovery of the new gas fields. These delays however, did not significantly impact implementation as the project closed as scheduled.

In sum, efficiency is rated as substantial, given the economic analysis of the project, and relatively few administrative and operational shortcomings during implementation.

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	✓	20.00	72.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	26.00	98.00 <input type="checkbox"/> Not Applicable

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

6. Outcome

Relevance of the PDO is rated as Substantial. The efficacy of the achievement of the objective to increase power generation capacity in an efficient manner is rated as Substantial. Efficiency is rated as Substantial. Overall outcome is rated as Satisfactory.

a. Outcome Rating

Satisfactory

7. Risk to Development Outcome



Financial risk. Although the government has been raising electricity tariffs, they do not fully cover costs to date. Given this, there is a risk that the plant's performance could be undermined by the power plant's inability to generate enough revenue for meeting operational costs.

Technical risk. There is the risk that the Helwan South supercritical plant may not be fully dispatched because (i) the new CCGT power plants recently commissioned by the government are more energy efficient with lower operating costs, they, therefore, could take precedence in power plant merit dispatch; and (ii) the use of renewable energy, given the country's extensive solar and wind resources, has been increasing. This risk is particularly so, given that Egypt has a much higher installed generation capacity now.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project design aimed at addressing the need for meeting peak electricity demand by increasing capacity. The project was prepared based on the experience from prior Bank-financed energy projects in Egypt. The project was prepared in close collaboration with donors providing co-financing for the project. Several risks were identified at appraisal including substantial risks associated with capacities of the implementing agencies, and availability of natural gas supplies (the primary fuel for the plant). Mitigation measures included training the staff of the implementing agencies and having a backup of heavy fuel oil for the plant. The implementation arrangements were appropriate as the implementing agencies, i.e., the Egyptian Electricity Holding Company (EEHC) and the Upper Egypt Electricity Holding Company (UEEPC), were familiar with Bank procedures (PAD, paragraph 67). Appropriate arrangements were made at appraisal for safeguards and fiduciary compliance (discussed in section 10).

There were some shortcomings. The project cost was significantly overestimated, with the actual cost far lower than the appraisal estimate, which was based on local prices rather than international prices. This contributed to underutilization of the loan.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

Supervision missions were held twice a year as per the norm. The continuity of leadership was maintained with two task team leaders over the project lifetime. The location of the specialists (environmental, social, fiduciary specialists and technical specialists) in Cairo aided in safeguards and fiduciary compliance (discussed in section 10). Corrective actions were taken by the team to address emerging issues during implementation. For instance, the ICR (paragraph 62) notes that when the M&E information showed that the project was falling behind schedule during the first two years of implementation, the team took the required action of agreeing on an action plan with the UEEPC. This aided in acceleration of implementation since then. The ICR (paragraph 60) notes that the Implementation



Status Results Reports were prepared twice a year and accompanied by more detailed information on aspects of the project. This aided in M&E implementation (discussed in section 9). The Mid-Term Review (MTR) was conducted as scheduled in the last quarter of October 2017 to assess project performance.

There were moderate shortcomings. The supervision team underestimated the challenges on activities associated with the construction of the Raven-Western Desert Gas Complex gas line by GASCO. There were significant delays in preparing the Resettlement Action Plan (RAP) for this activity, and the RAP was only prepared after the project closed. Since this activity has not been completed to date, this necessitated continued bank supervision even after the project closed.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The two key outcome indicators - the annual net electricity generated by the plant and the minimum thermal conversion efficiency - were appropriate and measurable. The targets for these indicators were clearly specified at appraisal. There was no indicator relating to the construction of the transmission line and substation, although this was an associated facility to evacuate the power from the power plant. According to the clarifications provided by the team, these indicators were included in the Ain Sokhna project, under which the substation and transmission lines were supervised and financed.

b. M&E Implementation

The EEHC, the UEEPC and GASCO were responsible for monitoring project performance using their own systems. The ICR (paragraph 60) notes that M&E implementation proceeded smoothly. The Implementation Status Results reports, which were produced twice a year, provided the status of the indicators. The Mid-Term Review was held as scheduled to track implementation progress.

The important shortcoming in the M&E implementation was that the actual value of the indicator measuring the amount of electricity generated by the power plant was an estimate. When the ICR was finalized, the power plant must already have been operational for at least six months. The generation amount should have been provided as evidence for the achievement of the PDO. According to the clarifications provided by the team, the data was not available and the suggested six months would be insufficient to estimate an average annual capacity utilization factor, given the seasonal variations (for example, the first six months (October 19 - March 2020) would have excluded the summer peak demand).



c. M&E Utilization

The ICR (paragraph 62) notes that the M&E information was reported regularly to project management and used for discussing project progress with EEHC, UEEPC and GASCO. When the M&E information showed that the project was falling behind schedule (as it was during the first two years of the project), corrective action was taken to address the implementation issues. The M&E information was used to take necessary actions to resolve issues.

In sum, given the additional clarifications provided by the team on M&E on design and implementation, overall M&E is rated as substantial.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was classified as a Category A (Full Assessment) project under the World Bank safeguard policies. Three safeguard policies were triggered at appraisal: Environmental Assessment (OP/BP 4.01), Involuntary Resettlement (OP/BP 4.12), and Projects on International Waterways (OP/BP 4.37) (PAD, page viii).

Environmental Assessment. The PAD (paragraph 107) noted that the plant site was mainly desert with no settlements nearby. The Environmental and Social Impact Assessments (ESIA) for the plant and the gas pipelines were prepared and publicly disclosed at appraisal (PAD, paragraph 48). An ESIA for the new pipeline (Raven - Western Desert Gas Complex) was prepared and publicly disclosed when the project was restructured in 2016 (ICR, paragraph 64). The ICR (page 22) notes that there was environmental compliance. The environmental parameters from the plant were monitored against the Environmental and Social Management Plan (ESMP) requirements. Concerns raised by the Bank team regarding the management of hazardous wastes and occupational safety issues were addressed.

Involuntary Resettlement. This safeguard was triggered as temporary land use and land acquisition were envisioned at appraisal. A Resettlement Policy Framework (RPF) was prepared and publicly disclosed at appraisal. The ICR (paragraph 64) reports that a Resettlement Action Plan (RAP) for the Raven - WDGC pipeline was prepared and publicly disclosed in November 2019.

Land for power plant. The ICR (page 21) reported that the 90 feddan plot of land (about 38 hectares) required for building the plant was state-owned desert land. This land was transferred to the UEEPC in February 2010. This site had about 24 feddans of land used by families with no land titles. Adequate compensation was made by UEEPC to the families. An additional 15 feddans of land between the plant and the Nile river was required to build the water intake and discharge structure. These feddans of land were purchased through negotiated settlements between the land owners and UEEPC at a price higher than the prevailing market price. The UEEPC also agreed to provide six jobs per feddan to land



owners. The ICR notes that UEEPC offered 163 jobs. This included (i) 90 jobs to land owning families, of which 86 families were employed and four pending eligibility considerations; and (ii) 73 jobs to qualified members of non land-owning families.

Land for gas pipelines. The 1.2 km connector line to the power plant was located in an empty unoccupied desert area. No Resettlement Action Plan was prepared for the interconnection line as the pressure reduction station was located within the boundaries of the power plant.

The Raven - Western Desert Gas Complex pipeline encompassed agricultural land, wood land, and river sections with fishing activity. The pipeline construction was expected to result in temporary economic displacement. A RAP was prepared in October 2017 after the project closed. Land owners were to be compensated for the affected assets. This pipeline was not complete when the project closed. The ICR notes that the Bank team was to continue regular supervision until this activity has been completed.

Projects on International Waterways. The PAD (paragraph 115) reports that the Bank notified the Nile River riparian states of the project on October 13, 2011, and requested that their comments to be provided to the Bank by November 14, 2011. No comments were received from any of the riparian states during this period, or since then. On the basis of the Bank team's assessment that the project activities would not cause appreciable harm to other riparian states, the Middle East and North Africa (MNA) Regional Vice President approved preparation of the project on February 2, 2012.

b. Fiduciary Compliance

Financial management. A financial management conducted at appraisal concluded that the financial management arrangements of the implementing agencies (UEEPC and GASCO) were satisfactory. The residual financial risk, i.e., financial risk after mitigation measures, were deemed to be moderate at appraisal (PAD, paragraph 56). The ICR (paragraph 66) notes that financial management was satisfactory throughout implementation. The project accounts were audited by an independent auditor, but some audits were submitted late. The ICR provides no information on whether the audits were unqualified.

Procurement. An assessment of the procurement capacity of the implementing agencies conducted at appraisal concluded that both UEEPC and GASCO had adequate experience for addressing procurement issues (PAD, page 24). The procurement risk was rated as moderate at appraisal (PAD, paragraph 103). The ICR (paragraph 67) reports that procurement management was satisfactory throughout implementation.

c. Unintended impacts (Positive or Negative)

None.

d. Other



None.

11. Ratings

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

12. Lessons

The ICR draws the following main lesson from the experience of implementing this project with some adaptation of language.

1. Using country specific historical data in benchmarking can lead to overestimation of project costs and under-utilization of project funds. The actual plant cost was about 40 percent lower than the appraisal estimate. While other factors, such as competitive bidding and exchange rate changes during implementation, were at play as well, the lesson is that the appraisal estimate should be based not only on country historical data, but also benchmarked on global market prices to avoid under-utilization of project funds. This is especially so, given that cost overestimation has been a recurring issue in similar energy projects in Egypt, such as in the Ain Sokhna Power Project and the Wind Power Development project.

The ICR draws the following lesson from this project.

1. Strict technical designs can adversely affect the development impact of the project, if conditions fundamentally change. Given the country context at appraisal, the power plant was designed to run on both natural gas and heavy fuel oil. During project implementation, the discovery of large proven natural gas reserves resulted in a rapid increase in the construction of more efficient combined cycle gas turbine power plants. The technical design of the Helwan South Power Plant could not be revised under these new conditions. Egypt has now a large surplus of generation capacity, and there is a risk that the power plant would not be used at the estimated capacity, resulting in a lower than expected development impact.

13. Assessment Recommended?

No



14. Comments on Quality of ICR

The ICR provides a comprehensive overview of the project and it mostly follows Bank guidance. The narrative is candid and internally consistent, but it does not adequately support the efficacy and efficiency ratings. The evidence base is not sound to support the achievements of the project and the evidence is insufficient: the achievement of the project objective is based on the expected generation amounts rather than actual generation amounts. Accordingly, the economic benefits of the project are calculated taking the expected generation amounts into consideration, which may not materialize if the power plant is underutilized. This is a substantial risk, given the massive increase in CCGT capacity - in 2018 the lower-cost CCGT capacity increased by 14.4 GW, whereas the higher-cost capacity created under the project is 2.1 GW. The ICR does not provide evidence to show that the power plant is generating electricity, and, if it is generating any electricity, at what capacity factor. Regarding what occurred as a consequence of the project's intervention, the focus is on outputs (that is, construction of the power plant), rather than the outcomes (that is, the amount of electricity generated by the power plant).

The safeguards section in the ICR provides an adequate explanation of the implementation of safeguards policies in detail for a category A project, but there is no information in the ICR about the Projects on International Waterways safeguard policy that was triggered at appraisal. The discussion of financial management is brief, and there is no mention of whether the audits were unqualified. The section on quality of supervision does not include an evaluative discussion on the project team's focus on the project's development impact. The discussion in section V. Lessons and Recommendations is useful, but it is mostly about findings rather than lessons. Lastly, the ICR was substantially longer (25 pages), than the recommended in the guidelines (15 pages).

a. Quality of ICR Rating

Modest