

Probable Date of Board Presentation  
Not Applicable

FOR INFORMATION

## MEMORANDUM

**TO : THE BOARD OF DIRECTORS**

**FROM : Cecilia AKINTOMIDE**  
**Secretary General**

**SUBJECT: EGYPT – ABU QIR 1300 MW THERMAL POWER PLANT**  
**PROJECT COMPLETION REPORT \***

Please find attached the above-mentioned Report.

**Attach.**

**Cc: The President**

**\*Questions relating to this document may be addressed to:**

|                       |                         |               |                       |
|-----------------------|-------------------------|---------------|-----------------------|
| <b>Mr. J. KOLSTER</b> | <b>Director</b>         | <b>ORNA</b>   | <b>Extension 2065</b> |
| <b>Mr. A. RUGAMBA</b> | <b>Director</b>         | <b>ONEC</b>   | <b>Extension 2025</b> |
| <b>Mr. E. NEGASH</b>  | <b>Division Manager</b> | <b>ONEC.2</b> | <b>Extension 3931</b> |

**AFRICAN DEVELOPMENT BANK**



**ARAB REPUBLIC OF EGYPT**

**ABU QIR 1300 MW THERMAL POWER PLANT**

**PROJECT COMPLETION REPORT  
(PCR)**

**OSAN DEPARTMENT**

December 2014

# PROJECT COMPLETION REPORT FOR PUBLIC SECTOR OPERATIONS (PCR)



AFRICAN  
DEVELOPMENT  
BANK GROUP

## I BASIC DATA

### A Report data

|                    |  |                     |                |
|--------------------|--|---------------------|----------------|
| <b>Report date</b> | Date of report:                        | August 2014         |                |
|                    | Mission date <i>(if field mission)</i> | From: 27 April 2014 | To: 8 May 2014 |

### B Responsible Bank staff

| Positions                     | At approval         | At completion  |
|-------------------------------|---------------------|--|
| <b>Regional Director</b>      | Mr. K. Gadio        | Mr. Jacob Kolster  |
| <b>Country Manager</b>        | Mr. Oumar Aw        | Ms. Leila Mokadem  |
| <b>Sector Director</b>        | Mr. G. MBESHERUBUSA | Mr. Alex Rugamba   |
| <b>Sector Manager</b>         | Mr. A. T. DIALLO    | Mr. Engedasew Negash   |
| <b>Task Manager</b>           | Mr. E. NZABANITA    | Mr. Khaled El-Askari   |
| <b>Alternate Task Manager</b> |                     | Ms. Tanja Faller   |
| <b>PCR Team Leader</b>        |                     | Mr. Khaled El-Askari   |
| <b>PCR Team Members</b>       |                     | Ms. Tanja Faller, Ms. Kelello Ntoampe, Mr. Ayman Algindy & Ms. Amira Sobhi |

### C Project data

|  |   |  |
|--|---|--|
| <b>Project name: Abu Qir 1300 MW Thermal Power Plant</b>   |   |  |
| <b>Project code: P-EG-FAA-013</b>  | <b>Instrument number(s): ADB Loan 2000130002630</b>               |  |
| <b>Project type: Investment Project</b>  | <b>Sector: Energy/Power</b>                                       |  |
| <b>Country: Arab Republic of Egypt</b>   | <b>Environmental categorization (1-3): 1</b>                      |  |
| <b>Processing milestones – Bank approved financing only (add/delete rows depending on the number of financing sources)</b> | <b>Key Events (Bank approved financing only)</b>                  | <b>Disbursement and closing dates (Bank approved financing only)</b> |
| <b>Financing source/ instrument1: ADB Loan Euro 242.0 million</b>  | <b>Financing source/ instrument1: ADB Loan Euro 242.0 million</b> | <b>Financing source/ instrument1: ADB Loan Euro 242.0 million</b>    |
| Date approved: 14 Nov 2007   | Cancelled amounts: None   | Original disbursement deadline: 31 Dec 2013                          |
| Date signed: 15 Jan 2008   | Supplementary financing: None                                     | Original closing date: 31 Dec 2013                                   |
| Date of entry into force: 5 Sep 2008   | Restructuring <i>(specify date &amp; amount involved)</i> : None  | Revised <i>(if applicable)</i> disbursement deadline: 31 Dec 2014    |
| Date effective for 1st disbursement: 27 Oct 2008   | Extensions <i>(specify dates)</i> : 31 Dec 2014                   | Revised <i>(if applicable)</i> closing date: 31 Dec 2014             |
| Date of actual 1st disbursement: 4 Feb 2009  |   |  |

| Financing source/instrument (add/delete rows depending on the number of financing sources):   | Disbursed amount (UA million): | Percentage disbursed (%): | Undisbursed amount (UA million): | Percentage undisbursed (%): |
|---|--------------------------------|---------------------------|----------------------------------|-----------------------------|
| Financing source/ instrument1: ADB Loan   | 187.78                         | 89%                       | 23.66                            | 11%                         |
| Government: WDEPC   | 382.39                         | 99%                       | 3.10                             | 1%                          |
| Other co-financiers: IsDB   | 103.66                         | 100%                      | 0.00                             | 0%                          |
| Other co-financiers: AFESD  | 131.27                         | 93%                       | 9.38                             | 7%                          |
| Other co-financiers: KFAED  | 121.89                         | 87%                       | 18.75                            | 13%                         |
| Other co-financiers: OPEC   | 19.59                          | 100%                      | 0.00                             | 0%                          |
| <b>TOTAL</b>  | <b>946.59</b>                  | <b>95%</b>                | <b>54.89</b>                     | <b>5%</b>                   |
| Financing source/instrument (add/delete rows depending on the number of financing sources):   | Committed amount (UA million): | Percentage committed (%): | Uncommitted amount (UA million): | Percentage uncommitted (%): |
| Financing source/ instrument1: ADB Loan   | 211.43                         | 100%                      | 0.00                             | 0%                          |
| Government: WDEPC   | 385.49                         | 100%                      | 0.00                             | 0%                          |
| Other co-financiers: IsDB   | 103.66                         | 100%                      | 0.00                             | 0%                          |
| Other co-financiers: AFESD  | 140.65                         | 100%                      | 0.00                             | 0%                          |
| Other co-financiers: KFAED  | 140.65                         | 100%                      | 0.00                             | 0%                          |
| Other co-financiers: OPEC   | 19.59                          | 100%                      | 0.00                             | 0%                          |
| <b>TOTAL</b>  | <b>1,001.48</b>                | <b>100%</b>               | <b>0.00</b>                      | <b>0%</b>                   |
| Co-financiers and other external partners: Islamic Development Bank (IsDB), Arab Fund for Economic and Social Development (AFESD), Kuwait Fund for Arab Economic Development (KFAED), and OPEC Fund for International Development (OFID). |                                |                           |                                  |                             |
| Executing and implementing agency (ies): Egyptian Electricity Holding Company (EEHC)/West Delta Electricity Production Company (WDEPC)  |                                |                           |                                  |                             |

## D Management review and comments

| Report reviewed by                           | Name | Date reviewed | Comments |
|--|------|---------------|----------|
| Country Manager                              |      |               |          |
| Sector Manager                               |      |               |          |
| Regional Director (as chair of Country Team) |      |               |          |
| Sector Director                              |      |               |          |

## II Project performance assessment

### A Relevance

#### 1) Relevance of project development objective

| Rating* | Narrative assessment (max 250 words)  |
|---------|---|
| 4       | The project is fully aligned with both the Bank's CSP for Egypt (2007 – 2012), which aimed at supporting infrastructure, including energy, for the overall objective of fostering a private-sector led growth. Government's development strategy was to support socio-economic development in Egypt by making available reliable and affordable power supply for all the economic sectors and social services throughout the country. Accordingly, the national power utility, EEHC, prepared a power generation expansion plan for 2007 – 2011 comprising the construction of nine new thermal power plants, including Abu Qir, for a total capacity of 7000 MW. With a total capacity of 1300 MW, the Abu Qir power plant project represents 18.6% of the targeted capacity increase in that expansion plan. Demand for electricity has |

been growing steadily in Egypt at about 7% per year as a result of economic and demographic growths. With universal access to electricity throughout the country through the national grid, electrification plays a significant role in supporting socio-economic development and service delivery. The primary electricity consumers in Egypt are the industrial, residential and commercial sectors, public services and lighting. In addition, the government is also trying to gradually replace the use of liquid fossil fuels like diesel in the agricultural sector for water pumping with electricity. Nonetheless, it is worth noting that Egypt is currently suffering from electricity shortages, especially in the high demand summer seasons, which is negatively impacting the various consumer sectors. The power shortages vary between 2000 – 3000 MW. The Abu Qir project played a significant role in closing part of this supply gap when it started commercial operation in Dec 2012.

\* For all ratings in the PCR use the following scale: 4 (Highly satisfactory), 3 (Satisfactory), 2 (Unsatisfactory), 1 (Highly unsatisfactory)

## 2) Relevance of project design

| Rating* | Narrative assessment (max 250 words)   |
|---------|--|
| 4       | <p>The project design was highly relevant. The design took into consideration the technical complexity of the project which involved the construction of two large power generation units 650 MW each, as well as the financing complexity as it involved five (05) international financing institutions, in addition to the government (WDEPC). In order to ensure strong coordination and harmonisation of the various project components, contractors, and financiers; a strong project implementation and management team comprising experienced staff from WDEPC/EEHC and a leading engineering consultant were put in place to effectively manage the project. The financing plan was designed such that most of the international financiers were parallel financing different project components in order to avoid issues that may arise from for example the need for cross effectiveness, double procurement procedures, etc. The only exception to this was the Bank and IsDB co-financing the largest component of the project (the two steam turbine generators) because the two turbines had to be procured through one large contract. Nonetheless, because the two units were identical, the Bank and IsDB financed one unit each under this contract, making the follow-up on contract implementation and disbursement process by each institution relatively simple.</p> <p>The transmission line required to connect the power plant to the grid was designed as separate, but related, project because it was implemented and financed by a different agency, the Transmission Company. However, throughout the implementation of the Abu Qir project, the project management team and consultant followed up closely on the progress of the transmission line. Furthermore, EEHC, the parent company of both WDEPC and the Transmission Company, played an important role in ensuring coordination between the two. As a result, the line was ready in time to serve the power plant. In addition, the design of the Abu Qir power plant was also connected through a tie-transformer to the existing old Abu Qir power plant as an alternative route for connecting the new project to the grid.</p> |

## 3) Lessons learned related to relevance

| Key issues (max 5, add rows as needed) | Lessons learned   | Target audience                              |
|--|---|--|
| Project financing plan                 | The design of the project ensured separation between the financing sources to the extent possible in order to avoid possible complications in cross effectiveness, double procurement procedures, etc.  | Project developers<br>Financing institutions |
| Bank flexibility                       | The Bank exercised great flexibility in accepting to front load some payments under the contract that was co-financed with the IsDB to compensate for the delay in the readiness of the IsDB resources. This was a milestone action by the Bank that critically helped the project start without significant delay. | Financing institutions                       |

## B Effectiveness

### 1. Progress towards the project's development objective (project purpose)

| Comments  |
|---|
| <p><i>Provide a brief description of the Project (components) and the context in which it was designed and implemented. State the project development objective (usually the project purpose as set out in the RLF) and assess progress. Unanticipated outcomes should also be accounted for, as well as specific reference of gender equality in the project. The consistency of the assumptions that link the different levels of the results chain in the RLF should also be considered. Indicative max length: 400 words.</i></p> |

The objective of the project was to support the development strategy of the Government of Egypt and the energy sector goal of supporting economic growth and social welfare by making available reliable and affordable power supply to the various consumers country wide. The purpose of the Abu Qir project was to increase the installed power generation capacity in Egypt by 1300 MW, to become available to the national grid in 2012, thus increasing the grid capacity by 4%. The project was part of the 2007 – 2012 power sector investment plan to increase power supply in order to accommodate the expected growth in the demand.

The project main components comprised: (A) Civil Works; (B) Supply and Installation of Equipment: (B.1) Steam Turbine Generators & Condensers, (B.2) Steam Generators & Auxiliaries, (B.3) Mechanical Equipment/Pipe Installation, (B.4) Electrical Equipment/Instrument & Control Installation, and (B.5) 500 kV Switchyard; (C) Environmental Monitoring; (D) Project Management; and (E) Wrap-up Insurance.

## 2. Outcome reporting

| Outcome indicators (as per RLF; add more rows as needed) | Baseline value (Year) (A)   | Most recent value (B) | End target (C) (expected value at project completion) | Progress towards target (% realized) [(B-A)/(C-A)] | Narrative assessment (indicative max length: 50 words per outcome)  | Core Sector Indicator (Yes/No) |
|--|---|-----------------------|---|--|---|--------------------------------|
| Outcome 1: Generation capacity increase                  | 20452 MW (2006)   | 30803 MW (2013)       | 30803 MW (2013)                                       | 100%   | The project started partial commercial operation in Dec 2012, and is now fully operational and is feeding the national grid.  | Yes                            |
| Outcome 2: Energy supply to the grid                     | 0 GWh (2007)  | 7494 GWh/yr (2013)    | 8541 GWh/yr (2012)                                    | 88%  | The amount of energy generated by the project during its first year of operation (2013) was less than its full potential because the turbine generators could not be fully loaded due to some technical problems with the steam generators feed pumps. Those problems are being resolved, and the plant is expected to achieve the full energy generation target in 2014. | Yes                            |
| Rating* (see IPR methodology)                            | Narrative assessment  |                       |   |  |   |                                |
| 3  | The project suffered from about one year delay in the start of commercial operation due to construction delays, which also affected the amount of generated energy in the first year of operation 2013. The plant is now operating at full capacity and is expected to achieve the target outcomes in 2014. |                       |   |  |   |                                |

## 3. Output reporting

| Output indicators (as specified in the RLF; add more rows as needed) | Most recent value (A)   | End target (B) (expected value at project completion) | Progress towards target (% realized) (A/B) | Narrative assessment (indicative max length: 50 words per output)  | Core Sector Indicator (Yes/No) |
|--|---|---|--|--|--------------------------------|
| Output 1: Steam power plant erected                                  | 1   | 1   | 100%                                       | Two steam turbine generation units, each of 650 MW rated capacity, have been constructed and are now operational, but have suffered from construction delays and technical issues that are now being resolved. |                                |
| Output 2: High voltage substation constructed                        | 1   | 1   | 100%                                       | The 500 kV substation has been constructed and is now operational without problems.  |                                |
| Rating* (see IPR methodology)  | Narrative assessment  |   |  |  |                                |
| 3  | The project has achieved all its targeted outputs, mainly the construction of 2x650 MW steam turbine generating units with all auxiliaries and high-voltage substation for connecting the plant to the national grid. However, the outputs suffered from one year delay during construction. In addition, the units also suffered |   |  |  |                                |

|  |   |
|--|---|
|  | from technical problems during the first year of operation due to issues with the boiler main feed water pump. Those issues are being resolved. |
|--|---|

#### 4. Development Objective (DO) rating

| DO rating (derived from updated IPR)* | Narrative assessment (indicative max length: 250 words)   |
|---------------------------------------|---|
| 3                                     | Satisfactory (3): Despite the construction and start-up delays, the project has achieved its developmental objectives in meeting part of the increase in demand for electricity in the country, thus supporting socio-economic development. |

#### 5. Beneficiaries (add rows as needed)

| Actual (A)                  | Planned (B)                 | Progress towards target (% realized) (A/B) | % of women | Category (eg. farmers, students)   |
|-----------------------------|-----------------------------|--|------------|--|
| Egyptian Population         | Egyptian Population         | 100%                                       | 50%        | By injecting its power into the national grid, which already covers almost the whole country, the project benefits the entire Egyptian population. The main electricity consumption sectors are the residential, industrial, commercial, public buildings and services and agriculture.  |
| Job creation for the locals | Job creation for the locals | 120%                                       | Negligible | The project created a maximum of 3600 jobs for the nationals of Egypt (3000 estimated at appraisal), comprising 2800 jobs for the manual labour jobs that usually benefit low-income families, and 800 non-manual jobs that typically benefit the low-to-middle income category. Because of the nature of construction activities and environment, the number of women who directly benefited is negligible.   |
| National Power Utility      | National Power Utility      | 100%                                       | N/A        | Both EEHC and WDEPC benefited from the project through the practical experience gained by their staff through the planning, design and implementation of the project. The project also added new highly-efficient power generation facility to WDEPC' assets, which should help provide good financial return to the company.  |
| Egyptian Contractors        |                             |  | N/A        | Egyptian contractors and service providers have been gaining a lot of practical experience through their participation in the implementation of large power plant projects in Egypt (and in other countries). In the case of Abu Qir, Egyptian contractors participated, either solely or jointly with foreign contractors, in the execution of 12 contracts out of the 19 contracts of the whole project. Many of these contracts did not involve just construction works, but also provision of goods, materials and equipment; most of which was manufactured in Egypt. The indirect impact of the projects on some local industries is therefore not to be underestimated (unfortunately, however, the exact quantification of such benefits is not a trivial exercise). |

## 6. Gender equality

### Assessment on the performance of gender equality in the operation (indicative max length: 250 words)

While the direct impact of the project on women, through for example availing jobs during the construction phase, was rather very limited due to the nature of such a large and complex infrastructure project, the main and more sustainable impact of the project on women is through the provision of reliable and affordable electricity especially to the residential and services sectors in Egypt. In particular, in the health and education sectors, women play a major role in making up a proportional mass of the work forces in these sectors. Most of the health facilities in Egypt are equipped with medical equipment that run on electricity. The education system in Egypt is gradually introducing more modern learning techniques starting from the primary schools level, including IT equipment. Some schools in Egypt also run for long hours in order to be able to accommodate the large number of enrolled pupils. Those long hours extend after sunset in the winter and therefore the need for efficient lighting is essential for those schools.

On the other hand, many Egyptian women take high managerial posts in public and private Egyptian institutions and enterprises. In the case of Abu Qir project, women comprise about 11 – 15% of the technical and administrative staff of both EEHC and WDEPC. The team who managed the Abu Qir project at EEHC and WDEPC comprised several women who contributed very positively to the project, and also gained practical experience through its implementation.

## 7. Unanticipated or additional outcomes (add rows as needed)

| Description | Type (eg. gender, climate change, social, other) | Positive or negative | Impact on project (High, Medium, Low) |
|-------------|--|----------------------|---------------------------------------|
| None        |  |                      |                                       |

## 8. Lessons learned related to effectiveness (add rows as needed)

| Key issues (max 5, add rows as needed) | Lessons learned   | Target audience                              |
|--|---|--|
| Project-created employment             | Employment opportunities created by any project during construction are very important target for the local population, especially unskilled labour that can usually be provided by the simplest of communities. Failing to observe this either during procurement or during contract implementation could cause social unrest in the project surroundings as was particularly the case with one of the Abu Qir contractors. Appropriate culturally relevant experience as well as the use of local unskilled population wherever possible should be taken into consideration in the design of project procurement in order to ensure social acceptance of the project during implementation. | Project developers<br>Financing institutions |

## C Efficiency

### 1. Timeliness

| Planned project duration – years (A)<br>(as per PAR) | Actual implementation time – years (B)<br>(from effectiveness for 1st disb.) | Ratio of planned and actual implementation time (A/B) | Rating* |
|--|--|---|---------|
| 4.4  | 5.8<br>(from start of implementation to match duration in PAR)               | 76%   | 2       |

### Narrative assessment (indicative max length: 250 words)

Compared to the original project schedule foreseen at appraisal, project implementation suffered from a delay of about 1.4 years during construction (16 months for unit 1 and 22 months for unit 2). The delay is a result of a group of main causes, including: (i) a slightly longer procurement cycle, in particular because the largest procurement package launched under the project for the two steam turbine generators exhibited a single bid and the utility took some time to evaluate the effectiveness of re-launching the bidding of this procurement package versus accepting the single bid, and eventually went for accepting the single bid; (ii) the bid for the steam turbine generators was based on a schedule for the manufacturing and delivery of the steam turbine generators

that was seven-months-longer than what was required in the bidding document, but had to be accepted because it was a single bid; (iii) implementation delays mainly by the pumps and drives contractor and the mechanical equipment contractor; and (iv) miscellaneous site delays due to the political instability and security issues following the 2011 revolution.

## 2. Resource use efficiency

| Median % physical implementation of RLF outputs financed by all financiers (A) (see II.B.3)   | Commitment rate (%) (B)<br>(See table 1.C – Total commitment rate of all financiers) | Ratio of the median percentage physical implementation and commitment rate (A/B) | Rating* |
|---|--|--|---------|
| 100%  | 100%   | 100%   | 4       |
| <b>Narrative assessment</b> (indicative max length: 250 words)  |  |  |         |
| <p>The total project cost, inclusive of taxes and custom duties, had a cost overrun of about 14%, increasing from USD 1,322.7 million estimated at appraisal to USD 1,518 million at completion. The cost increase is due to the time at which the plant was procured in 2007 – 2009 during which the prices of oil and other main materials were exceptionally high. There was also high global demand on large-size power equipment, especially from the Far East, which left the market in Egypt with relatively short supply as evidenced by the project receiving a single bid for a large package that was tendered internationally. Such packages are typically targeted by many of the large equipment manufacturers and contractors worldwide. The cost gap was covered by both the utility (WDEPC) and by a loan from the OPEC, and the project did not suffer from cash flow problems or shortages. Nonetheless, the price of installed kW, close to USD 1000/kW, is comparable to the cost of this technology at that time.</p> |  |  |         |

## 3. Cost benefit analysis

| Economic Rate of Return (at appraisal)  | Updated Economic Rate of Return (at completion) | Rating* |
|---|---|---------|
| EIRR: 22%   | EIRR: 17.5%                                     | 3       |
| <b>Narrative assessment</b> (indicative max length: 250 words)  |   |         |
| <p>The economic and financial analysis used for the appraisal of the Abu Qir project have been updated to reflect the actual project costs, operation and maintenance costs as well as actual plant outputs from the data of the first year of operation (more details of the updated analysis are in Annex I). According to the updated analysis, the Abu Qir power plant yields positive financial and economic returns. Egypt has been facing an emerging energy supply shortfall since 2011/12. Therefore, the direct benefits of the project are the economic value of the incremental energy delivered to consumers from the new plant. This value is computed using estimates of willingness-to-pay for the various consumer groups.</p> <p>The updated economic rate of return (EIRR) of 17.5% is lower than the initial 22% calculated at appraisal. The decrease in the EIRR is due some factors, including: (i) the increase in project cost, (ii) the low plant energy output during the first year of operation because of some technical issues, and (iii) the shortage of the highly cost-effective natural gas as a main fuel for the power plant during the first year of operation and therefore relying more on the more expensive heavy fuel oil during that period. As more gas supply become available to the power plant, the economic rate of return can significantly increase in the future.</p> <p>The economic and financial returns remain positive, indicating that the project is financially and economically viable. The updated EIRR is higher than the estimated economic cost of capital of 12%. The economic NPV of the project is calculated as EGP 3,572.3 million. These results show that the project is economically viable and can compete favourably with other public investments.</p> |   |         |

## 4. Implementation Progress (IP)

| IP Rating<br>(derived from updated IPR) * | Narrative comments (commenting specifically on those IP items that were rated Unsatisfactory or Highly Unsatisfactory, as per last IPR). (indicative max length: 500 words)   |
|---|---|
| 3.6                                       | <p>The project has complied with all covenants and first disbursement did not delay project implementation. Advance procurement was used with some very large packages in order to account for the lead time required for procuring such packages and align the timing of contract signature with that of first disbursement as possible. Procurement documents were generally in good quality and were in line with Bank requirements. The project routinely submitted monthly progress reports outlining the status of project implementation and flagging issues that required attention from any of the stakeholders involved. The PIU follows good financial management rules and regulations. However, the external audit identified some shortcomings, e.g. related to the capitalisation of fixed assets, that were to be addressed by the PIU.</p> |

|  |   |
|--|---|
|  | In terms of implementation progress, the Abu Qir project is almost complete and most of the contractors have completed their main work and are currently working on some punch list items and supply of spare parts. Commercial operation of the first unit started in December 2012, which was about 16 months behind schedule. Among the top reasons for this delay was the low performance of some contractors. Despite of extensive efforts by WDEPC and the engineering consultant to recover the delay and put those contractors back on track, some of the issues were complicated and were exacerbated by the political instability in Egypt after the 2011 revolution; thus leading to the reported delay. |
|--|---|

## 5. Lessons learned related to efficiency

| Key issues (max 5, add rows as needed)  | Lessons learned  | Target audience      |
|---|--|----------------------|
| Thorough documentation of the performance of the contractors                  | The project involved a relatively large number of contractors (19). Although all of them were procured through international competition and based on past experience criteria, the performance of those contractors varied widely, and some of them caused significant delay to project implementation progress. It is therefore crucial that project implementation agencies thoroughly document the performance of all the contractors involved in their projects to be used as a reference in future projects. This could potentially help further enhance bidders' past experience/pre-qualification requirements, and therefore should help avoid similar problems arising again in future projects. | EEHC/Power Utilities |
| Planning projects based on realistic time schedules guided by past experience | The original time schedule for the Abu Qir project was based on the two units starting operation just one month apart. This time gap between two relatively large units was over-ambitious and indeed could not be accepted by the contractor. A three to four months gap seems to be more realistic.  | EEHC/Power Utilities |

## D Sustainability

### 1. Financial sustainability

| Rating * | Narrative assessment (indicative max length: 250 words)   |
|----------|---|
| 3        | Based on the latest available project data, a sensitivity analysis of the project's financial and economic analysis was carried out to assess the impact of changes in critical parameters to the project's financial NPV and rate of return (the selected sensitivity analysis and a full list of all updated data can be found in Annex I). The sensitivity analysis did not identify any major risks to either the financial or the economic sustainability of the plant. Similar to the EIRR, the financial rate of return decreases from 11.71% estimated at appraisal to 7.8% with a financial NPV of EGP 3,825.1 million. The financial viability is mostly sensitive to the plant's fuel costs as well as plant generated energy (utilization factor). For example, a reduction in the plant utilization factor to 85% would lower the financial IRR to 6.8%. This is very unlikely to actually occur however since, as indicated earlier, Egypt is currently facing a severe power shortage that all the available capacity is almost fully utilized, especially the new high-efficiency plants. The other important factor is the availability of sufficient natural gas to run the plant at full capacity. Egypt has been suffering from temporary natural gas shortages because of lack of new investments in the sector during the past few years. The power sector, as the largest consumer of gas, has inevitably been affected. The shortage of natural gas has been in many cases filled by oil-based fuels such as heavy fuel oil. Because those fuels are largely imported, their costs to the power sector are higher than that of natural gas, and as such they increase the electricity generation cost. Such cost increases are not passed on to consumers as the market is regulated. |

### 2. Institutional sustainability and strengthening of capacities

| Rating * | Narrative assessment (indicative max length: 250 words)   |
|----------|---|
| 4        | The project has been directly implemented by WDEPC, one of the six power generation companies in Egypt under EEHC. WDEPC is a well-established institution and owns the human resources that enable it to carry out its mandate successfully. In addition to the Abu Qir project, WDEPC currently has a portfolio of eight (08) thermal power plants with |

|  |
|--|
| <p>a total capacity of 2,608 MW comprising a mixture of power generation technologies, which widens the practical experience and knowledge base of the technical staff of WDEPC.</p> <p>EEHC provided direct input into the project and support to WDEPC, primarily during the early project design phases but also subsequently throughout implementation. As the parent company, EEHC carries out the planning and provides main input to the design of all thermal power generation projects in the country, which helps in sharing the experiences from those projects among the different subsidiary companies - such as WDEPC - that finally implement and run those projects.</p> <p>In general, the power sector is among the most attractive employers in Egypt, and therefore is able to attract good calibres. The sector provides continuous on-the-job training to its fresh comers in order to ensure successful continuation of the business.</p> |
|--|

### 3. Ownership and sustainability of partnerships

| Rating<br>* | Narrative assessment (indicative max length: 250 words)   |
|-------------|---|
| 4           | The implementation of the Abu Qir project involved the intervention of various players, both within the public sector, but also within the private sector either as contractor or service providers. The main party responsible for the coordination among those different stakeholders was WDEPC as the project's main implementation agency, with great support from EEHC and the project's consultant (PGESCO). In particular, and critical to the successful completion of the project, was the coordination with the Transmission Company for connecting the plant to the grid, with the oil and gas sector for connecting the plant to the gas grid and subsequently for making available sufficient quantities of fuel for running the plant, and with the various different government institutions responsible for issuing the various permits required for project implementation, and subsequently for monitoring the actual performance of the project vis-à-vis the safeguards that may be required under some of the permits (e.g. environmental permit). |

### 4. Environmental and social sustainability

| Rating<br>* | Narrative assessment (indicative max length: 250 words)   |
|-------------|---|
| 3           | Overall, the Abu Qir project has successfully complied with the requirements of the ESIA and its ESMP both during project construction, and subsequently during implementation. The project included a component for procurement and installation of some of the environmental equipment necessary to be installed at the site for continuous monitoring of critical environmental aspects such as plant gas emissions. The equipment has been procured, installed and continue to operate successfully. WDEPC provided annual reports to the Bank on the monitoring of the various environmental and social aspects of the project, and implementation of the ESMP. The reports did not flag any issues that were of critical breach of any environmental aspect, as was also witnessed during the Bank's field supervision of the project. One concern however is the increase of using heavy fuel oil as a fuel during the first year of plant operation due to the shortage of natural gas (the primary fuel). The utility had to resort to this solution given the power shortage in the country in addition to the necessity of operating the plant during the warranty period in order to discover any manufacturing or construction defects. The Government of Egypt is taking good measures to address the gas shortage problem in the country by re-stimulating FDI in the oil and gas sector for new developments, and in the short-term exploring the means for importing natural gas to fill the demand gap. |

### 5. Lessons learned related to sustainability

| Key issues (max 5, add rows as needed) | Lessons learned   | Target audience     |
|--|---|---------------------|
| Fuel pricing for power generation      | It is well established that fuel costs comprise an important component of the generation cost of thermal plants. The government should therefore set clear strategies for how it intends to set fuel prices for the various consumers, including the power sector, in order to reduce the risks related to fuel costs in project analysis and investment decisions. | Government of Egypt |
| Fuel supply for power generation       | There has been some un-clarity about the institution(s) that will be responsible for importing natural gas to Egypt. Currently, this mainly falls under the mandate of the Ministry of Petroleum, but at some times it was suggested that the large consumers may also directly import gas for their needs. These arrangements will be difficult for                | Government of Egypt |

|  |  |  |
|--|--|--|
|  | many of the consumers, even large ones, who typically specialise in other types of business. |  |
|--|--|--|

### III Performance of stakeholders

#### 1. Bank performance

| Rating *   | Narrative assessment by the Borrower on the Bank's performance, as well as any other aspects of the project (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)  |  |
|--|--|--|
| 4  | In general, the performance of the Bank was good. The Bank provided very good support throughout the implementation of the project. The Bank field presence as well as the frequent field missions helped keep the Bank close to the PIU and fully updated of issues as soon as they arose. The Bank was in most cases very responsive to project requests, and indeed kept the project informed about the status of processing those requests.  |  |
| Comments to be inserted by the Bank on its own performance (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)   |  |  |
| <p>The Bank showed great flexibility during the implementation of this project that was very beneficial in either steering the project in the right direction or preventing some possible bottlenecks that could have impacted progress. In particular, the Bank agreed to change the payment terms of one of the very large contracts under the project in order to overcome the non-readiness of the financial resources of the IsDB, the co-financer of the contract. This flexibility was very important for the successful uninterrupted execution of the contract, and the overall project. At the onset, the Bank provided the necessary guidance and information to the PIU on the various Bank rules and procedures through both a project launching mission and routine support from EGFO. More systematically, the Bank continued to provide close follow-up and monitoring of the project either through its field presence through EGFO or through field supervision missions. So far, over the 6.5 years since this loan became effective, the Bank carried out 11 field and two desk supervisions, with an average of slightly more than two supervisions per year. Procurement documents submitted to the Bank were reviewed and cleared in a timely manner as necessary, which supported project progress. Apart from some slight changes to the list of goods and services and adjustment to the project time schedule, to all of which the Bank has responded positively, no major changes to the project design or objectives were required.</p> |  |  |
| Key issues (related to Bank performance, max 5, add rows as needed)  | Lessons learned  |  |
| Possible language barrier  | In Egypt in particular where the native language is not an official Bank language, language may sometimes stand as a barrier between effective communication between the PIU and the Bank, especially during supervision missions and discussions with field staff and other stakeholders. While EGFO plays a critical role in overcoming this barrier, Bank missions inevitably comprise non-native staff who might find it difficult to communicate directly with PIUs. This point needs to be taken into consideration as practically possible when comprising Bank missions. |  |

#### 2. Borrower performance

| Rating * | Narrative assessment on the Borrower performance to be inserted by the Bank (both quantitative and qualitative, depending on available information). See guidance note. (indicative max length: 250 words)   |  |
|----------|--|--|
| 4        | <p>Given that EEHC and WDEPC have good and long experience with the implementation of thermal power plants, including the technology used for the Abu Qir project, they were able to handle this project with success. Starting from the preparation phase when the feasibility and environmental studies prepared for the project were of good quality and included sufficient information to enable the Bank process the project, and ending with the actual project implementation itself. The engineering consultant recruited to manage and supervise the project is very experienced in the Egyptian power generation field, and therefore played a critical role in the successful implementation of the project. All loan covenants were complied with, and in a timely manner that did not cause any implementation delays. Counterpart funding, which is the largest share at 38%, was timely available. The project submitted routine progress reports to the various stakeholders, including the Bank, which were very informative and outlined the main issues that required close attention. The borrower was very supportive to Bank missions, and facilitated the missions' work, which helped make them successful. Bank recommendations, either through the missions or through follow-up by EGFO, were usually taken into consideration by the borrower. There was some delay, however, in addressing some of the recommendations made by the external auditors of the Bank loan, but they were not critical. Overall, the borrower showed good competence in managing and executing the project. WDEPC did its best to try to accommodate the demands of the local population around the project area, especially in terms of availing job opportunities for them through the project.</p> |  |

| Key issues (related to Borrower performance, max 5, add rows as needed) | Lessons learned   |
|---|---|
| Taking quick action on auditor's recommendations                        | WDEPC was not quick enough in addressing the comments and recommendations made by the external auditors through their annual project audits. WDEPC is highly advised to take swift action on such issues. It is also advisable to recruit an auditor for the expected duration of the project such that the auditor has the full history of the project, and can easily report on the implementation of their recommendations made in previous audits as is usually required by the Bank. |

### 3. Performance of other stakeholders

| Rating *   | Narrative assessment on the performance of other stakeholders, including co-financiers, contractors and service providers. See guidance note on issues to cover. (indicative max length: 250 words)   |                                       |
|--|---|---------------------------------------|
| 3  | <p>The performance of most other stakeholders involved in the Abu Qir project was good. In particular, co-financiers showed great flexibility in responding to the changing needs of the project either in terms of providing additional financial resources to cover part of the cost overrun or responding to changes in the financing plan that were necessary for example to accommodate the fluctuations in the exchange rates among the various currencies involved (resource vs contract currencies, etc.). Co-financing of the large steam turbine generators contract by the Bank and IsDB was very successful. The IsDB showed flexibility in accepting to follow Bank procurement rules for this package.</p> <p>Likewise, the performance of most contracts, including both Bank and non-Bank financed, was good and they were able in many cases to fulfil their scope of work in time and with quality as required in their contracts. A few number of contractors (3 out of 19), however, faced difficulties in performing their scope of work either in terms of keeping to the time schedule, with some contractors running into long delays, or in terms of facing technical issues related to the correct functioning and performance of their part of the work (equipment, facilities, etc.). Nonetheless, external factors such as the political instability and security issues that were generally experienced in the country following the 2011 revolution contributed to some site delays, the impact of which on the progress of the various contractors varied depending on the stage of execution of each contract. Finally, the transmission and gas companies successfully fulfilled their roles in this project by timely providing the necessary ancillary infrastructure that was essential for the proper operation of the power plant.</p> |                                       |
| Key issues (related to performance of other stakeholders, max 5, add rows as needed) | Lessons learned (max 5)   | Target audience (for lessons learned) |
| Managing the expectations of the local people  | Job opportunities through the project was the most important benefit that the local population appreciated. While this is fair, it is practically impossible to satisfy all the local communities job needs through just a single project. It is recommended that project developers put in place dedicated community liaison officers who's primary responsibility is to communicate with the local population in order to provide them with factual information about the project, and therefore help manage their expectations early on.   | Project Developers                    |

## IV Summary of key lessons learned and recommendations

### 1. Key lessons learned

| Key issues (max 5, add rows as needed)   | Key lessons learned   | Target audience |
|--|---|-----------------|
| Project packaging and procurement design | EEHC has adopted the multi-package system for procuring its power plant projects instead of the EPC/turn-key system. Based on the practical experience from EEHC projects, it is fully acknowledged that through the careful packaging of the project, some gains can be achieved including cost reductions and larger contribution by the local industry/contractors. On the other hand, the packaging system comes with its own risks, primarily the large number of interfacing between the various contractors. The packaging system therefore requires a much stronger project management team and engineering consultant to ensure that it yields its benefits. | EEHC            |

|                                   |   |                    |
|-----------------------------------|---|--------------------|
|                                   | Advance contracting was properly utilised in the design of this project in order to account for the long lead time required for the design and manufacturing of some of the large and complicated equipment.  |                    |
| Vigilant selection of contractors | Large sophisticated infrastructure projects require special expertise in both the design and construction. Procuring the contractor(s) for such projects must be based on a very careful and well-thought-out selection criteria that is on the one hand fair and provides for wide competition, and on the other helps in identifying the contractors who have the necessary experience and capability to carry out the job properly.  | Project Developers |
| Careful project planning          | The target date for completing a project or bringing it into service can sometimes put pressure on the project planners to shorten its implementation time schedule. As such, quite often projects are planned over very-ambitious time schedules that either require ample additional resources, which add to the project cost, or cannot be practically achieved, thus leading to project delays. Careful project planning that takes into consideration the relationship between the implementation schedule and amount of required resources is very important for proper project planning, including accurate cost estimation. | Project Developers |

## 2. Key recommendations (with particular emphasis on ensuring sustainability of project benefits)

| Key issue (max 10, add rows as needed)             | Key recommendation   | Responsible        | Deadline   |
|--|--|--------------------|------------|
| Optimal operation of the power plant               | The first year operation data of the power plant show that the overall plant efficiency is very good for this type of technology. It is key that the plant is operated and maintained in the most optimal way to ensure that performance does not deteriorate rapidly. Most importantly, securing enough primary fuel (gas) is important for the efficient and environmental-friendly operation of the power plant. On the other hand, purchase of spare parts for the critical and most-used parts of the equipment was included in the project. This is an important project design feature that is highly recommended for such large infrastructure projects, especially those that rely on sophisticated equipment and machinery such as power plants. | Government         | Continuous |
| Continuous building of human capacity              | The successful and safe operation of complicated projects such as large-scale power plants requires highly trained human resources. EEHC and its affiliated companies provide on-the-job-training for new job entrants to ensure that their human capacity is always up to the job. One important technique for such a training is through the use of simulators that closely mimic the real equipment, hence enable the trainees to practice without facing any real operational risks. It is recommended that EEHC considers acquiring a modern simulator for its new sub-critical steam power plants to be used as a training tool for this type of technology.   | EEHC               | N/A        |
| Thorough documentation of contractors' performance | The performance of the various contractors who get involved in large infrastructure projects should be thoroughly documented in the developers' project completion report(s) in order to ensure that such vital information is passed-on to other developers and used when selecting the contractors for new projects. This is particularly important in the case of the power industry where a utility may comprise a few companies, each of which develops projects on its own. Sharing project experiences among those companies should help the whole utility improve the performance of its projects.   | Project Developers | N/A        |

## V Overall PCR rating

| Dimensions and criteria   | Rating*     |
|---|-------------|
| <b>DIMENSION A: RELEVANCE</b>   | <b>4</b>    |
| Relevance of project development objective (II.A.1)                   | 4           |
| Relevance of project design (II.A.2)                                  | 4           |
| <b>DIMENSION B: EFFECTIVENESS</b>                                     | <b>3</b>    |
| Development Objective (DO) (II.B.4)                                   | 3           |
| <b>DIMENSION C: EFFICIENCY</b>  | <b>3.15</b> |
| Timeliness (II.C.1)   | 2           |
| Resource use efficiency (II.C.2)                                      | 4           |
| Cost-benefit analysis (II.C.3)  | 3           |
| Implementation Progress (IP) (II.C.4)                                 | 3.6         |
| <b>DIMENSION D: SUSTAINABILITY</b>                                    | <b>3.5</b>  |
| Financial sustainability (II.D.1)                                     | 3           |
| Institutional sustainability and strengthening of capacities (II.D.2) | 4           |
| Ownership and sustainability of partnerships (II.D.3)                 | 4           |
| Environmental and social sustainability (II.D.4)                      | 3           |
| <b>AVERAGE OF THE DIMENSION RATINGS</b>                               | <b>3.4</b>  |
| <b>OVERALL PROJECT COMPLETION RATING</b>                              | <b>S</b>    |

## VI Acronyms and abbreviations

| Acronym (add rows as needed) | Full name                                     |
|------------------------------|---|
| AFESD                        | Arab Fund for Economic and Social Development |
| EEHC                         | Egyptian Electricity Holding Company          |
| EGP                          | Egyptian Pound                                |
| EIRR                         | Economic Internal Rate of Return              |
| EUR                          | Euro  |
| FDI                          | Foreign Direct Investment                     |
| FNPV                         | Financial Net Present Value                   |
| GWh                          | giga-watt hour                                |
| IsDB                         | Islamic Development Bank                      |
| KFAED                        | Kuwait Fund for Arab Economic Development     |
| kV                           | kilo volt                                     |
| kW                           | kilo-watt (= 1000 watt)                       |
| MW                           | mega-watt (= 1 000 000 watt)                  |
| NPV                          | Net Present Value                             |
| OPEC                         | OPEC Fund for International Development       |
| PIU                          | Project Implementation Unit                   |
| USD                          | United States Dollar                          |
| WDEPC                        | West Delta Electricity Production Company     |
| yr                           | year  |

Annex II: Updated Implementation Progress and Results Report (IPR)

## ANNEX I: Updated Financial and Economic Analysis

### A. Changes in the Financial Model

The reassessment of the economic and financial analysis is based on data collected from project implementation (actual disbursement schedule, real investment costs) as well as from the first year of the plant operation (plant actual inputs and outputs, technical specifications, availability factor, etc.). In addition, macroeconomic and financial data have been updated where more recent data were available. A summary of the main data updates is as follows:

#### Macroeconomic assumptions

Inflation rate:

- EGP: Updated from 3.5 to 5%
- Source: Updated financial data, IM

Economic Cost of capital:

- Updated from 10% to 12%
- Source: AfDB

#### Technical data

Heavy fuel oil data (use and prices):

- Updated in accordance with real provided prices
- Source: WDEPC

Availability factor:

- Increased to 91% based on an average of first year of operation.
- Source: WDEPC

Auxiliary consumption:

- Decreased from 10% to 4%
- Source: WDEPC

#### Cost schedule

- The actual investment costs have been reflected in the analysis (source: WDEPC and PGESCO).
- Staff salaries are assumed to grow in line with the updated WDEPC estimate of 2.5% (revised downwards from 10% at appraisal).
- The ADB Loan disbursement has been updated according to the realized disbursement schedule.
- Variable costs were adjusted based on WDEPC financial data.



# Implementation Progress and Results Report (IPR)



## A Report summary and proposed actions

### Report data

|                       |   |  |  |
|-----------------------|---|--|--|
| ☒ <b>Report type:</b> | <b>Date of report:</b> August 2014  | <b>Mission date (if field mission)</b>         |  |
|                       | <b>Launching/field supervision/MTR/Desk/Review/other (specify):</b> Field supervision and PCR mission | <b>From:</b> 27 April 2014                     | <b>To:</b> 8 May 2014                        |
| ☒ <b>Prepared by:</b> | <b>Task Manager:</b><br>Khaled El-Askari  | <b>Alternate Task Manager:</b><br>Tanja Faller | <b>Division Manager:</b><br>Engedasew Negash |

### Project data

|  |  |  |                           |
|--|--|--|---------------------------|
| <b>Project code:</b> P-EG-FAA-013<br><b>Instrument number(s):</b> ADB Loan 2000130002630   | <b>Project name:</b> Abu Qir 1300 MW Thermal Power Plant<br><b>Country:</b> Arab Republic of Egypt<br><b>Sector:</b> Energy/Power  |  |                           |
| <b>Processing milestones – Bank approved financing only (add/delete rows depending on the number of financing sources)</b>   | <b>Key Events (Bank approved financing only)</b>   | <b>Disbursement and closing dates (Bank approved financing only)</b>   |                           |
| <b>Financing source/instrument 1:</b> ADB Loan Euro 242.0 million<br><b>Date approved:</b> 14 Nov. 2007<br><b>Date signed:</b> 15 Jan. 2008<br><b>Date of entry into force:</b> 5 Sep. 2008<br><b>Date effective for first disbursement:</b> 27 Oct. 2008<br><b>Date of actual first disbursement:</b> 4 Feb. 2009 | <b>Financing source/instrument 1:</b> ADB Loan Euro 242.0 million<br><b>Cancelled amounts:</b> None<br><b>Supplementary financing:</b> None<br><b>Restructuring (specify date &amp; amount involved):</b> None<br><b>Extensions (specify dates):</b> 31 Dec.2014 | <b>Financing source/instrument 1:</b> ADB Loan Euro 242.0 million<br><b>Original disbursement deadline:</b> 31 Dec. 2013<br><b>Original closing date:</b> 31 Dec. 2013<br><b>Revised (if applicable) disbursement deadline:</b> 31 Dec. 2014<br><b>Revised(if applicable) closing date:</b> 31 Dec. 2014 |                           |
| <b>Financing source/instrument (add/delete rows depending on the number of financing sources):</b>   | <b>Foreign currency (UA million):</b>  | <b>Local currency (UA million):</b>  | <b>TOTAL (UA million)</b> |
| <b>Financing source/instrument 1:</b> ADB Loan   | 211.43   | 0.00   | 211.43                    |
| <b>Financing source/instrument 2:</b> WDEPC  | 0.00   | 385.49   | 385.49                    |
| <b>Financing source/instrument 3:</b> IsDB   | 103.66   | 0.00   | 103.66                    |
| <b>Financing source/instrument 4:</b> AFESD  | 140.65   | 0.00   | 140.65                    |
| <b>Financing source/instrument 5:</b> KFAED  | 140.65   | 0.00   | 140.65                    |
| <b>Financing source/instrument 6:</b> OPEC   | 19.59  | 0.00   | 19.59                     |
| <b>TOTAL:</b>  | <b>615.98</b>  | <b>385.49</b>  | <b>1,001.48</b>           |

| Financing source/instrument<br>(add/delete rows depending on the<br>number of financing sources):  | Disbursed to date<br>(amount, UA<br>million): | Disbursed to date<br>(%): | Undisbursed to<br>date (amount, UA<br>million): | Undisbursed to<br>date (%): |
|--|---|---------------------------|---|-----------------------------|
| Financing source/instrument 1: ADB<br>Loan   | 187.78  | 89%                       | 23.66   | 11%                         |
| Financing source/instrument 2: WDEPC   | 382.39  | 99%                       | 3.10  | 1%                          |
| Financing source/instrument 3: IsDB  | 103.66  | 100%                      | 0.00  | 0%                          |
| Financing source/instrument 4: AFESD   | 131.27  | 93%                       | 9.38  | 7%                          |
| Financing source/instrument 5: KFAED   | 121.89  | 87%                       | 18.75   | 13%                         |
| Financing source/instrument 6: OPEC  | 19.59   | 100%                      | 0.00  | 0%                          |
| <b>TOTAL:</b>  | <b>946.59</b>                                 | <b>95%</b>                | <b>54.89</b>                                    | <b>5%</b>                   |
| <b>Executing and implementing agency (ies):</b>  |   |                           |   |                             |
| Egyptian Electricity Holding Company (EEHC)/West Delta Electricity Production Company (WDEPC)  |   |                           |   |                             |
| <b>Co-financiers and other external partners:</b>  |   |                           |   |                             |
| Islamic Development Bank (IsDB), Arab Fund for Economic and Social Development (AFESD), Kuwait Fund for Arab Economic Development (KFAED), and OPEC Fund for International Development (OFID). |   |                           |   |                             |

## Performance status

| Progress towards development objective                                |                    |          |  |  |
|---|--------------------|----------|--|--|
| Rating on<br>Development<br>Objective (DO)                            | Performance rating |          | Summary of key findings  |  |
|   | Current            | Previous | Despite the construction and start-up delays, the project has achieved its developmental objectives in meeting part of the increase in demand for electricity in the country, thus supporting socio-economic development.  |  |
|   | S                  | N/A      |  |  |
| Implementation progress   |                    |          |  |  |
| Rating on<br>Implementation<br>Progress (IP)                          | Performance rating |          | Summary of key findings  |  |
|   | Current            | Previous | The disbursement deadline has been extended until the end of 2014, but given the current disbursement rate so far, there might be a need for additional extension of 3 – 6 months to allow for full disbursement of the Bank loan. The main remaining disbursements under the loan are for the last payments under some contracts and for purchase of spare parts. |  |
|   | HS                 | N/A      |  |  |
| Overall project performance classification                            |                    |          |  |  |
| Overall Project<br>Performance<br>Classification (PP,<br>PPP or NPPP) | Project status     |          | Summary of key findings  |  |
|   | Current            | Previous | The project is almost fully complete and has already started commercial operation in 2013.   |  |
|   | NPPP               | N/A      |  |  |

## Issues, risks and actions for management consideration

| Issues affecting project implementation<br><i>(Report major challenges to project implementation and proposed actions for management attention. Completed actions can be removed from future IPRs)</i> |  |                  |            |   |
|--|--|------------------|------------|---|
| Key issues   | Corrective actions   | Responsible      | Deadline   | Status <i>(Completed, In Progress, Not yet initiated)</i> |
| The overall disbursement ratio from the ADB loan is almost 90%, however, the disbursement ratio of the annual target is a bit too  | Re-assess the need for and request as necessary extension of the last disbursement date. | WDEPC (and Bank) | 31/10/2014 | To be carried out   |

| low. There might be a need for additional extension of the last disbursement date by 3 – 6 months to allow for full disbursement of the Bank loan. |   |             |          |  |
|--|---|-------------|----------|--|
| Main risks and mitigation<br><i>(Report major risks to project implementation and proposed actions for management attention)</i>                   |   |             |          |  |
| Risks  | Mitigation measures applied or proposed   | Responsible | Deadline |  |
| Main fuel (gas) supply to the plant in 2013 was not sufficient to cover its full needs because of general gas shortage country wide.               | The government is working on expediting further investments in the oil & gas sector to increase domestic gas production. In addition, they are working on importing gas as a short-term solution. | Government  |          |  |

### Management review and comments

| Report reviewed by | Name                 | Date reviewed | Comments     |
|--------------------|----------------------|---------------|--------------|
| Country Manager    | Ms. Leila Mokadem    | <DD/MM/YYYY>  | <ENTER HERE> |
| Regional Director  | Mr. Jacob Kolster    | <DD/MM/YYYY>  | <ENTER HERE> |
| Sector Manager     | Mr. Engedasew Negash | <DD/MM/YYYY>  | <ENTER HERE> |
| Sector Director    | Mr. Alex Rugamba     | <DD/MM/YYYY>  | <ENTER HERE> |

## B Results reporting and assessment

### Progress towards development objective (project purpose)

State the project development objective ( usually the project purpose as set out in the Results-based Logframe) and assess progress

The objective of the project is to support the development strategy of the Government of Egypt and the energy sector goal of supporting economic growth and social welfare by making available reliable and affordable power supply to the various consumers country wide. The purpose of the Abu Qir project is to increase the installed power generation capacity in Egypt by 1300 MW, to become available to the national grid in 2012, thus increasing the grid capacity by 4%. The project was part of the power sector 2007 – 2012 investment plan to increase power supply in order to accommodate the expected growth in the demand.

### Outcome reporting

| Outcome indicators (as specified in the RLF, add rows as needed) | Baseline value (a) | Most recent value (b) | End target (expected value at project completion) (c) | Progress towards end target (% realized) (b-a/c-a) | Assessment   |
|--|--------------------|-----------------------|---|--|--|
| <b>Outcome 1: Generation capacity increase</b>                   | 20452 MW (2006)    | 30803 MW (2013)       | 30803 MW (2013)                                       | 100%   | The project started commercial operation in Dec 2012, and is now fully operational and is feeding the national grid. |
| <b>Outcome 2: Energy supply to the grid</b>                      | 0 GWh (2007)       | 7494 GWh/yr (2013)    | 8541 GWh/yr (2012)                                    | 88%  | The amount of energy generated by the project during its first year of operation (2013) was less                     |

|                                   |                    |                        |   |  |  |
|-----------------------------------|--------------------|------------------------|---|--|--|
|                                   |                    |                        |   |  | that its full potential because the turbine generators could not be fully loaded due to some technical problems with the steam generators feed pumps. Those problems are being resolved, and the project is expected to achieve the full target in 2014. |
| <b>Outcome rating</b>             |                    |                        |   |  |  |
| <b>Rating on project outcomes</b> | <b>This report</b> | <b>Previous report</b> | <b>Justification</b><br><i>(A rating of 2 or 1, along with proposed remedies, must be discussed in the Issues, Risks and Actions for Management section)</i>  |  |  |
|                                   | <b>3</b>           | <b>N/A</b>             | The project suffered from about one year delay in the start of commercial operation due to construction delays, which also affected the amount of generated energy in the first year of operation 2013. The plant is now operating at full capacity and is expected to achieve the target outcomes in 2014. |  |  |

### Output reporting

| <b>Output indicators</b> (as specified in the RLF, add rows as needed) | <b>Most Recent Value</b> | <b>Annual Target</b><br><i>(expected cumulative value at end of reporting year)</i> | <b>End Target</b><br><i>(expected cumulative value at completion)</i>   | <b>Progress towards annual target</b> (%)<br><i>(realized)</i> | <b>Progress towards end of project target</b> (%)<br><i>(realized)</i> | <b>Assessment</b>  |
|--|--------------------------|---|---|--|--|--|
| <b>Output 1: Steam power plant erected</b>                             | <b>1</b>                 | <b>1</b>  | <b>1</b>  | <b>100%</b>  | <b>100%</b>  | Two steam turbine generation units, each of 650 MW rated capacity, have been constructed and are now operational, but they suffered from construction delays and technical issues that are now being resolved. |
| <b>Output 2: High voltage substation constructed</b>                   | <b>1</b>                 | <b>1</b>  | <b>1</b>  | <b>100%</b>  | <b>100%</b>  | The 500 kV substation has been constructed and is now operational without problems.  |
| <b>Output rating</b>   |                          |   |   |  |  |  |
| <b>Rating on project outputs</b>                                       | <b>This report</b>       | <b>Previous report</b>  | <b>Justification</b><br><i>(A rating of 2 or 1, along with proposed remedies, must be discussed in the Issues, Risks and Actions for Management section)</i>  |  |  |  |
|  | <b>3</b>                 | <b>N/A</b>  | The project has achieved all its targeted outputs, mainly the construction of 2x650 MW steam turbine generating units with all auxiliaries and high-voltage substation for connecting the plant to the national grid. However, the outputs suffered from one year delay during construction. In addition, the units also suffered from technical problems during the first year of operation due to issues with the boiler main feed water pump. Those issues are being resolved. |  |  |  |

## Development objective (DO) rating

| Development objective rating | This report | Previous report | Justification<br><i>(A rating of 2 or 1, along with proposed remedies, must be discussed in the Issues, Risks and Actions for Management section)</i>  |
|------------------------------|-------------|-----------------|--|
|                              | 3           | N/A             | Despite of the construction and start-of-operation delays, the project has achieved its developmental objectives in meeting part of the increase in demand for electricity in the country, thus supporting socio-economic development. |

## Additional and/or unanticipated outcomes/outputs (optional)

| Indicator | Baseline | End target | Most recent value |
|-----------|----------|------------|-------------------|
| 1. None   |          |            |                   |

## C Project implementation progress reporting and assessment

### Compliance with covenants

| Criteria   | Number/Percent of conditions complied with | Rating      |                 | Assessment<br><i>With explanation in particular (a) ratings of 2 or 1 and (b) ratings lower than in the previous report</i>                                      |
|--|--|-------------|-----------------|--|
|  |  | This report | Previous report |  |
| <b>Compliance with project covenants</b> <i>(full report on compliance with covenants to be reported in Annex-2)</i>                   | 100%                                       | 4           | N/A             | All covenants have been complied with.   |
| <b>Compliance with environmental and social safeguards</b> <i>(full report on compliance with covenants to be reported in Annex-3)</i> | 100%                                       | 4           | N/A             | The project is complying with the ESIA and ESMP, and is routinely reporting on their implementation.   |
| <b>Audit compliance</b>  | 100%                                       | 3           | N/A             | The project is submitting annual audit reports, but some reports identified some financial control weaknesses that need to be addressed by the executing agency. |

### Project systems and procedures

| Criteria                         | Rating      |                 | Assessment<br><i>With explanation in particular (a) ratings of 2 or 1 and (b) ratings lower than in the previous report</i>   |
|----------------------------------|-------------|-----------------|---|
|                                  | This report | Previous report |   |
| <b>Procurement</b>               | 3           | N/A             | Both the PIU and project consultant are very familiar with Bank procurement rules and procedures. Procurement documents are generally of good quality. Nonetheless, the Bank was not in agreement with one procurement decision by the PIU, which finally led to the PIU deciding to withdraw that package from Bank financing. |
| <b>Financial management</b>      | 3           | N/A             | The PIU follows good financial management rules and regulations. However, the external audit identified some shortcomings that were to be addressed by the PIU.   |
| <b>Monitoring and evaluation</b> | 4           | N/A             | The project is routinely submitting monthly progress reports that outline the progress of the project and report on key technical and financial data that are useful for follow-up, monitoring and evaluation.  |

## Project execution and financing

| Criteria  | Total approved amount (a) | Cumulative amount to date (b) | Cumulative amount at beginning of the year (c) | Annual projection (expected cumulative amount at end of year) (d) | Progress towards annual projection (% realized) (b-c)/(d-c) | Progress towards total (% realized) | Rating      |                 |
|---|---------------------------|-------------------------------|--|---|---|-------------------------------------|-------------|-----------------|
|   |                           |                               |  |   |   |                                     | This report | Previous report |
| Disbursement (Bank approved financing only)       | 211.43                    | 187.78                        | 177.66   | 211.43  | 30%   | 89%                                 | 3           | N/A             |
| Budget commitments (Bank approved financing only) | 211.43                    | 211.43                        | 211.43   | 211.43  | 211.43  | 100%                                | 4           | N/A             |
| Counterpart funding disbursements                 | 385.49                    | 382.39                        | 378.75   | 385.49  | 54%   | 99%                                 | 4           | N/A             |
| Co-Financing disbursements                        | 404.55                    | 376.42                        | 356.0  | 404.55  | 42%   | 93%                                 | 4           | N/A             |

| Criteria  | Assessment<br><i>With explanation in particular for (a) ratings of 2 or 1 and (b) ratings lower than in the previous report</i>  |
|---|--|
| Disbursement (Bank approved financing only)       | The overall disbursement ratio from the ADB loan is almost 90%, however, the disbursement ratio of the annual target is a bit too low. The annual disbursement ratio may therefore eventually stand between 75 – 90%, hence this criterion is evaluated as satisfactory. |
| Budget commitments (Bank approved financing only) | The full Bank loan has been committed and it is unlikely that any balance will remain unutilized.  |
| Counterpart funding disbursements                 | The availability and disbursement of counterpart funding is very good and the ratio currently stands at 99%.   |
| Co-Financing disbursements                        | Funding from the various other co-financers have been utilized with varying degrees, with an average disbursement ratio of 93%. The annual disbursement ratio of co-financing is expected to exceed 90% by the end of the year.  |

## Overall implementation

| IP rating | This report | Previous report | Justification<br><i>(A rating of 2 or 1, along with proposed remedies, must be discussed in the Issues and Actions for Management section.)</i>   |
|-----------|-------------|-----------------|---|
|           | HS          | N/A             | The average IP rating is calculated as 3.6, corresponding to HS. The disbursement deadline has been extended until the end of 2014, but given the current disbursement rate so far, there might be a need for additional extension of 3 – 6 months to allow for full disbursement of the Bank loan. |

## Lessons learned during implementation

| Key issues (add rows as needed) | Lessons learned | Target audience |
|---------------------------------|-----------------|-----------------|
| [ Refer to PCR ]                |                 |                 |