Environmental and Social Due Diligence of Beni Suef Power Plant

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<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EEAA</td>
<td>Egyptian Environmental Affairs Agency</td>
</tr>
<tr>
<td>EEHC</td>
<td>Egyptian Electricity Holding Company</td>
</tr>
<tr>
<td>EHS</td>
<td>Environmental Health and Safety</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>ESAP</td>
<td>Environmental Social Action Plan</td>
</tr>
<tr>
<td>ESIA</td>
<td>Environmental and Social Impact Assessment</td>
</tr>
<tr>
<td>HRSG</td>
<td>Heat Recovery Steam Generator</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Cooperation</td>
</tr>
<tr>
<td>LRAP</td>
<td>Livelihood Restoration Action Plan</td>
</tr>
<tr>
<td>LFO</td>
<td>Light Fuel Oil</td>
</tr>
<tr>
<td>MWe</td>
<td>Mega Watt electrical</td>
</tr>
<tr>
<td>NCPP</td>
<td>New Capital Power Plant</td>
</tr>
<tr>
<td>OHTL</td>
<td>Over Head Transmission Line</td>
</tr>
<tr>
<td>OP</td>
<td>Operational Policy</td>
</tr>
<tr>
<td>UEEPC</td>
<td>Upper Egypt Electricity Production Company</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>NO₂</td>
<td>Nitrogen Dioxide</td>
</tr>
</tbody>
</table>
1. INTRODUCTION AND BACKGROUND

1.1 Introduction

For the aim of increasing the power generation capacities in Egypt, a new power plant is proposed to be constructed at Beni Suef. This power plant is within an agreement between Egyptian Electricity Holding Company (EEHC) and Siemens AG to construct and operate three combined cycle power plants of 4800 MW each at Beni Suef, El Burullus and New Capital.

Upper Egypt Electricity Production Company (UEEPC), a company affiliated to EEHC decided to locate Beni Suef Power Plant at a selected site along the Nile River and about 20 km south of the city of Beni Sueif just to the south of Izbet Ghayadah ash-Sharqiyah area. The site is within an existing piece of land allocated to the UEEPC by the Decree of the Beni-Sueif Governorate number 10838 issued on 9 September 2012 for the development of the power plant as shown in annex (2).

Beni Suef power plant will utilize natural gas as its primary fuel to generate 4,800 MW by a combined cycle mode. The construction activities of the power plant are supposed to be finalized within about one year from now so as the power plant is intended to be partially operational in open cycle mode by the middle of the year 2017 and fully operational in Combined Cycle mode by mid-2018.
One of the other projects implemented to support the generation of electricity in Egypt is the EG-Giza North Power Project, which is financed by the World Bank. To achieve this objective, the project has three main components:

- **Component 1**: The Power Plant Component, which is the construction of 2,250 MW Combined Cycle Gas Turbine power plant;
- **Component 2**: The Construction of transmission lines to connect the power plant to the national grid
- **Component 3**: The construction of gas pipelines to strengthen the gas supply network to ensure gas supply gas to the power plant.

After the completion of the procurement of all the packages financed by the World Bank, there were financial savings available as part of the project to be utilized by the Government of Egypt. The World Bank received formal requests from the government of Egypt to utilize the financial savings of Giza North Power Plant project to procure natural gas pipelines in order to upgrade the natural gas network. One of these pipelines is Wasta/ Beni Suef gas pipeline which will feed Beni Suef power plant (the subject of this study). One of the World Bank requirements to undertake an environmental and social due diligence to any associated facility to a bank-assisted project to ensure that it is conforming the World Bank guidelines under OP/BP 4.01. Beni Suef power plant is considered as an associated facility to Wasta/ Beni Suef gas pipeline project since it meets the World Bank criteria of identification of the associated facilities.

- Directly and significantly related to the Bank-assisted project (Wasta/ Beni Suef gas pipeline project)
- Necessary to achieve the objectives of Wasta/ Beni Suef gas pipeline as set forth in the project documents; and
- Carried out contemporaneously with Wasta/ Beni Suef gas pipeline project.

This report was undertaken to check and identify the current and cumulative environmental and social impacts of the power plant as well as to ensure that the proposed/implemented environmental and social mitigation measures, including monitoring and reporting requirements are satisfactorily conform to the World Bank guidelines under OP/BP 4.01. Accordingly, corrective measures will be proposed if required.
1.2  Project Description

1.2.1  Site Description

Beni Suef power plant is located at a selected site along the Nile River and about 20 km south of the city of Beni Suef just to the south of Izbet Ghayyadah ash-Sharqiyyah area. The power plant can be found at coordinates of 28°55'16.55"N and 31° 0'22.99"E on an area of about 361,791 m². Figure 2 shows the power plant layout and boundaries.

On the north side of the site is the Izbet Ghayyadah ash-Sharqiyyah, at around 1.5 km and the Izbet Bani-Khalil (about 10 km). On both of the south and the east sides of the site, there is a wide-extended desert land. On the western side of the site, a very narrow strip land parallel to the Nile River where the power plant's cooling water intake and discharge structures are located. The site is not located near any protectorates as the nearest protectorate is the Hassana Dome (Kobbet El-Hassana) scientific protectorate in Giza Governorate which is 90 km far north from the project site.

As mentioned above, and shown in annex (2), the site location was a governmental owned land and it was allocated to the UEEPC by the Decree of the Beni-Suef Governorate number 10838 issued on 9 September 2012 for the development of the power plant. However, some people benefited from the power plant land and they will be accordingly negatively affected from the project, so a livelihood restoration plan should be conducted and applied. The livelihood restoration action plan has been prepared by an independent expert and was planned to be submitted to the lenders by the 1st of June, 2016.
1.2.2 Technical Description

The overall generating capacity of Beni Suef Power Plant will be 4800 MWe as it will consist of four modules; each module is composed of two gas turbine units of 400 MWe capacity and a steam turbine unit of 400 MWe capacity. The power plant will be firing natural gas as a primary fuel and diesel oil (light fuel oil) as an emergency fuel. The natural gas will be supplied to the power plant through underground pipelines while the emergency diesel oil will be transported by trucks from Mustorod or Suez oil refineries.

The combined cycle power plant will consist of eight gas turbines generators; each of capacity 400MWe, eight heat recovery steam generators (HRSG) and four steam turbines generators; each of capacity 400MWe. The ESIA mentioned that the power plant will operate on once through cooling system using water abstracted from the Nile River but the system was then updated to cooling tower and an updated ESIA will be accordingly submitted to Egyptian Environmental Affairs Agency (EEAA) before the operational phase. The required water for service and HRSG will be supplied from the Nile River and will be used after pre-treatment and demineralization to provide process water makeup in the HRSG system. A sewage treatment facility on the site will treat sewage wastewater streams and produce an effluent suitable for discharge into the plantation irrigation system. On the other hand, all oil waste effluents will be collected into a separate network and sent to an oil separator, then will be sold to a petroleum Company.

The natural gas will be combusted in the gas turbines generating electricity and hot gases which will be directed to the heat recovery steam generators. The hot gases will boil the demineralized water in the HRSG producing steam which will generate electricity in the steam turbines generators. The exhaust steam from the steam turbines will be directed to a condenser which is cooled by wet cooling tower system, and then recirculated to the HRSG. The generated electricity will be fed to the national unified grid via the 500 kV switchgear to the 500 kV Over Head Transmission Line (OHTL) network.

The power plant has also been designed to comply with the international code of the National Fire Protection Authority (NFPA), which requires particular specifications for fire protection.
2. DUE DILIGENCE FINDINGS

2.1 Methodology

In order to achieve the due diligence objectives, the work methodology followed included conducting meetings with the relevant entities to gather the available data and documents related to the power plant, doing desk review for the relevant project documents, in addition to planning for a visit to the power plant site. The desk review was done to evaluate all the gathered documents and studies prepared for the power plant. On the other hand, a site visit to the power plant was planned to check and assess the environmental and social conditions during the construction phase.

2.1.1 Meetings

Table 1 First Meeting at EEHC

<table>
<thead>
<tr>
<th>Entity</th>
<th>EEHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees</td>
<td>Eng. Hekmat Abdulrahman Selim General Director of the Environmental</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dr. Ismaail El Sawy Senior Research Engineer at the Environmental</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dr. Mohamed Fathy Tash Environmental Assessment Department Manager,</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dr. Amr Abd El Aziz President, Integral Consult</td>
</tr>
<tr>
<td></td>
<td>Dr. Ahmad Wafiq Technical Team Lead, Integral Consult</td>
</tr>
<tr>
<td>Date</td>
<td>9/5/2016</td>
</tr>
<tr>
<td>Purpose</td>
<td>Gathering the available data and documents related to the 7 power</td>
</tr>
<tr>
<td></td>
<td>plants fed by the natural gas pipelines financed by the World Bank</td>
</tr>
<tr>
<td></td>
<td>(including Beni Suef Power Plant)</td>
</tr>
</tbody>
</table>

Summary

• EEHC clarified that all the power plants including Beni Suef Power Plant have already got the environmental approval from the Egyptian Environmental Affairs Agency (EEAA).

• The social status of the power plants regarding the land acquisition aspect was discussed. EEHC clarified that out of the three new power plants (New Capital, El Burullus, and Beni Suef), a livelihood restoration action plan is only required for Beni Suef (currently under development).

• EEHC will send to the due diligence consultant the EEAA approvals, lender approvals, land ownership documents, and Beni Suef livelihood restoration action plan once finalized.

• EEHC will also send to the due diligence consultant the contact details of the focal points inside the electricity production companies to get more specific data about each power plant.
The due diligence activities included reviewing the national legal requirements pertinent to the construction and operation of power plants in Egypt. In addition to that, the World Bank requirements concerning the environmental limits and standards were investigated as well as the social requirements.

(i) Applicable Egyptian laws and regulations

<table>
<thead>
<tr>
<th>Entity</th>
<th>EEHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees</td>
<td>Dr. Ismaail El Sawy</td>
</tr>
<tr>
<td></td>
<td>Dr. Maher Aziz</td>
</tr>
<tr>
<td></td>
<td>Graham Macdonald</td>
</tr>
<tr>
<td></td>
<td>Dr. Amr Abd El Aziz</td>
</tr>
<tr>
<td></td>
<td>Eng. Esraa El Mitainy</td>
</tr>
<tr>
<td>Date</td>
<td>24/5/2016</td>
</tr>
<tr>
<td>Purpose</td>
<td>Gathering the available data and documents related to Cairo New Capital, El Burullus and Beni Suef Power Plants</td>
</tr>
<tr>
<td>Summary</td>
<td>The meeting included discussion on the ESIs prepared for the three power plants.</td>
</tr>
<tr>
<td></td>
<td>The cooling system of Beni Suef power plant was changed to a closed cycle cooling tower instead of once through cooling system that was mentioned in the ESIA. This will be reflected in an updated final ESIA and shared with EEAA before the operation of the power plant.</td>
</tr>
<tr>
<td></td>
<td>The required permits for constructing and operating the power plants were requested to be checked and reviewed as they were not included in the ESIs. Dr. Ismaail ensured that the permits are secured and will be sent to the due diligence consultant for review.</td>
</tr>
<tr>
<td></td>
<td>The social status of the power plants regarding the land acquisition aspect was discussed. The meeting concluded that the construction of Cairo New Capital power plant did not include any action of land acquisition. On the other hand, Beni Suef power plant included land acquisition and livelihood restoration plans are being prepared and planned to be submitted to the lenders by the 1st of June, 2016. As for El Burullus power plant, no action was primarily taken, but at a recent stage of implementation, new land was acquired by the contractor, and a consultant was hired to investigate the status of the acquired land.</td>
</tr>
<tr>
<td></td>
<td>The due diligence consultant requested conducting site visits to the three power plants. They were asked to send their IDs for the permissions.</td>
</tr>
</tbody>
</table>

2.1.2 Desk Review

The due diligence activities included reviewing the national legal requirements pertinent to the construction and operation of power plants in Egypt. In addition to that, the World Bank requirements concerning the environmental limits and standards were investigated as well as the social requirements.
The Environmental Egyptian Law 4 of 1994 amended by Laws 9/ 2009 and 105/2015 (with its executive regulations amended by Decree 1095/2011 710/2012 and 964/2015) specifies the applications for a license for any project. According to the law, a full EIA must be prepared for the power plant and submitted to Egyptian Environmental Affairs Agency (EEAA) for consideration.

The executive regulations of the environmental law specifies the limits for different environmental aspects as ambient air quality, air emissions from the power plants stacks during operation, management of hazardous and non-hazardous solid wastes, ambient noise levels, air and noise quality in the work environment and wastewater discharge regulations to aquatic or marine environments.

According to the guidelines issued by the EEAA for the preparation of the EIA studies, Power Plants are categorized as facilities under Category “C”, which requires the preparation of a full EIA study.

(ii) Applicable World Bank regulations
In addition to the Egyptian Regulations, the World Bank operation policies were also considered in the process of reviewing the ESIA study underhand, as well as the IFC’s General Environmental, Health and Safety (EHS) Guidelines and the EHS Guidelines for Thermal Power Plants.

According to Operational Policy (OP) 4.01 - Environmental Assessment, the power plant project is classified as Category “A” project which requires the preparation of a full ESIA study. The different items included in the World Bank Operations Manual were reviewed by the due diligence team. Since Beni Suef power plant project is located on the Nile River Shore, which is considered as an international waterway, OP 7.50- Projects on International Waterways is applicable to this project. Also, as the power plant will cause livelihood restoration, OP 4.12- Involuntary Resettlement will also apply here.

(iii) Power Plant ESIA Study
The current project proponent is the Egyptian Electricity Holding Company (EEHC). The power plant is a 4800 MW capacity combined cycle power plant that is financed through the World Bank, African Development Bank and the European Investment Bank.

The ESIA is prepared by independent experts not affiliated with the project in accordance with the national regulations and requirements, and the requirements of the IFC Performance Standards, the World Bank and IFC EHS guidelines as well as the Equator principles (2013). However, until the time that this review was undertaken, the study has been presented and accepted by the EEAA, and changes are still expected as per the review and requirements of the financing agencies.
2.1.3 Site Visits

Beni Suef power plant is still under construction, as the construction activities commenced in February 2015 and is still in progress. The power plant is intended to be partially operational in open cycle mode by the middle of the year 2017 and fully operational in Combined Cycle mode by mid-2018. The due diligence team has requested having a visit to the power plant site; however, due to the lengthy procedure of visit permissions, and the tight schedule of the project, the team was not able to conduct a visit before submitting this due diligence report draft.

2.2 Environmental Findings

This section will include the environmental findings and outcomes resulted from reviewing all the gathered data and documents related to the power plant.

2.2.1 Permits and Licenses

The key permits required for the construction and operation of a power plant in Egypt are shown in the following table:

<table>
<thead>
<tr>
<th>Permit</th>
<th>Permitting Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction permit (for establishing power plant)</td>
<td>Regulatory Body</td>
</tr>
<tr>
<td>Construction permit (for buildings)</td>
<td>Markaz Wadi Sannur, Beni Suef Governorate</td>
</tr>
<tr>
<td>Environmental permit</td>
<td>Egyptian Environmental Affairs Agency (EEAA)</td>
</tr>
<tr>
<td>Water abstraction and discharge permit</td>
<td>Egyptian General Authority for Shore Protection, Ministry of Water Resources and Irrigation (MWRI) in conjunction with EEAA)</td>
</tr>
<tr>
<td>Stack construction permit</td>
<td>Armed Forces Operations Authority (Ministry of Defence and Civil Aviation Authority) and Ministry of Transport</td>
</tr>
</tbody>
</table>

All of these permits were not included in the ESIA, but during the second meeting of the due diligence team with EEHC, EEHC representative ensured that the mentioned permits are secured for Beni Suef power plant. However, until the time that this due diligence report draft was submitted, the due diligence team received only the following permits shown in annexes (1) & (2):

1. EEAA environmental permit for the development of the power plant
2. Ministry of Agriculture permit for the power plant land utilization

3. MWRI permit for water abstract from the Nile River during the construction phase

4. Beni Suef governorate decree of land allocation for UEEPC

2.2.2 Waste Disposal

According to the ESIA, the generated solid waste from Beni Suef power plant will be collected and evacuated by a licensed contractor as well as the hazardous waste that will be handled by a specialized contractor. Final disposal of wastes will be to waste treatment plants or local landfill sites, as agreed by the relevant Competent Administrative Authority.

The ESIA did not mention the exact offsite landfill site(s) that will receive the collected waste during the construction nor the operation of the power plant. In addition, the ESIA did not mention any technical details about the nature of such waste treatment plants.

2.2.3 Spill Control and Management

Based on the ESIA review, an occupational health and safety plan for the construction phase should have been prepared by the 4th quarter of 2015, and implemented at the 2nd quarter of 2016. In addition to that, an occupational health and safety plan for the operation phase should have been prepared by the 2nd quarter of 2015, and implemented at the 3rd quarter of 2016.

These plans should have been finalized and found on site for implementation and review when requested. Due to the inaccessibility of having site visit before submitting this due diligence report draft (because of the reasons mentioned above), the due diligence team did not have chance to check the availability of these documents nor to review them.

2.2.4 Occupational Health and Safety Management

Also, according to the ESIA, an oil spill contingency plan should be prepared by the 2nd quarter of 2015 and implemented by the 3rd quarter of 2015 to be applied during the operation of the power plant for monitoring and handling of the light fuel oil delivered to the site.

This plan should have been finalized and found on site for review when requested. Due to the inaccessibility of having site visit before submitting this due diligence report draft (because of the reasons mentioned above), the due diligence team did not have chance to check the availability of these documents nor to review them.
### 2.2.5 Air Emissions

According to the ESIA, ambient air measurements were conducted at five points at the boundary and the center of the project site to monitor and record the air quality at the project area. These measurements showed the concentration of the gaseous and suspended particulates (TSP, PM$_{10}$ and PM$_{2.5}$) pollutants in the project area before implementing the project. The results showed that the ambient air quality in the project area is complying with Egyptian limits and the World Bank limits.

In addition to that, an air dispersion model was conducted to predict the air quality at the project area during the operation of the power plant. This air model was performed only for nitrogen dioxide NO$_2$ as Carbon monoxide (CO), sulphur dioxide (SO$_2$), and particulate matter less than 10 microns (PM10) were considered negligible.

It worth noting that the design emission level of NO$_2$ of the gas turbines is 64 mg/m$^3$ which exceeds the World Bank standards (51 mg/m$^3$). The due diligence consultant was informed that this was wrongly provided from Siemens and was amended in later stages and the design emission level was taken 45 mg/m$^3$.

The air model results for NO$_2$ predicted that the overall NO$_2$ concentrations in the project area will be within the Egyptian limits and the World Bank limits.

Assuming that CO emissions will be negligible is not a common practice in power plants, and also contradicts with the expected emission inventory already mentioned in the ESIA.

### 2.2.6 Water Supply

Based on the ESIA, the water supply to Beni Suef power plant is supposed to be through water abstracted from the Nile River. There is no evidence submitted showing that there is a sort of agreement/coordination between Beni Suef power plant and MWRI in this regards. The due diligence consultant was informed that the permit is secured and will be sent for review; however, until the time that this review was undertaken, the due diligence team did not receive the documents.

### 2.2.7 Wastewater Discharge

The ESIA stated that the sewage wastewater during the operation of the power plant will be used for plantation program of landscaping the power plant site after being treated in the on-site treatment facility. On the other hand, there should be discharge stream for the wastewater resulting from the blow down of the cooling tower system. There is no evidence submitted showing that there is a sort of agreement/coordination between Beni Suef power plant and MRWI in this regards. The due diligence consultant was informed that the permit is secured and will be sent for review; however, until the time
that this review was undertaken, the due diligence team did not receive the documents. In addition, and since the once-through cooling system mentioned in the ESIA has been changed and updated to cooling tower system, an updated ESIA should be accordingly submitted to EEAA before the operational phase.

The design of the sewage wastewater treatment plant was not provided in the ESIA. The due diligence consultant was informed that an updated ESIA will be submitted before the operation of the power plant including the sewage treatment plant design.

2.2.8 Hazardous Waste Generation and Management

Although a natural gas power plant does not produce significant amounts of waste, the ESIA did not mention the hazardous waste that may generate during the construction and operation of the power plant. The ESIA mentioned only the procedures for storing and transporting the hazardous waste.

2.2.9 Baseline Survey

The baseline survey of the power plant included ambient air quality, ambient noise levels, aquatic environment, terrestrial ecology and aquatic ecology. The baseline survey for the power plant did not include soil or ground water analysis for the plant site. The due diligence consultant was informed that soil and ground water contamination investigation are currently conducted and will be finalized before the operation.

Water quality measurements were conducted at 3 locations in the River Nile at one day around the shore of the power plant to record the water quality before implementing the project. Since the due diligence team consider that the analysis frequency used is not enough regarding the big project’s scale and its direct effect on the River Nile, the team urges applying at least the quarterly analysis of the water quality mentioned in the ESMP during the construction phase in order to have a better representation of the water quality before the operation of the power plant.

2.2.10 Other Aspects

Based on the ESIA review, the due diligence team did not notice any negative comments for the following aspects:

- Operational and maintenance program
- Noise Emissions
- Solid waste generation and management.

According to the discussion with EEHC representative about the EEAA approval terms, the following positive point was mentioned:
- The EIA study for the power plant’s OHTL was already submitted by the Egyptian Electricity Transmission Company (EETC) and the EEAA approval was acquired. By the time this draft was submitted, the due diligence team did not have chance to check the availability of these documents nor to review them.

2.3 Social Findings

Based on the ESIA review and the meetings conducted with EEHC, this section will conclude the social findings related to Beni Suef power plant.

2.3.1 Land Acquisition

The power plant is located on an area of about 361,791 m² on a governmental owned land which was allocated to the UEEP C by the Decree of the Beni-Suef Governorate number 10838 issued on 9 September 2012 for the development of the power plant.

Based on discussions with the independent expert conducting the livelihood restoration plan, the due diligence consultant was informed that UEEPC conducted several compensations to different people for their land acquisition or livelihoods.

The reviewed ESIA did not include any of these contractual agreements done by UEEPC.

These compensations included:

(i) **Livelihood compensation**

UEEPC has settled the people who benefited from the power plant land and compensated their livelihoods. In addition to this, UEEPC offered as a part of the settlement a certain number of permanent jobs in the new power plant after operation. Annex (3) shows some of the contractual agreements between UEEPC and the people who benefited from the land.

(ii) **Developer compensation**

Based on the second meeting with EEHC, the due diligence consultant was informed that the south-eastern block of the power plant land was allocated to another developer, and this block was purchased from the developer and he was fairly compensated. Annex (4) shows the contractual agreement between the developer and UEEPC for the land acquisition.

(iii) **New purchased land**

To the north of the plant, an additional land was recently purchased by El- Sewedy (the main contractor) to be added to the power plant land. The land acquisition of this part was done through “willing selling and buying” and the owners of these lands were compensated according to the land activity; the poultry farm owner was given the
largest sum as he was compensated for the buildings as well as the land. Some of the owners were compensated through El- Sewedy directly and some assigned an intermediate person to be their representative in exchange for a percentage of the compensation.

(iv) Rented land

Other land areas were recently rented for a minimum of 3 years to be used as a laydown area by El-Sewedy and his sub-contractors during the construction period. This was done by “willing selling and buying” processes.
3. ASSESSMENT OF DUE DILIGENCE FINDINGS

3.1 Classification of Due Diligence findings

The following section will classify the due diligence findings into comments requiring urgent actions and less urgent comments that only require corrective actions.

3.1.1 Comments Requiring Urgent Actions

After reviewing the prepared ESIA and conducting meetings with EEHC representatives, and based on the data available till the submission of this draft, Beni Suef power plant is considered in compliance with the World Bank environmental and social standards. None of the comments mentioned in the previous section may pose any environmental or social threats on the successful construction and operation of the power plant. Applying the mitigation, monitoring and management measures mentioned in the ESIA will ensure the compliance with the World Bank standards for the lifetime of the power plant.

3.1.2 Less Urgent Comments Requiring Corrective Actions

<table>
<thead>
<tr>
<th>Item</th>
<th>Aspect</th>
<th>Comment (based on the ESIA review)</th>
<th>Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Key permits</td>
<td>All the key permits for the construction and operation of a power plant were not included in the ESIA.</td>
<td>The due diligence consultant was informed that the permits are secured and will be sent for review. Not all these permits have been received by the due diligence consultant.</td>
</tr>
<tr>
<td>2.</td>
<td>Baseline Survey</td>
<td>The baseline survey did not include soil and ground water analysis</td>
<td>The due diligence consultant was informed that complete soil and ground water contamination investigation reports are currently conducted and will be finalized before the operation.</td>
</tr>
<tr>
<td>3.</td>
<td>Water Supply</td>
<td>The water abstract</td>
<td>The due diligence consultant was informed that the permits are secured and will be sent for review. Not all these permits have been received by the due diligence consultant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental and Social Due Diligence for Beni Suef Power Plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>permit should have been provided.</td>
<td>consultant was informed that the permit is secured and will be sent for review; however, they are not yet received.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Wastewater discharge</td>
<td>The wastewater discharge to the Nile River permit should have been provided.</td>
<td>The due diligence consultant was informed that the permit is secured and will be sent for review; however, they are not yet received.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The design of the sewage wastewater treatment plants was not provided in the ESIA.</td>
<td>The due diligence consultant was informed that an updated ESIA will be submitted before the operation of the power plant including the treatment plant design.</td>
</tr>
<tr>
<td>5.</td>
<td>Air Dispersion model</td>
<td>The air model was only conducted for NO2 emissions, while no runs for CO emissions were conducted.</td>
<td>Since it is not expected that CO will not have a major impact due to complete combustion of natural gas, this issue is considered to be minor and no need for follow up action on it.</td>
</tr>
<tr>
<td>6.</td>
<td>Waste disposal</td>
<td>The ESIA did not specify the waste disposal facility used during the construction nor the operation of the power plant. In addition, no technical details about the “waste treatment plants” were provided.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Hazardous waste generation and management</td>
<td>The ESIA did not mention the hazardous waste that may be generated during the construction and operation of the power plant</td>
<td>N/A</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>8.</td>
<td>Spill Control and Management</td>
<td>A spill oil contingency plan should be in place on site.</td>
<td>The due diligence team was informed that this plan should be available onsite, however, due to the inaccessibility of having a site visit this could not be verified.</td>
</tr>
<tr>
<td>9.</td>
<td>Occupational Health and Safety</td>
<td>The occupational Health and Safety Plans (during construction and Operation) should be prepared and implemented for construction onsite.</td>
<td>The due diligence team was informed that this plan should be available onsite, however, due to the inaccessibility of having a site visit this could not be verified.</td>
</tr>
</tbody>
</table>
| 10. | Land Acquisition                         | N/A                                                                                                              | - An additional land was recently purchased by El-Sewedy (the main contractor) to be added to the power plant land.  
- An Additional land was acquired by El-Sewedy to be used as a laydown area.  
- The due diligence consultant was informed that an independent expert has been contracted to undertake the Livelihood Restoration Action Plan (LRAP). That document was planned to be submitted to the |
During the due diligence team meeting with EEHC representative it was mentioned that a detailed Environmental Social Action Plan (ESAP) was prepared for the power plant, however this document was not available for review.

### 3.2 Proposed corrective action plan

<table>
<thead>
<tr>
<th>Item</th>
<th>Aspect</th>
<th>Recommended action</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Baseline Survey</td>
<td>Preparing complete soil and ground water contamination investigation reports for the power plant site.</td>
<td>9 months</td>
</tr>
<tr>
<td>2.</td>
<td>Wastewater Discharge</td>
<td>Preparing complete design for the sewage treatment plants in the power plant.</td>
<td>9 months</td>
</tr>
<tr>
<td>3.</td>
<td>Wastewater Discharge</td>
<td>An updated ESIA is to be accordingly submitted to EEAA before the operational phase regarding the changed cooling system.</td>
<td>9 months</td>
</tr>
<tr>
<td>4.</td>
<td>Waste Disposal</td>
<td>Specifying the exact landfills that the project will dispose its hazardous and non-hazardous wastes (construction landfill, and landfill during operation phase) and finalizing the contractual agreements with them.</td>
<td>2 months for construction phase 6 months for operation phase</td>
</tr>
<tr>
<td></td>
<td>Land Acquisition</td>
<td>Preparation of the Livelihood Restoration Action Plan (LRAP) report detailing the methodology followed for the Livelihood Restoration process.</td>
<td>3 months</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>

Environmental and Social Due Diligence for Beni Suef Power Plant
4. CONCLUSIONS AND RECOMMENDATIONS

Based on the data available till the submission of this draft, Beni Suef power plant is considered to be in compliance with the World Bank environmental and social safeguards operational policies. None of the comments mentioned in the previous section may pose any environmental or social threats on the successful construction and operation of the power plant. However, the following recommendations need to be considered:

- Finalization of the LRAP report for the land acquisition process followed for the power plant site and additional land.

- Specifying the exact landfills that the project will dispose its hazardous and non-hazardous wastes (construction landfill, and landfill during operation phase) and finalizing the contractual agreements with them.

- Preparing complete soil and ground water contamination investigation reports for the power plant site.
ANNEX (1) KEY PERMITS FOR BENI SUEF POWER PLANT

Figure A-1 EEAA approval for construction and operation of Beni Suef power plant (1)
Figure A- 2 EEAA approval for construction and operation of Beni Suef power plant (2)
Figure A-3 Agriculture permit for the power plant land utilization – (1)
Figure A-4: Agriculture permit for the power plant land utilization – (2)
Figure A- 5 MWRI permit of water supply for Beni Suef power plant during the construction phase
ANNEX (2) BENI SUEF GOVERNORATE DECREE OF LAND ALLOCATION FOR UEEPC

Figure A- 6 Beni Suef Governorate decree of land allocation for UEEPC – (1)
Figure A-7 Beni Suef Governorate decree of land allocation for UEEPC – (2)
ANNEX (3) CONTRACTUAL AGREEMENTS BETWEEN UEEPC AND COMPENSATED PEOPLE FOR THEIR LIVELIHOODS

Figure A-8 Contractual agreement 1-1
Figure A-9 Contractual agreement 1-2
Environmental and Social Due Diligence for Beni Suef Power Plant

Figure A-10 Contractual agreement 2-1

[Text content of the document]

[Image of the document]
Figure A-11 Contractual agreement 2-2
الطرف الأول يضع يده على مساحة قدرها 814 م - من أملاء الدولة - وفقاً لأعمالها وراءها، وكان الطرف الثاني قد خصصت له مساحة قدرها 78 قفاذ من محافظة بني سويف لإقامة مشروع محطة توليد كهرباء عليها تقرار محافظة بني سويف رقم [10838-1] لسنة 2012.

ولا كان الطرف الثاني يرغب في إضافة مساحة وحدته السابقة للطرف الأول [المناطق] إلى المساحة المخصصة له للإذاة بإيام مشروع محطة كهرباء المزود إنشاتها، فبعد اتفاق الطرفان على أن يتنازل الطرف الأول عن هذه المساحة مقابل سلعيه بدرجة 2001 - 226 المليون ألف وربحية جمهورية مصر للخرج وطابق الأرض السلم بين المناطق وقد أقر بهيئة كهرباء البلاد والانتعاقد والتفاوض وقد اطقت على ما يلي:

أولا: المهمة السابقة جزء لا يتجزأ من هذا الاتفاق ومكملاً إضافياً.

ثانيا: قبل تنازل الطرف الأول [عن مساحة وقردها 814 م - مثابة ثمانية ورابعة عشر - سيماً والذية يضع يده عليها يزوره إلى الطرف الثاني وشريك الطرف الثاني خالد من الزوايا والمواصلات وروضه من أي حقوق أخرى عليها وكافة المعرفات.

ثالثا: تنازل الطرف الأول مقابل مبلغ قدره ثلاثون ألف وربحية جمهورية مصر للخروج رغم اتفاق الطرفين على الاستبقان هذه الأرض وزيادة الطرف الثاني ينتمي الأرض المذكورة بعالية فوق الطرف على هذا الطرف واستلام الشحن.

Figure A- 12 Contractual agreement 3-1
Figure A- 13 Contractual agreement 3-2
الطرف الأول يضع بعده على مساحة قدرها - 23 - من أرض الدولة وقد قام باستئصالها ويعزيل وكان الطرف الثاني قد خصصت له مساحة قدرها 78 فدانًا من مساحة مشروع مصنع كهرباء على بحيرة سويف. ظرف 2013 [متفق عليه]
وقد كان الطرف الثالث يرغب في إضافة مساحة وضع البداية للطرف الأول (المشترى) إلى المساحة المخصصة له كمصدر للطاقة. ثم حلول تهيئة مساحة 850 جنار لتكون للفضاء السفري المقترح في المنطقة وقد اتفق على ما يلي:

أولا: المهيد الباق جزء لا يتجزأ من هذا البنك تمكينا لإحكامه.

ثانيا: قبل وتنازل الطرف الأول عن مساحة قدراه - 22 - فقط ثلاثة وعشرين فرطًا عجزت على الطرف الثاني تسليم الأرض إلى الطرف الثاني علامة من الزوايا والتشريعات الموجودة أو أي حقوق أخرى عليها وكافة المعروقات.
Figure A- 15 Contractual agreement 4-2
Figure A-16 Contractual agreement 5-1
Figure A-17 Contractual agreement 5-2
契约

أقر أنا / مصر عبد العظيم محمد عرفه المقدم بناحية غيابية الشرقية - مركز بيا - محافظة بني سويف
والملقب ب بطاقه رقم تومي/226/20212824888

أولاً: يأتي قد قسمت ببلاط حياء مستحقات الفاتحة والدعاية مبلغاً 880 جنيه شملت الفاتحة و
الداخلة جنبة فقط لغير عن مساحة الأرض الكائنة ببايابة الشرقية مركز بيا محافظة بني سويف
حيث أصحح بدنه على مساحة 273 فرط والتنزيم تسليمها لشركة الرجاء القبلية لتمتع الكهرباء،

ثانياً: أقر بذلك هذه الأرض المستردة عنها لشركة الرجاء القبلية لتمتع الكهرباء، ممنج عينه
المواصفات والتفصيل وغيرها ونازل عنها مع الأفلاس أو المنتج أو الخلاف.

ثالثاً: أقر بذلك نندم بعدم الإعتراف مي أو من الغير على هذه الأرض وفي حالة حدوث ذلك
أكون مسؤولا سلبية قانونية.

وهذا القرار من بذلك.

الموقع فيه

Figure A-18 Contractual agreement 5-3
Figure A 20 Contractual agreement 6.2
Figure A-21 Contractual agreement 6-3
ANNEX (4) CONTRACTUAL AGREEMENT BETWEEN UEEPC AND THE DEVELOPER

Environmental and Social Due Diligence for Beni Suef Power Plant
(البنك الأول)

irákn al-thāliya

بكتير التصدع السابق جزء لا يتجزأ من هذا العقد.

(البنك الثاني)

نصمارات التصدعات:

1- قرار التنسيطي الصادر من محافظة بني سويف رقم:
2- محضر إجتماع لجنة الأمانة لأعمال الدولة الخاصة رقم 131 لسنة 1993 والمعدل بقرار:
3- 128 سنة 1993 رقم الجلسة 1171 تاريخ الجلسة 17 نوفمبر 1993
4- محضر استلام من محافظة بني سويف للأرض محل النزاع.
5- نصم مجلس إدارة المشروع الأول تنصيف الدكتور رئيس مجلس الإدارة على التوفيق على النزاع.

(البنك الثالث)

وافق النزاع الأول على النزاع الثاني بوجب هذا التوفيق عليه نظرة: الأرض والمحمد والمحشرة. بـ 20 فدان بمبلغ وقفة 2,000,000 جنيه. حيث كانت خمسة عشر مليون جنيه مصري

(البنك الرابع)

يتم حفر النزاع الأول على تخليص المستخدمات الظاهرة على تخليص قطعة الأرض محلعقد النزاع والنزاع عن الاقتباس الطلبية ضد المحافظة والأعمال وكذا النزاع عن الأرض محلعقد النزاع.

(البنك الخامس)

يقوم النزاع الثاني بتسمية المستويات المشتركة بالأرض الخاصة بالمشروع لدى محافظة بني سويف وإدارة الأعمال بالإضافة إلى تكاليف إجراءات التصالح فإلى استعداد هذه الجهات (من ضمن مبلغ 5 ملايين جنيه الاقتراض) (بناءً على الثالث).
Environmental and Social Due Diligence for Beni Suef Power Plant
Environmental and Social Due Diligence for Beni Suef Power Plant
Environmental and Social Due Diligence for Beni Suef Power Plant

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السيد / السيدة

غدًا:

تركتrimme 7/16/2015 في 11/15/2015 بطلب الطالب المقدم من الشركة القابضة لكهرباء مصر للموافقة على تخصيص مساحة 15 فدان أمانا دولة السابق تخصيصها لمشروع البحر المتوسط لبرامج التمثيلية المستدامة بناية غضبها مركز ببا على اللجنة الدائمة للبلد المشتركة بقرار المحافظة رقم 331 لسنة 1993 بجلستها.

بحث كما أشار في،ة زاردر،تى 1972.

بناء على ما تم عرضه من مدير الإمكانيات تدى اللجان للمواقف على التأكد من علم محمد حسنين رئيس مجلس إدارة مشروع البحر المتوسط إلى الشركة القابضة كهرباء مصر عن مساحة 15 فدان أمانا دولة بناء غضبها مركز ببا لغرض استغلالها في島 Marx مشروعي محطات الكهرباء، وذلك بإعادة اتفاق مع الواقع 4.8 للمتر المربع سنويا على أن تكون لقيمة بواقع 5% سنويا.

باللقاء،

محمد علي، مرسي

مدير،