



Environmental and Social Review Summary

Ashuganj Power Station Company Ltd. (APSCL)

This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed prior to the date on which MIGA's Board of Directors considers the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA's activities. This document should not be construed as presuming the outcome of the decision by MIGA's Board of Directors. Board dates are estimates only.

Any documentation that is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.

Country:	Bangladesh
Sector:	Power
Project Enterprise:	Ashuganj Power Station Company Limited (APSCL)
Environmental Category:	A
Date ESRS Disclosed:	September 6, 2012
Status:	Due Diligence

A. Project Description

The Hong Kong Shanghai Banking Corporation (HSBC) of Hong Kong, China has requested MIGA to provide an NHSFO guarantee for its investment in the construction of a 450 MW combined cycle gas-fired plant (CCPP). The Ashuganj South CCPP ("Project") will be owned by the Ashuganj Power Station Company Limited (APSCL), a wholly state-owned enterprise of the Bangladeshi Government. The construction of a 450 MW combined cycle gas-fired plant (CCPP), on the basis of an EPC contract, was awarded to a consortium of the TSK Electronica y Electricidad S.A. (Spain) and Inelectra International AB (Sweden) by the APSCL.

The Ashuganj Power Station complex (owned and operated by APSCL) currently has a total capacity of 774 MW. The complex is situated by the River Meghna on approximately 311 acres of land located about 75km away from Dhaka. The APSCL power station complex at Ashuganj comprises steam power plants of 2x64MW units, 3x150MW units, and a combined cycle power plant of 90MW (56MW+34MW) with 1x56MW additional gas turbine unit. Recently, four more gas consuming power plants run by internal combustion engines with total capacity of 230MW have been built, of which 50MW by APSCL and 190MW by others as rental power plants. Three are within APSCL premises and one outside. The total capacity at Ashuganj is now 968MW (including the rental plants). All of these power plants use indigenous natural gas as fuel. The proposed project will be located on vacant land on the south side of the APSCL premises and is known as the "Ashuganj South" installation, which will add capacity at the existing Ashuganj power station complex.

The existing APSCL facility was built in the 1960s and it is currently relying on the refurbishment of used parts which has resulted in poor performance with substantially reduced thermal efficiency and reduced power availability. Aside from the 3×150MW units all of the smaller steam units have deteriorated over time. At present a 225MW CCPP and 450MW CCPP were approved for construction by the Bangladeshi Government. In addition, the APSCL has decided to install the same 450MW CCPP (“Ashuganj North”) unit on site beside the proposed Project. The Asian Development Bank has been involved in supporting this plant called the Ashuganj North plant.

Through implementation of these projects APSCL’s total generation capacity in future could potentially be 1550MW without the rental power plants. It is intended that the gas turbine unit for the proposed 450 MW CCCPP south project will be fired continuously with natural gas through feeder lines from Titus Gas Transmission and Distribution Ltd. For the proposed Project, two new gas pipelines, each at 600m long, will be constructed along with gas supply system within the APSCL premises and power will be evacuated using existing transmission lines. When the new installations have been completed the APSCL will decommission the older plants. Therefore, the focus of MIGA’s environmental and social due diligence is the construction and operation of the 450 MW CCCPP South project and associated gas pipelines.

B. Environmental and Social Categorization

The proposed construction of a new 450 MW combined cycle gas fired power plant on the existing site of the Ashuganj Power Plant complex could potentially have significant environmental and social impacts during both construction and operations phases. The project will also rehabilitate and replace old existing power plant infrastructure. The identified environmental and social issues associated with the proposed project include: environmental and social management, aquatic ecology, air pollution, noise and vibration pollution, water quality/pollution, solid waste, and worker/community health and safety. The site for the main power plant development is currently owned by APSCL, and therefore there are no issues relating to land acquisition at this stage of project development and no people will be physically or economically displaced as a result of the development. Most impacts will be managed by adhering to generally recognized standard operating procedures, guidelines, or design criteria. Although these impacts are not expected to be significant, the project is categorized as A as the potential size and magnitude of entire power plant complex and lack of aquatic ecological baseline data will require close adherence to environmental management plans as it relates to thermal pollution.

HSBC is the coordinating arranger for financing of the Project and one of the prospective lenders of the lending consortium with other international banks. HSBC has adopted the Equator Principles (EqPs). As part of this commitment it commissioned an independent technical and environmental due diligence for the Ashuganj South 450MW CCPP.

C. Applicable Standards

While all Performance Standards are applicable to this investment, based on our current information, the investment will have impacts which must be managed in a manner consistent with the following Performance Standards:

- PS1: Social and Environmental Assessment and Management Systems
- PS2: Labor and Working Conditions
- PS3: Pollution Prevention and Abatement
- PS4: Community Health, Safety & Security
- PS6: Biodiversity Conservation & Sustainable Natural Resource Management

The site for the power plant development is currently owned by APSCL. There are no issues related to land acquisition at this stage of project development and no people will be physically or economically displaced as a result of the development. Therefore PS 5 is not applied. The EIA confirmed that no indigenous people will be impacted by the development nor will it impact on traditional, customary lands or cultural resources. No indigenous people live in the area, therefore PS 7 does not apply. No remarkable archaeological or historically important structures were identified in the area and the probability of finding significant cultural resources in the project zone is low, therefore PS 8 does not apply. However, a chance finds procedure for the construction phase will be developed.

In addition to the General Environmental, Health and Safety Guidelines, the World Bank Group Environmental, Health and Safety Guidelines for Thermal Power Plants apply to this project.

D. Key Documents and Scope of MIGA Review

The following documents were reviewed by MIGA:

- Environmental Impact Assessment (EIA) Report and Feasibility Report 450MW CCPP APSCL South, Atlanta Enterprise Limited, June 2011
- Social Impact Assessment (SIA) Report 450MW CCPP APSCL, Atlanta Enterprise Limited, June 2011
- Test Result of River Water and Channel water From Technical Specifications 11 June 2012
- Health & Safety periodic Monitoring report, APSCL 21 January 2012
- Grievance Handling Mechanism APSCL, January 2012
- Plant performances related to environment EPC-Consortium 27 October 2011
- APSCL- Service rules APSCL, June 2011
- Health and Safety plan TSK & Ingemas, June 2012
- Integrated Management Systems, TSK Group, July 2011
- Corporate Social Responsibility Policy, TSK, May 2010
- 450 MW Gas-fired Power Project, Ashuganj Bangladesh, Draft Due Diligence Report – Environment & Social, HSBC, July 2012
- Lenders' Independent Engineers (LIE) Report, The Fatal Flaw Report, HSBC, July 2012

MIGA's environmental specialist visited the project site in July 2012. The mission held discussions with staff at the APSCL, lender and lender's E&S specialist and the national Ministry of Environment. Where possible, the lender's environmental and social due diligence process and findings were coordinated with MIGA's due diligence.

E. Key Issues and Mitigation

PS1: Social and Environmental Assessment and Management Systems

Social and Environmental Assessment:

An Environmental Impact Assessment (EIA) report was prepared in 2011 that includes a Social Impact Assessment (SIA) that identifies and assesses social impacts and issues, both adverse and beneficial, associated with the Project. Based on this approved EIA, the lenders independent consultants undertook an environmental and social assessment against MIGA's Performance Standards and the Equator Principles. For the purposes of the lenders draft environmental due diligence report, various documents provided by APSCL/EPC Contractor were examined and reviewed in detail, including the EIA, SIA and other related documents. Project impacts on air, CO₂ emissions, water resources, noise pollution, ecology, community engagement, health and safety etc were examined. The draft report identifies actions to be undertaken that follow the development timing of the project, i.e. actions required prior to construction, throughout construction and through to operations phases and reporting requirements for submission at periodic intervals. A schedule for the development of the key actions has been presented to MIGA and it is expected that the outstanding issues will be addressed by APSCL and the EPC contractor to ensure consistency with MIGA's Performance Standards.

Management Program and Monitoring:

The EIA identifies the major impacts and proposes mitigation measures, however, a detailed Environmental and Social Management and Monitoring Plan (ESMMP) for construction and operations is still forthcoming. A detailed ESMMP for construction will be prepared by the EPC Consortium and submitted to APSCL and MIGA for review prior to commencement of works. The EPC contractor applies an Integrated Management System, based on ISO 9001, ISO 14001 and OHSAS 18001 standards. Based on these systems, a framework ESMMP will be developed to guide the EPC-Consortium in preparation of the supporting plans for the detailed ESMMP. Building on this, an ESMMP will also be developed for the operational phase based on the findings of the EIA and lender's due diligence report prior to commissioning. The ESMMP for operations will include an ongoing environmental monitoring program during operation to include water quality, air quality and noise monitoring and aquatic ecology.

A monitoring and reporting program will be developed and included within the project ESMMP, both for construction and operation. Daily and monthly environmental checklists will be developed for construction monitoring and reporting. The frequency of sampling for some of the ongoing operational monitoring will be established. APSCL recently started the process for ISO certification as there is currently no formal environmental management system in place. A timetable for certification completion will be developed prior to construction and submitted to MIGA.

Organizational Capacity and Training:

Certain responsibilities and authorities for training in environmental management and monitoring during construction and operation have been provided within the Technical Proposal Document submitted by the EPC- Consortium (Inelectra and TSK Group). The EPC contractor has had previous experience in country and the APSCL could benefit from this in terms of environmental and social management as the APSCL has the overall responsibility for E&S performance of the entire complex. Thus, it is anticipated that this project will provide an opportunity to strengthen and formalize overall E&S management. The EPC Consortium will be responsible for implementing the ESMMP including the monitoring program and for the preparation of monthly reports regarding implementation. The Project management team has the responsibility to arrange training of personnel. Staff for the project will receive the training and experience needed for the job. The same will be required for the project teams and personnel of the suppliers.

PS2: Labor and Working Conditions

There are 559 workers employed by APSCL for current operations. Approximately 1,000 workers will be required for the construction of the Ashuganj South project. The EPC – Consortium foresees the employment of the local workforce plus a number of expatriate technical experts. With the plant in place, an additional 92 staff will be recruited for the operations phase. APSCL's Service Rules provide information on the general conditions of service and the mechanisms by which all employees will be informed of their working conditions and employment terms, employees' rights, rights to wages and benefits and information on national labor and employment laws. APSCL and its key contractors only hire workers who are 18 or older.

APSCL has an employee fund governed by the Employees' Contributory Provident Fund Regulations. These regulations set out the requirements whereby every employee in full time employment with the Company has the right to participate in this fund with a rate of subscription of 10% of his/her pay. The objective of this fund is to provide every employee with a sum of money for the worker's benefit and worker's family on the termination of service with the Company. Employees also receive residential accommodation or house rent support. Where feasible the Company provides a residence to the employee (and family) in a building owned or leased by the Company. In other cases, the employee will be entitled to receive a house rent allowance at 25% of his/her basic pay. In addition, under the Fringe Benefit Policy the employees are entitled to other benefits such as receiving subsidized electricity, gas, telephone among others benefits. From the information provided in the Service Rules the project will provide reasonable working conditions and terms of employment consistent with PS 2.

APSCL has a documented grievance mechanism for workers. This mechanism allows employees to raise any type of concern regarding their working environment. This can be done anonymously through the use of drop-in boxes set out in different parts of the plant or by raising the issue directly with their superiors. This grievance mechanism is communicated and made available to all employees at the time of hiring.

Written procedures for occupational health and safety (OHS) issues have been developed for construction. The EPC Consortium will be required to provide OHS training to construction staff prior to them commencing work. Within the Technical Report for the proposed project the EPC-

Consortium (INELECTRA – TSK) stated that they will conform to the requirements of ISO 14001:2004, OHSAS 18001:2007, and all respective legislation as applicable for the scope of work and has identified the following responsibilities:

- Compliance with relevant legal requirements
- Preparation and Implementation of the Project Specific Environmental, Health and Safety Plan
- Enforcement of the EPC–Consortium site rules
- Monitoring the activities of all Subcontractors with regard to EHS, and maintaining corresponding records
- Providing safety infrastructure and personal protective equipment
- Job risk analysis are carried out and appropriate training provided

APSCL operations OHS management will be enhanced with the addition of the Project. The current General Regulations and Standard Operating Codes including Safety Practices (1992) currently in use by APSCL will need to be revised to be in line with operating specifications for the new units. There has been one fatality in the last 20 years of operations at the complex. With the new project, APSCL's OHS policies and procedures will be strengthened to be in line with MIGA's Performance Standards.

Emergency preparedness and response plans have been provided for review for current on site activities. Prior to commencing activities on the site, project emergency plans will be developed and submitted to MIGA to address incidents that may occur at either the project or adjacent industrial sites. Emergency environmental action plans will be in place should bulk fuel spillage from storage tanks (back-up fuel), pipelines or treatment facilities, on site or off site chemical spillage from storage tanks, pipelines or treatment facilities, and major fire, involving chemicals, fuel, waste oil or any other combustible substance stored in bulk at the site.

PS3: Pollution Prevention and Abatement

Air pollution, noise pollution, water quality/pollution, and solid waste are the main environmental issues associated with the proposed project.

Air: The analysis provided in the EIA was carried out considering the cumulative impacts of the project and the complex. It included all existing power plants including the 146MW CCPP & 2x64MW steam power plant 3x150MW Steam Power Plant, 50MW Power Plant and 190MW IPP. The EIA identified the potential gaseous pollutants of concern for this type of project: sulphur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO) and carbon dioxide (CO₂) The EIA states that Bangladesh indigenous gas contains no dust and virtually no sulphur. As a result, there will be negligible SO₂ or particulate emissions in the exhaust gas from the plant.

An ambient air quality test report for the project area was undertaken on 20 June 2011 showing concentrations of PM_{2.5}, PM₁₀, SPM, SO₂ & NO_x below the allowable limits set by the Bangladesh National Air Quality Standards and the WHO air quality guidelines. Although the monitoring indicates that concentrations are below the relevant standards, it appears that monitoring was undertaken for a very short period of time. Such a short period does not allow for

potential longer term fluctuations in meteorological conditions or local emission sources which could have a significant impact on pollutant concentrations, and therefore the conclusions of the baseline assessment. A more robust monitoring scheme will be put in place prior to finalizing the plant design to support these conclusions and stack height will be adjusted accordingly.

The EIA states that cumulative NO_x emissions will be reduced as the proposed new plant will be of advanced design and will use a dry low NO_x (DLN) burner limiting formation of NO_x. The World Bank EHS Industry Specific Guidelines for Natural Gas Thermal Power Plants (2008) sets emissions guidelines for NO_x of 51mg/Nm³ (25ppm) at 15% O₂. Although the data provided in the EIA does not confirm NO_x emission levels will comply with these international standards, the EPC Consortium has guaranteed in their Technical Proposal that emissions will comply with the WBG Thermal Power Plants EHS Guidelines, which therefore suggests emissions will be compliant.

A desk based hypothetical exercise was carried out based on mathematical calculations and comparison studies based on dry low NO_x (DLN) burner, water injection or selective catalytic reduction (SCR) and a stack of 40m height. The result of this test shows ground level concentration of NO_x at various downwind distances, to be between 41µg/m³ and 46 µg/m³, (the averaging period is not given) which when added to existing reported ambient air quality would still result in ground level concentrations being below the national standard. The study concludes that the contribution is very low, irrespective of ambient NO_x concentrations and is likely to represent a negligible addition to local air quality. However, when considering the emissions in addition to the ambient air concentration present, they do represent a considerable increase in the levels of NO_x, although the resulting ground level concentrations are still below the national standards. Prior to finalizing design, further air quality modeling will be carried out and independently reviewed to determine the appropriate stack height to enable adequate dispersion. In accordance with the IFC General EHS Guidelines, the stack height will be designed according to Good International Industry Practice (GIIP) and/or confirmed using an approved Gaussian dispersion model.

The area is predominantly sandy-clay soils which can pollute the air in the event of winds with dust and particles and also due to the movement of light and heavy transport vehicles required for construction. Mitigation measures will be applied to reduce health risks to people on site; such as undertaking the construction phase primarily during wet season and implementing dust control procedures during dry periods.

Greenhouse gas emissions: Due to the design of the proposed power plant utilizing the optimum efficiency provided by the combined cycle process, there will be less CO₂ emission per unit of energy (kWh) generated than many other thermal power production technologies. At full capacity, CO₂ emissions calculated for the project is 1,335,600 tons per year. When compared to international standard, the estimated CO₂ emissions for the new power plant is considerably less than emissions from a coal fired power plant and it also meets the criteria when assessed against similar technology. Quantification and monitoring of GHG emissions will be conducted annually in accordance with internationally recognized methodologies.

Water: Water supply has been studied in detail and it was found that adequate water is available from the Meghna River to support a once-through cooling system for the proposed power station. The hydrological data used in the EIA was collected from Surface Water Processing Branch of

Bangladesh Water Development Board (BPDB), for the years 1985 to 2008 for the Meghna River confirming availability of water to be adequate for the cooling of the steam turbines. Domestic waste waters will be treated on site through the wastewater treatment plant proposed and then discharged to the municipal sewer.

Thermal Pollution during Operation - The EIA estimates that all power plants operating together will draw over 56.4m³/sec of river water and the same amount of water will be discharged at a temperature of 37.5°C. The average river temperature is reported to be 30°C. This represents an average of 7°C increase to the average river temperature. The EIA states that in the mixing zone, due to instant mixing the temperature will be reduced to 34°C and that this increase in water temperature will not have any significant impact on river water temperature. Down river the temperature will reduce to almost river water temperature. These conclusions were not based on any thermal plume modeling. Prior to finalizing design, modeling will be undertaken to determine the environmental impact of the heated water to be discharged into the river Meghna and to identify appropriate discharge measures.

The project is committed to model its thermal discharge plume and to undertake baseline aquatic studies to establish the current status of the aquatic ecology. An aquatic ecology survey will be undertaken as soon as possible to record the existing state of key habitats and species. This survey will be used as a baseline for monitoring the impacts from the project's operations. Subject to the findings of the survey, ecology surveys (including habitat and species surveys) will then be undertaken at regular intervals, e.g. twice a year, for three years, to record any degradation in the marine biodiversity surrounding the site. If surveys note a decline in indicator species/degradation of habitats then additional mitigation measures will be developed and implemented through the Environmental and Social Management Plan to reduce further impacts. If no impacts are detected the survey frequency will be reduced and ultimately ceased. This approach will also stand to provide the necessary evidence to protect the project from claims against the power plant from a degradation of biodiversity and fish stocks. The findings of the modeling and baseline studies will also be used to determine appropriate discharge practices.

Noise: Ambient noise analysis was undertaken in June 2011 for the proposed development area. The results demonstrate that values are below the Bangladesh Department of Environment (DoE) standards. It is not clear over what period noise was monitored and if other nearby industrial/power plants were operational at the time of monitoring. There is no evidence of the type of methodology or monitoring protocol was used and this information has been requested.

Noise during construction - Noise and vibration are normally generated from construction activities such as piling of foundations, crushing of stones and bricks, installation of machines and equipment and by the use of heavy machinery. The ESMP will include appropriate noise reduction measures and/or consideration of noise barriers between the site and the residential houses on site.

Noise during operation - The EIA states that noise levels at the boundary of the power plant are "expected to be around 65dB", which is within the limit of Bangladesh Standard for Industrial Zone for daytime (75dBA) and night time (70dBA). This proposed noise level also complies with the IFC EHS Noise Guidelines (70dB(A) day and night for industrial areas), however this statement is not substantiated as there is no evidence that a Noise Assessment has been carried out. The EIA also states that when the all the units in operation and all the rental power stations

are taken out of service, the noise and vibration levels are likely to be less than the figures proposed to date (ie.65dBA). Prior to final design and/ or start of construction, a detailed noise impact assessment, including consideration of the affects of decommissioning of any units and limits for mixed use residential/industrial areas, will be undertaken. The assessment will also consider construction noise impacts.

Certain mitigating measures have been identified such as putting baffle type silencers in both inlet duct and exhaust duct to arrest noise due to airflow and exhaust gases respectively. The noise due to running of the machine will be arrested by acoustic enclosures. These measures as well as those coming from the detailed noise assessment will be included in both the construction and operations ESMP.

Legacy contamination: Given that the land is within the boundaries of the APSCL industrial compound and the historical land use is not known, the land could have been contaminated from other activities carried out on site previously. The risks associated with contaminated land for the site for the power plant is considered medium. There are two redundant buildings on site and the possibility of asbestos within these buildings has to be considered. A soil and groundwater survey will be undertaken for the Project site to establish existing ground and groundwater quality and ensure there is no liability for existing contamination. The buildings that may need to be demolished will be inspected for asbestos by a suitably qualified and experienced professional. The project will carry out ongoing groundwater monitoring throughout operations.

Gas fired power plants tend not to handle many hazardous materials, however some types of hazardous goods used during construction and operations may represent some risk. Gas handling on site will carried out according to appropriate design safety standards and procedures for storage, handling, and disposal.

Waste: The majority of wastes will be produced during the construction phase. These wastes will include materials such as bricks, concrete and scrap metals. Should contaminated wastes be generated then these will be disposed of at appropriate hazardous waste disposal sites. Recyclable waste materials will be collected separately. Waste generated during operations will include paper, packaging materials and food wastes. A project specific Waste Management Plan will be developed for both the construction and operations phase.

PS4: Community Health, Safety & Security

The APSCL power plant complex is also home to a community or “village” (within the site) of about 600 families, primarily from the employees. There is a primary school and high school (1,000 students) and one health centre (3 doctors). Approximately 60% of the school population lives within the complex and about 40% come from neighboring communities. The EIA concludes that there is a negligible risk to public health except in serious emergency cases, and that appropriate plans and policies will be developed to mitigate or avoid risks. Certain issues were raised during public consultations such as the fear of a gas explosion. Both the APSCL and local authority will coordinate on the strengthening and execution of the plans.

The feasibility study states that the perimeter of the project will be fenced including camps (if required), offices, materials and equipment storage. The occupied area of the facilities described

above will be permanently secured. With respect to fire prevention, facilities are considered to be in appropriate locations. Smoke detectors and appropriate fire extinguishers are to be distributed in buildings and work areas. Community health and safety will be coordinated with local municipal bodies such as the fire service, police and ambulance. These commitments will be elaborated into detailed plans and procedures.

Potential for community exposure to hazardous materials will be minimized. Although there will be a limited amount of hazardous materials stored on site, APSCL will liaise with the necessary competent authorities to obtain available information on exposure levels of those materials which are known to cause non communicable disease and information on risks, exposure, mitigation measures and monitoring procedures should be communicated to the public.

It is considered that communicable diseases that could be transmitted by workforce (including contractors) will be minimal due to the use of a local workforce who will not be housed away from home. Additionally, implementation of effective on site environmental management and design will minimize/prevent impacts to local communities.

The existing main road network to the project site has been observed to be in good condition. The movement of vehicles for transportation of parts and construction materials will be constrained within the project boundary. A traffic management plan will be implemented during construction as unusually high numbers of vehicles will be operating and a large construction work force will be within the site boundaries. Traffic movements during operation will be limited to personnel and maintenance vehicles and it is considered that the existing road network has sufficient capacity to accommodate such movements without significant impact. The EIA confirmed that a permanent jetty with a crane of capacity 200 tons at the river bank near the APSCL complex could be available if major rehabilitation work takes place. Equipment and materials will be transported to site by existing roads and working rivers.

Flood is a common phenomenon throughout Bangladesh. Every year certain areas of the country are subjected to flooding. The EIA states that the land used by the existing Ashuganj Power Plant and its electrical distribution system have never been exposed to flood water. A flood study has not been provided and a site survey confirmed the existence of two ponds in the proposed project location. This can potentially signal flood risk also due to the fact that the project area is next to the Meghna River. It is understood that the ponds will be drained for the proposed power plant construction. Further information about this process may be required in order to understand where this water will be discharged to and if the area will require constant water pumping in order to keep the land dry. A Flood Management Plan will be developed undertake necessary disaster management to protect the properties from water logging/flood and that all structures will be elevated taking the highest flood level into consideration.

Security Arrangements: There are two groups of security personnel for current operations on site and for surrounding area. The Government of Bangladesh provides approximately 60 military personnel and there are about 36 unarmed trained security personnel. Military personnel engaged at the APSCL site by an executive order of the government. The entire complex is also equipped with CCTVs.

PS6: Biodiversity Conservation & Sustainable Natural Resource Management

The project site is on existing industrial land considered of minimal biodiversity importance and the areas around the existing and proposed plant are not considered significant in terms of flora and fauna. It is concluded that the project will not have any significant impact on habitats or

The EIA identified flora and fauna in the project area. The predominant ecological setting of the wider area is wetland, homestead and roadside vegetation. The study concludes there are neither wildlife sanctuaries nor any reserve forest or areas of particular ecological concern in the area of influence of the project. Maps provided in the EIA illustrate that no protected habitats or reserve forests occur within 50km of the site.

The River Meghna provides a habitat for a wide variety of fish and shellfish species. According to water quality data provided by the DoE, the existing water quality of the river upstream from the plant is relatively good. The Ashuganj Fertilizer Complex is located about 2 km downstream from the power station complex. Further studies on the thermal pollution caused by cooling water discharged to the river will need to be undertaken to fully assess the impacts that the rise in temperature could have on the variety of aquatic species. See PS3 above.

F. Environmental Permitting Process and Community Engagement

The Bangladesh DoE categorizes power generation projects as “Red Category” of industrial processes for which an Initial Environmental Examination (IEE) and EIA is required. The DoE exempted the IEE and approved the Terms of Reference for the EIA in the document no. DoE/Clearance/5080/2010/116 dated 25-05-2011, therefore waiving the requirement for a detailed screening and scoping process. The EIA was reviewed by the Bangladesh authorities and a permit was granted on 31 May 2011.

Consultation was carried out early in the project development process and for the SIA. Several surveys were carried out on the basis of Participatory Rural Appraisal. The SIA identifies a number of stakeholders, however does not include specific information on the NGOs and local government bodies that are located within the area of impact and those who have expressed an interest in the project. The APSCL is a long standing member of the community and maintains a communication protocol with relevant stakeholders. Although within the SIA there is documented evidence of stakeholder engagement, a formal stakeholder engagement plan (SEP) has not been developed. The existing stakeholder consultation/disclosure process will be articulated within a SEP and include stakeholders identified by the project company as directly affected and vulnerable people. A SEP will be developed to include the consultation and disclosure activities that will occur through the project preparation and implementation including grievance procedures.

G. Availability of Documentation

- [Environmental Impact Assessment \(EIA\)](#) Report and Feasibility Report 450MW CCPP APSCL South, Atlanta Enterprise Limited, June 2011

- [Social Impact Assessment \(SIA\)](#) Report 450MW CCPP APSCL, Atlanta Enterprise Limited, June 2011

The above listed documentation is available electronically as PDF attachments to this ESRS at www.miga.org. It is also available for viewing at the local office of Ashuganj.