

Environmental and Social Data Sheet

Overview

Project Name:	BANGLADESH POWER ENERGY EFFICIENCY
Project Number:	2012-0279
Country:	Bangladesh
Project Description:	The project consists of converting 3 natural gas fired open cycle power units to combined cycle mode of operation by the addition of heat recovery boilers and steam turbines. The existing generation capacity of the plants is 320 MW which will increase to 480 MW as a result of the conversions, roughly a 50% increase. The conversions will also result in efficiency improvements of the order of 75% without any additional fuel consumption. The plants are located in the Rajshashi and Sylhet regions of Bangladesh, roughly 200km to the north-west and north-east of Dhaka respectively.
EIA required:	Yes (according to Bangladesh regulations)
Project included in Carbon Footprint Exercise ¹ :	Yes
(details for projects included are provided in section: "EIB Carbon Footprint Exercise")	

Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

If the project components were located in the EU, they would fall under Annex II of the EIA Directive leaving it to the competent authority to determine the need for an EIA. However, in accordance with Bangladesh environmental regulations an EIA will be required for each of the power plants. The EIA process has commenced with the preparation of an Initial Environmental Examination – or environmental scoping. This will be followed by the Environmental Impact Assessment (EIA) which is required in order to obtain the Environmental Clearance Certificate (ECC). The environmental documentation is being prepared by a local environmental consultant with project preparatory technical assistance being provided by the Asian Development Bank.

The project is not expected to have any significant negative incremental environmental or social impacts as the new plant will be located within, or immediately adjacent to, existing power stations. As it is an energy efficiency project no additional atmospheric emissions will result due to the conversion to combined cycle and compared to the alternative solution there will be a relative reduction in CO₂ emission levels. The NO_x emissions for the two older gas turbines, which are associated with the project components being specifically funded by the Bank, are in line with Bangladesh standards, but are not in line with EU standards (approximately 280mg/Nm³ vs 50mg/Nm³). The ambient air ground concentration levels will, however, be in line with EU requirements. Complying with EU NO_x requirements would increase the investment cost in the order of 3% to 5%. Considering the local context, the positive aspects of the project and the affordability of the promoter the emissions aspects are deemed acceptable. Reinforced monitoring and reporting of emissions will be required by the Bank

Impacts from the project are expected to relate mainly to increased noise, dust and traffic levels during construction. No permanent physical or economic displacements are expected to occur due to the fact that the project is being implemented in, or adjacent to, existing power plants. Overall, the environmental and social impacts of the project are expected to be acceptable, subject to satisfactory completion of the EIA process. Disbursement conditions will be included in the finance contract relating to the EIAs, ECCs and monitoring & reporting.

¹ Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and savings.

Environmental and Social Assessment

Environmental Assessment

The objective of the project is to increase the capacity and energy efficiency of existing open cycle gas turbine power generation stations of the promoter by the addition of steam cycles which utilise waste heat generated by the gas turbines. The capacity will increase by around 50% and the efficiency by around 75%. The new steam cycles will be located within the boundary of the existing power station in the case of Sylhet and immediately adjacent to the existing power stations, on land owned by the promoter in the case of Shajibazar, and land purchased by the promoter in the case of Baghabari. Cooling for the steam cycle will be by forced draft closed system with make-up water being supplied from ground water and/or the local river. An Initial Environmental Examination (IEE) was carried out by the relevant ministry in Bangladesh for the Asian Development Bank. Based on this examination the impacts are viewed as being site specific, few if any of them are expected to be irreversible and mitigation measures can be designed accordingly, thus no significant incremental environmental impacts are expected. On the whole, due to the significant increase in energy efficiency the relative emission, impacts are positive.

Some adaptation measures will be employed in the design of the projects' components to avoid the possibility of flooding, e.g. raised foundations and walled barriers.

EIB Carbon Footprint Exercise

The project has zero absolute emissions given that the electricity production by the project derives from the utilisation of waste heat. Relative emissions are minus (-) 491 ktCO₂e/annum, calculated on the basis of an average capacity factor of 70%.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed that year, as a proportion of project cost.

Social Assessment, where applicable

The project will be implemented on land that is within, or immediately adjacent to, the existing power stations. No new transmission or gas lines are required as these already exist at the three power plants. No physical, or economic displacement, are expected as a result of the project. Through informal consultations undertaken as part of the Initial Environmental Examination (IEE). The local community are supportive of the project in anticipation of potential employment opportunities and improvement in the reliability of power supply.

It is worth noting that the promoter supports the local community by providing funding for schooling and medical facilities e.g. use of the promoter's hospital and doctor facilities.

Public Consultation and Stakeholder Engagement, where required

Formal public consultations with project stakeholders and local populations will be conducted during the EIA preparation. As part of the IEE informal consultations were undertaken and no issues were raised in relation to the project.