Luxembourg, 28.03.2018

Environmental and Social Data Sheet

Overview

Project Name:	*Rehabilitation of Kairakkum HPP*
Project Number:	*2011-0652*
Country:	*Tajikistan*
Project Description:	The Project is to rehabilitate the hydro-mechanical and electro-mechanical equipment of the existing hydro power plant under present and future climatic conditions and increase the existing installed capacity from 126MW to 174MW by installing turbines with greater rated capacity. The Project will also raise the safety level of the power plant, the dam and the reservoir and strengthen the resilience of the plant against adverse effects of climate change.

EIA required: no

Project included in Carbon Footprint Exercise[1]: no

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

Environmental Assessment

Refurbishments of hydropower plants are considered Annex II projects in the context of the EIA Directive requiring the competent authority to screen the need of an ESIA. Typically such projects, if carried out in Europe, are screened in (requiring EIA) when the water flows are significantly affected by the refurbishment, which is not the case in this Project. According to national legislation a development of an EIA (Environmental Impact Assessment) is not necessary for this project but a State Ecological Expertise has to be carried out. Based on an evaluation carried out by an external consultant the EBRD and the Project Promoter prepared together a document titled "Environmental and Social Appraisal and Action Plan". This document was released to the public through the Green Climate Fund E&S disclosure process and will be published on EIB web.

The planned rehabilitation works are expected to have limited negative environmental and social impacts mainly related to refurbishment and construction works, which can be mitigated by using appropriate industry working practices.

The rehabilitation will increase resource efficiency, preventing unnecessary discharge of water through spillways and allowing generation of more electricity with the same flow of water.

The Project will enhance the Promoter's ability to manage climate change related risks to hydropower operations by strengthening the transboundary coordination of hydropower cascade management through institutional capacity development and skills transfer. These

[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.

improvements will play an important role in dispersing new skills across the industry and across the region.

Several alternatives were considered during the feasibility and due diligence stages including alternative design of the production units taking into account (i) climate resilience and (ii) reduced fish mortality as well as alternative phasing of the replacement of spillway gates (during the low flow season only, and one gate after the other) ensuring that the reduction of the overflow discharge capacity during works does not affect the dam safety.

The Kairakkum HPP is located more than 10 km from the closest international border and the terrestrial activities carried out on site during the rehabilitation works will not have any transboundary impact. The water from Kairakkum reservoir is either conveyed to large irrigation channels (some of which are transboundary) or flows through the HPP towards the border with Uzbekistan (more than 40km downstream). The reservoir operation rules are established by the Ministry in charge of irrigation in coordination with the neighbouring countries in the framework of the Syr Darya basin dialogue. The rehabilitation of the HPP will not change the water releases and will not affect the capacity of the HPP to release the required volumes. The transfer of water to the existing irrigation channels from Kairakkum reservoir will also not be affected. The production of hydropower by downstream users and water availability for downstream users will be unchanged. The Project is therefore considered to be associated with no transboundary impacts or risks and the risk of cumulative impacts in relation to other projects or activities in the Project area or in the downstream Syr Darya reach are considered acceptable.

The environmental context of the project is mostly related to the quality and availability of water, the ecological continuity for aquatic life and climatic conditions. Interactions between the Project and its social environment are limited to the vicinity of the public road which follows the crest of the dam. The hydro power plant and its associated facilities such as the switchyard are not located close to any inhabited area and therefore the potential impacts of the Project on the public will be limited to interactions with the local traffic. However, the Project is associated to the Kairakkum reservoir which is a public object of national importance for socio-economic and recreational uses. It is important to note that the Kairakkum reservoir operation is not under the responsibility of the Promoter, who only operates the HPP: the reservoir level regulation is the responsibility of the Ministry in charge of Agriculture, and the Project will not affect the reservoir operation. Consequently, the Project will not affect any of the reservoir uses.

The construction works related to the Project might lead to temporary negative impacts on the air quality: exhaust from site vehicles, dust from sand and cement loading and handling. Construction works might as well cause potential accidental pollution in the water. Implementing respective industry good practices can reduce those impacts to acceptable level. The site of the power plant is remote from the next village or settlement, so those local construction-related impacts won't affect settlers. Since the project is restricted mainly to the dam site, potential impacts on terrestrial wildlife and flora (habitat loss and changes) are negligible.

Refurbishment of the electromechanical equipment will lead to reduction of leaks of lubricants and oil reducing the impact on water quality.

Through implementation of fish-friendly turbines – with different shapes of the propeller vane, less sharp blades and wider space between the propeller vanes the Project is expected to reduce significantly fish mortality.

There are some components in the HPP containing asbestos, mainly in the insulator of some parts of the generators. The Project will remove and treat asbestos according to internationally acceptable practices, and following the principles of handling of hazardous wastes.

The increase of the general plant efficiency will lead to approx. 20% higher power generation from a renewable source, thus improving the GHG emissions of the whole grid.

EIB Carbon Footprint Exercise

The project does not impact the existing multi-purpose (irrigation/power generation) reservoir, therefore the emissions related to the reservoir are not considered in the CF calculation. The incremental hydro generation will not introduce new absolute emissions. In accordance with the CF methodology in case of introduction of firm capacity in an electricity system with a sizeable deficit condition the baseline is to be calculated as 25% operating margin (235 t CO2/GWh in case of Tajikistan) and 75% build margin (CCGT - 354 t CO2/GWh). As a result the estimated emissions savings are 48,600 tonnes of CO2 equivalent per year

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

Social Assessment, where applicable

The number of temporary workforce needed for the Project implementation at the site is small and partially will be met by local people, therefore their presence should therefore not require any special precautions.

Reconstruction of the dam and embankments will lead to an important safety increase in the whole area. This is a direct positive influence on the quality of life in the surrounding area of HPP Kairakkum. The equipment is over 50 years old and needs to be refurbished now in order to guarantee safe operation conditions.

Several measures will be implemented, in order to reduce the requirement for manual operation of devices, e.g. in case of flood manually operating the gates. Automatic and remote-controlled equipment will increase work safety.

Public Consultation and Stakeholder Engagement

As an essential part of good business practice and corporate citizenship and in accordance with the rules of the involved international financing institutes the Project must meet the appropriate international standards concerning stakeholder engagement. A Stakeholder Engagement Plan (SEP) was prepared and approved by the Promoter. The SEP identifies the stakeholders, the potential stakeholder engagement program and the intended communication process, which contains the points of providing stakeholders details, communication methods and possible media that will be used for information disclosure. Together with the Stakeholder Engagement Plan a Grievance Mechanism open to all stakeholders was also prepared for the Project.

Other Environmental and Social Aspects

Qairokkum HPP is the first hydropower plant in Tajikistan that operates under an ISO 9001 certified management system. In the frame of the Project, the Promoter has committed to extend this management system to an integrated Environmental and Social Management System certified ISO 9001, ISO 14001 and OHSAS 18001. This will ensure an organization of work that seeks continuous improvement of the environmental and health and safety performance of the HPP.

Conclusions and Recommendations

During the design phase using data from additional surveillance equipment and monitoring a detailed safety and geotechnical analysis has to be completed to the satisfaction of the Bank.

Luxembourg, 28.03.2018

The Promoter shall ensure that the Project is implemented in accordance with the Environmental and Social Action Plan (ESAP), which addresses among others the assessment and management of environmental and social impacts and risks, the pollution prevention and abatement, the labour standards, the occupational and public health, safety and security, the information disclosure, the stakeholder engagement and the grievance mechanism.

Based on the environmental and social information provided by the Promoter and considering the conditions and undertakings defined above, the Project is acceptable for EIB financing in E&S terms.