Luxembourg, 07.02.2012

Environmental and Social Data Sheet

Overview

Project Name: **ITEZHI- TEZHI HYDRO PROJECT**

Project Number: 2008 0263

Country: Zambia

Project Description: The project consists of the construction of a) a hydropower plant at the existing Itezhi-Tezhi dam and reservoir, and b) transmission infrastructure to transport the generated electricity to the grid. The dam is situated some 280 km west of the capital Lusaka, and the grid connection point is situated in the western outskirts of Lusaka. The project includes an intermediate substation in Mumbwa, some 140 km west of Lusaka. This substation will provide an interconnection point for a future transmission line toward the north-western mining areas of the country and will cater for some local consumption.

EIA required:	YES
Project included in Carbon Footprint Exercise[1]: (Details are provided in section: "Carbon Footprint")	YES

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

Due to its size and technical characteristics the power plant, if located inside the EU, would be classified under Annex II of the EIA Directive and the high voltage overhead transmission lines under Annex I, requiring an Environmental Impact Assessment. The promoters have compiled two EIAs, one for the power plant and another one for transmission investments. Both EIAs cover the cumulative effects of the project. The project will comply with the Bank's environmental and social guidelines, including appropriate public consultation and mitigation of impacts on biodiversity.

The environmental impacts of the power plant project are reasonably small as the plant utilizes an existing dam and reservoir. The daily peaking regime needs to be complemented to the power plant ESIA. The environmental impacts of the transmission line section of the project are typical for a transmission project; visual impact of the transmission line, clearing of the vegetation from the line corridor and the possible avifauna collisions. These impacts are all evaluated in ESIA reports, and appropriate mitigating measures are established into management plans.

The population in the transmission line area is sparse on the section Itezhi-Tezhi to Mumbwa, but increases on the section Mumbwa-Lusaka West, especially as the line approaches Lusaka. The resettlement needs have been identified in an appropriate Resettlement Action Plan, 90% resettlements have been done and compensated. Compensation takes place mainly by building to the affected people a new, similar house just outside line corridor, in the vicinity of the old house. Agriculture can continue on line corridor, and damaged crops are compensated. Other significant social impact of the project will be the impact of work camps, including their health implications. The transmission line work camps are expected to be small compared to main camp in Itezhi-Tezhi village.

[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.

Due to the interconnected nature of the electricity networks of Southern Africa, the project will support regional electricity demand and facilitate exports from Zambia to other members of the Southern African Power Pool (SAPP). As a result, the project is expected to induce a temporary reduction of generation from existing coal and oil-fired power plants after it is commissioned and over time it will increasingly contribute to meet new demand, delaying the construction of alternative hydropower and coal-fired generation plants in the SAPP. The project itself will not produce new CO2 emissions (due to the use of an existing reservoir for water storage). In line with the Bank's carbon footprint methodology, the project is estimated to avoid 438kt of CO2 per annum.

The project, by providing large amount of electrical energy with reasonably low and correctly mitigated environmental impact, is considered acceptable for the Bank's financing

Environmental and Social Assessment

Environmental Impact and Mitigation

The power plant project is situated adjacent to Kafue National Park and two Game Management Areas (buffer zones of natural park). The power plant structures do not compromise these protected areas, as the plant is situated adjacent to the dam on built-up area. The construction and related activities (roads, excavation material placements, impacts of work camps) have been considered in ESIAs, and appropriate measures have been designed for the management plan. The transmission line does not cross natural park, but at the vicinity of the power plant the line route is within the border of Namwala Game Management Area. The natural park is situated to the west of the power plant, and the transmission line direction is north-east. Game management is not expected to be significantly affected by the line.

The water flows from the power plant to Kafue Flats that is a large flatland plateau and a seasonal wetland area. The establishment of Itezhi-Tezhi dam and Kafue Gorge power plant in 1978, with changes in the water regime, did change the wildlife conditions and possibilities for livelihood of the population. The population density has increased significantly, reportedly tripled since the dam was built. The reservoir operation has reduced peak floods. The agriculture and fishing livelihoods were improved by more predictable water regime. Some areas, that received water only during peak floods, have had ecosystems changed.

Annual or even weekly regulation of the dam is not expected to change, as these are driven by operational needs of much larger Kafue Gorge hydro plant. Peak floods are not either changing, as these are released through the spillways. The Itezhi-Tezhi power plant will be able to do daily load following and peaking during the low water flow seasons. The ESIA does not sufficiently address the flow changes that these daily operations are expected to create. These impacts should be studied and mitigated before the plant is allowed to be dispatched to load following or peaking operations. This study is proposed as a loan contract undertaking condition. Current climate change predictions do not envisage precipitation changes that would significantly alter the hydrology in the catchment of the project during its economic life.

EIB Carbon Footprint Exercise

The plant will not modify the capacity of the existing hydropower reservoir; therefore, potential greenhouse gas emissions from the reservoir are not taken into consideration. Absolute CO_2 emissions from the plant in a standard year of operation will be zero.

The baseline emissions for the plant are calculated assuming that electricity generated by the project will partly displace existing generation in the South African Power Pool (mainly coal-fired units) and partly satisfy new demand for electricity (coal, gas and hydropower in the South African Power Pool). Compared to this baseline the project is estimated to save 438 kT of CO_2e/yr.

The loan is expected to cover about 19% of total investment outlays. Pro-rated to this amount, the absolute emissions will be zero and estimated emissions savings will be 83 kT of CO_2e/yr.

Social Assessment, where applicable

The main social impact of the project was relocation of the affected people. Transmission line building requires that dwellings under the line route need to be removed. Resettlement happens by building similar level of house outside of the line corridor. The transmission line routing Lusaka West-Mumbwa required 90 such relocations. The line section Mumbwa-Itezhi-Tezhi that passes through less inhabited area required 7 relocations. 11 of these relocations have not yet been completed (August 2011). Other relocations have been done, and the compensations have been paid.

The project, as a large infrastructure project, establishes workers camps with potential social problems. The work conditions of the power plant (tunnel works) and transmission line (works on heights) are requiring special attention. These are appropriately addressed in ESIA documents, and are expected further on to be followed by a Lenders' Engineer assigned to the project. Dedicated Project Implementation Unit, formal Project Implementation Plan, and a Lender's Engineer are proposed as a loan contract condition for disbursement.

Zesco is a governmental company and generally applies acceptable labour standards.

The ITPC and their EPC-Contractor Sinohydro social, health and safety performance, as well as the occupational health standards of Zesco need to be monitored by the Lenders Engineer.

Public Consultation and Stakeholder Engagement

The transmission line ESIA public consultations did take place April-August 2008. The stakeholder hearings included as well chiefs and governmental agencies operating on the line area. The ESIA documents included endorsement letters from all traditional chiefs whose areas were crossed by the line.

The power plant ESIA project included as well a public hearing. The assessment of the downstream impacts, as per possible daily variations of the flow, needs to be complemented.

Other Environmental and Social Aspects

None