



European Investment Bank (EIB)

Luxembourg, 29.05.2019

Environmental and Social Completion Sheet (ESCS)

Overview

Project Name:	ITEZHI-TEZHI HYDRO PROJECT
Project Number:	2008-0263
Country:	ZAMBIA
Project Description:	The project consists of a new 120 MW hydropower plant, benefiting from the use of an existing dam and reservoir, and a ca. 280 km transmission line to connect the plant to the national grid.

Summary of Environmental and Social Assessment at Completion

EIB notes the following key Environmental and Social outcomes at Project Completion.

Hydroelectric power plant

A 120-MW hydroelectric power station, consisting of two Alstom 60 MW Kaplan turbo generators, with an associated 11/220 kV terminal substation was constructed at an existing 35-year-old earth-filled, rock-faced dam on the Kafue River adjacent to the Itezhi-Tezhi National Park. The project utilizes existing structures, including an existing tunnel of the dam structure for power plant structures. The new hydroelectric power station is operated and provides water downstream in accordance with the water management rules used for the past 35 years. Therefore, the downstream water regime is expected to remain unchanged. The average production in the first two years of operation is about 6% above the appraisal estimate of the hydro energy resource assessment.

Transmission lines and substations

The Promoter constructed 142km of 220kV single circuit transmission line (4 km less than 146km estimated at the time of appraisal) from the power station to the new 330/220/33kV (Nambala) substation in Mumbwa and 134km of 330kV double circuit transmission line from Mumbwa to Lusaka West Substation (11km less than 145km estimated at the time of appraisal). Lusaka West 330/132/33 kV substation was expanded to accommodate the arrival of the double circuits 330 kV transmission line.

The promoter of the hydroelectric power station is a joint venture company, under the name of Itezhi-Tezhi Power Company (ITPC) established with 50/50 ownership by TATA of Africa and a national electricity company ZESCO, with a 25-year BOOT (Build, Own, Operate, and Transfer) concession. The promoter of the transmission lines and substations projects is ZESCO, which is as well the off taker of electricity for the project through a long-term power purchase agreement (PPA) with ITPC.

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 (i.e. 220 kV or more and a length of more than 15 km)., requiring an Environmental Impact Assessment. The promoters have

compiled EIAs, for the power plant and for the transmission infrastructure. The project complies with the Bank's environmental and social standards, including appropriate public consultation and mitigation of impacts on biodiversity. All the environmental protection, mitigation and compensation measures listed in the EIA and approval documents were implemented and monitored by the Lender Engineer.

The hydropower project has not modified the capacity of the existing hydropower reservoir, and it is associated with only relatively minor impacts, apart from the change of the landscape and vegetation loss at the construction site, through the use of existing dam and reservoir. The vegetation was however restored after construction in places where there are no buildings. The Bank requested as an undertaking an additional daily peaking regime study, as a complement to the power plant ESIA. This study was prepared by the reputed consultant, commissioned by the promoter and approved by the Lenders Engineer. Annual or even weekly regulation of the dam is not expected to change, as these are driven by the operational needs of much larger Kafue Gorge hydro plant. Additional study on potential downstream flow variations, if the plant is used for daily optimization, was requested as a loan conditions and it was successfully demonstrated that impacts of daily variations are attenuating around 10 km downstream. Although Itezhi-Tezhi power plant, is in principle able to do daily load following and peaking during the low water flow seasons, during first two years of operation the plant was not used for daily optimization.

The environmental impacts of the transmission line included the visual impact of the transmission line, clearing of the vegetation from the line corridor and the possible avifauna collisions. These impacts were all evaluated in the ESIA reports, and appropriate mitigating measures were 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 were identified in an appropriate Resettlement Action Plan; resettlements have been done and compensated. Compensation of the affected people took place mainly by building a new, similar house just outside line corridor, in the vicinity of the old house. Agriculture can continue on line corridor, and crops damaged during construction were compensated. Other significant social impact identified at the time of appraisal of the project were the impact of work camps, including their health implications. The transmission line work camps were small compared to main camp in Itezhi-Tezhi village, and no particular issues have been reported by the promoter.

No significant environmental or social issues were noted at the completion of the project.

Summary opinion of Environmental and Social aspects at completion:

EIB is of the opinion, based on reports from the promoter, that the project has been implemented in line with EIB Environmental and Social Standards, applicable at the time of appraisal.