

## **Non-Technical Summary (NTS): Great Zimbabwe Hydro**

### Project description

Great Zimbabwe Hydro Power (Pvt.) Ltd (GZH) is planning to build a 5 megawatts (MW) hydro-electric power generation station at the dam wall of Lake Mutirikwi, Masvingo Province, Zimbabwe. The hydropower station will be located approximately 20 km south-east of the town of Masvingo. The project will utilize flow releases from the existing Mutirikwi Dam to generate electricity. The power will be fed into the national system via a 25 km-long transmission line which will be constructed and maintained by Great Zimbabwe Hydro. The transmission line will be constructed as far possible along the route of an existing transmission line. The power generated will be fed into the national grid and will contribute approximately 0.5% of the national power demand. It is expected to have a minimum life span of 25 years.

The project setting is at the wall of Lake Mutirikwi outlet. The lake is a prime tourist destination, for site-seeing, boating, fishing, and other water sports. The surrounding area is communal farming land settled by small scale farmers who grow maize as their main crop. Most farmers also own livestock, including cattle, goats, donkeys, and chickens.

The project site is on one side of a granite rock lined gorge with woodland except in areas of deeper soils with scattered trees and shrubs. There are several colonies of aloe trees which will need transplanting and protection. The gorge area is also the habitat for several species of birds: Augur Buzzard, White-necked Raven, swifts, and swallows. There are no populations of rare or endangered animals on or around the site. White rhinos live within the area of the Lake Mutirikwi Recreational Park but not within the project area.

An initial Environmental and Social Impact Assessment (ESIA) for the development of a hydropower plant at the proposed project site was conducted in 2012. Further ESIA's were conducted in March 2017 and August 2018. The present summary is based on the results of the updated ESIA finalised in May 2022. All ESIA's indicated that the impacts associated with the proposed project are largely positive and will result in the economic improvement of the area, employment creation as well as the generation of clean electricity. The project has a potential carbon emission reduction of around 11,100 tons of CO<sub>2</sub> per year.

The construction of the associated transmission line was subject to a separate ESIA conducted in 2017.

### Environmental and social categorization

The Great Zimbabwe Hydropower (GZH) Project is classified as a Category B project. Being classified in Category B, the project is expected to have few potential environmental and social impacts, the impacts are largely reversible, and site-specific. Appropriate mitigation measures have been developed and are included in the project's Environmental and Social Management Plan (ESMP).

### Applicable standards

The project's ESIA and environmental and social management instruments have been prepared in line with the relevant Zimbabwean environmental legislation, the IFC Performance Standards, and the Environmental, Health, and Safety (EHS) Guidelines of the World Bank Group. The project is expected to have impacts which will trigger the following IFC Performance Standards:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts
- PS 2: Labour and Working Conditions
- PS 3: Resource Efficiency and Pollution Prevention
- PS 4: Community Health, Safety, and Security
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

## **Non-Technical Summary (NTS): Great Zimbabwe Hydro**

- PS 8: Cultural Heritage

PS 5: Land Acquisition and Involuntary Resettlement will not be triggered as the proposed project will not result in any land acquisition. The land that will be used for hydropower is owned by the Zimbabwe National Water Authority (ZINWA). A land use agreement has been signed with ZINWA for this purpose. PS 7: Indigenous Peoples will not be triggered as no indigenous people reside in or around the project area.

Key risks, impacts, and mitigation measures

### Risks and impacts

The main adverse impacts are associated with the construction and operational phases of the project. They include the impacts of the operation of heavy machinery and construction activities, i.e., land clearing, slope stabilisation, and the sourcing of raw materials. These impacts include the generation of dust and noise, water pollution, and loss of vegetation. There are also potential health and safety risks to employees and local communities from blasting activities and the movement of vehicles. Measures to minimise these risks are described in the ESMP presented as part of the ESIA. The ESIA also presents a Grievance Redress Process for affected communities.

The project is not expected to generate adverse impacts on downstream aquatic ecology, nor on the fish population or other aquatic life in the dam itself. The Lake Mutirikwi dam wall is the only artificial barrier to fish migration and fish cannot go beyond the dam. The GZH plant will be below the dam wall and will not create a new barrier for fish migration. The white rhino, an endangered and highly protected species, is kept on the northern side of the lake where it is monitored closely. Due to its very stringent habitat requirements and the threat by poachers, it is never encountered on the south-western side of the lake where the project is situated. It is therefore not expected that the project will affect the rhinos' habitat.

### Mitigation measures

Overall, the project is environmentally feasible with a few potential impacts, which can be avoided, minimized, mitigated, and/or compensated through appropriate mitigation measures. An Environmental and Social Management Plan (ESMP) was developed as part of the project's ESIA. The ESMP outlines areas of consideration with an aim to manage the project's significant impacts. The ESMP helps to ensure that negative impacts resulting from the project are mitigated and to ensure compliance with the relevant environmental and social laws and standards. The following paragraphs describe the relevant mitigation measure under each Performance Standard.

- PS 1: This Performance Standard requires the development of an Environmental Management System (ESMS) which entails a methodological approach to managing environmental and social risks and impact in a structured way on an ongoing basis. The ESIA carried out for the hydropower station, systematically assesses the project's expected risks and impacts. Based on the results of the ESIA, the GZH project will develop an ESMS. An initial description of emergency preparedness and response procedures, a Grievance Redress Process for affected communities, and an ESMP are included in the ESIA.
- PS 2: It is expected that around 50 people will be employed on the project, of which around 20 to 30 jobs will be for skilled workers. Unskilled labour will be recruited from the vicinity of the project. The construction itself will be carried out by a suitably qualified and selected civil contractor. Construction personnel not resident in the immediate area will be housed in the vicinity of the project or Masvingo, depending on availability and suitability of the accommodation. The project must comply with the Zimbabwean labour laws and the requirements of this Performance Standard, and base employment relationships on the

## Non-Technical Summary (NTS): Great Zimbabwe Hydro

principle of equal opportunity and fair treatment. The ESIA report state that the ESMS to be implemented will comply with the internationally recognised ISO 45001 certification for occupational health and safety (OHS) management systems. Moreover, a Grievance Mechanism for workers will be developed.

- PS 3: This Performance Standard aims to abate pollution to air, water, and land that may threaten people and the environment at the local, regional, and global levels. It is anticipated that the emission reduction resulting from the project will be about 11,100 tonnes of CO<sub>2</sub> per year. The ESMP sets out the provisions aimed at preventing pollution during the construction and operation phases. This includes an emergency preparedness and response system to contain any accidental events, i.e., spillages of oils, wildfires, etc. The contractor to be hired for the construction of the project will be required to develop a Sediment Control Plan, a Waste Management Plan, a Noise Management Plan, and an Air Quality Management Plan.
- PS 4: This Performance Standard aims to anticipate and avoid adverse impacts on the health and safety of affected communities during the project's lifetime. It aims to ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to affected communities. Measures to address the relevant risks and anticipated impacts to communities, i.e., noise pollution, increased traffic, population influx, conflicts resulting from a lack of local employment opportunities, and the spread of communicable diseases, are addressed in the project's ESMP and other management plans (see PS 3).
- PS 6: This Performance Standard recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and managing living natural resources adequately are fundamental to sustainable development. A biodiversity assessment has been carried out within the scope of the ESIA. It concludes that the construction of the hydroelectric project is unlikely to have any adverse effects on biodiversity that cannot be mitigated or managed. The assessment suggests that the project could prove beneficial in improving the health of the Mutirikwi River by increasing river flows. Mitigation measures to address the risks associated with invasive alien species, especially those deliberately introduced, are proposed in the assessment as well. An alien/invasive species management program including continued monitoring will be implemented to control the spread of these plants. The GZH project is not expected to have significant negative impacts on declared RAMSAR sites and on endangered species of wild fauna and flora. The ESIA contains a Biodiversity Management Plan.
- PS 8: This Performance Standard aims to protect cultural heritage from adverse impacts of project activities and to support its preservation. Furthermore, it promotes the equitable sharing of benefits from the use of cultural heritage. The project area is located 15 km from an important heritage site of the country, Great Zimbabwe. In line with PS 8 and the National Monuments and Museums Act, a Cultural Heritage assessment was undertaken as part of the ESIA. The report was submitted to the National Museums and Monuments of Zimbabwe (NMMZ). The footprint of the proposed hydropower plant has focused on the Mutirikwi Gorge and its surroundings. The investigations did not locate anything of an archaeological nature in the Mutirikwi Gorge where the hydroelectric infrastructure is planned. A Chance Find Procedure was developed as part of the ESIA.

### Stakeholder engagement

Stakeholder consultations were undertaken as part of the ESIA process, with the aim of:

- (i) providing information to communities on proposed project interventions and soliciting their opinion in this regard,
- (ii) providing a platform for stakeholders to discuss their opinions and concerns,

## **Non-Technical Summary (NTS): Great Zimbabwe Hydro**

- (iii) assessing their responses in understanding potential risks and prepare a mitigation plan to address their concerns
- (iv) helping to identify additional impacts/issues and provide stakeholders an opportunity to contribute towards identification of mitigation measures for the ESMP.

Whilst most stakeholders consulted indicated support for the project, there was concern by the sugar estates downstream of possible conflict in release times of water into Mutirikwi River, i.e., the project proponent releasing water when it is not required downstream. Considering this, the design of the project is such that the flow releases will continue as they presently do. This arrangement will be determined by ZINWA. The hydro power plant will therefore not change the volume or frequency of the flow releases and therefore there will be no influence on the water supply at the sugar farmers' extraction point downstream at the Bangala Dam. Other downstream water users such as Renco Mine were concerned about the possible reduction in the water flows for downstream users. The project involves the non-consumptive use of water, meaning that water that is normally released by ZINWA for users downstream will first pass through the power plant and then be released back to the river again downstream without depleting the quantity of water because of passing through the power plant.

The local community in the vicinity of the project were also in support of the project. However, they emphasised that employment should be given to locals and the developer should adhere to local traditional norms and practices.

From a cultural perspective, the two Chiefs consulted highlighted the need for the project proponent to observe the sacredness of the area and to consult with the Chiefs regarding ceremonies to be performed prior to project implementation.