

# Batoka Gorge Hydro-Electric Scheme

## Background Information Document



### Introduction

The Zambezi River Authority (ZRA) is a statutory body and was established in 1987. It is jointly and equally owned by the governments of Zambia and Zimbabwe. It is responsible for overseeing the development of the Zambezi River, which runs between the two countries (and forms a common border). As part of this mandate, ZRA has been mandated by the Governments of Zambia and Zimbabwe to develop Batoka Hydro Electric Scheme (BHES)..

As part of the proposed project, the ZRA has commissioned Environmental Resources Management (ERM) and its local partners (Kaizen Consulting International in Zambia and Black Crystal in Zimbabwe) as the Consultants to undertake an Environmental and Social Impact Assessment (ESIA) for the proposed Batoka Gorge Hydro-electric Scheme (HES). As part of the ESIA a Stakeholder Engagement Process is being followed with the following objectives:

- To provide information about the proposed project, project environment and ESIA process;
- To gather local information which can be used to inform project decisions and as input into the ESIA process;
- To assist in the identification of issues of concern regarding the proposed project and ESIA process;
- To gather suggestions regarding project alternatives;
- To confirm issues identified in the public domain and ensure that where relevant these are investigated further through technical studies;
- To report back on the results of the ESIA and management measures;
- To gather comments on results and proposed management and project design;
- To meet legislative requirements.

### The Project Team for the ESIA



**The Zambezi River Authority (ZRA)** is the Client and project proponent. The ZRA was established as a body corporate in 1987 by parallel legislation in the Parliaments of Zambia and Zimbabwe following the reconstitution of Central African Power Corporation - under the Zambezi River Authority Acts (Act No. 17 and 19 Zambia and Zimbabwe respectively) and is jointly owned by the governments of Zambia and Zimbabwe in equal proportions.



**Environmental Resources Management (ERM)** is the consultant undertaking the ESIA with Black Crystal and Kaizen Consulting International. ERM is an international environmental consultancy and has over 35 years of experience of working with development agencies, developers and governments to address the environmental and social impacts of economic development worldwide. ERM has worked extensively throughout Africa and has conducted projects in both Zambia and Zimbabwe.



**Black Crystal** is one of Zimbabwe's leading reputable consulting companies, offering a quality service in environmental, socio-economic and cultural heritage consultancy services. Black Crystal deliver technical consulting services to private industry, NGOs, architects, engineers and public sector clients. It is registered with the Environmental Management Agency of Zimbabwe to undertake environmental impact assessments (EIAs).



**Kaizen Consulting International (Kaizen)** is an environmental consultancy based in Zambia. It provides services including EIAs and environmental management plans, solid waste management master plans, sustainable rural livelihood and strategic urban development plans and ISO 14000 implementation. It is registered with the Zambian Environmental Management Agency (ZEMA), to undertake EIAs.

### Purpose of this document

This document serves to provide you with a brief introduction to the proposed Batoka Gorge Hydro-electric Scheme and the means by which stakeholders can become involved in the Environmental and Social Impact Assessment (ESIA) process currently being undertaken. Additional documents will be available at various stages during the ESIA to provide stakeholders with information and further opportunities to raise issues of concern and suggestions for enhanced benefits. Your comments and suggestions on any aspect of the proposed project, including the technical and stakeholder engagement processes, will help to focus the technical studies and will ultimately assist the authorities in Zambia and Zimbabwe to make a decision.

### Motivation for the Project

The key motivation for the project is to allow the governments of Zambia and Zimbabwe to meet the growing demands for power. Both countries suffer from national power deficits as their power generation capacity is too small to meet demands from industry and private house holdings. This demand for power is expected to become more acute as the economics of both countries grow. If the Batoka Gorge HES goes ahead, the generation capacity for power will be increased in both countries and reliance on electricity imports will be reduced. The Batoka Gorge HES will provide up to 1,600MW; 800MW to Zambia and 800MW to Zimbabwe.

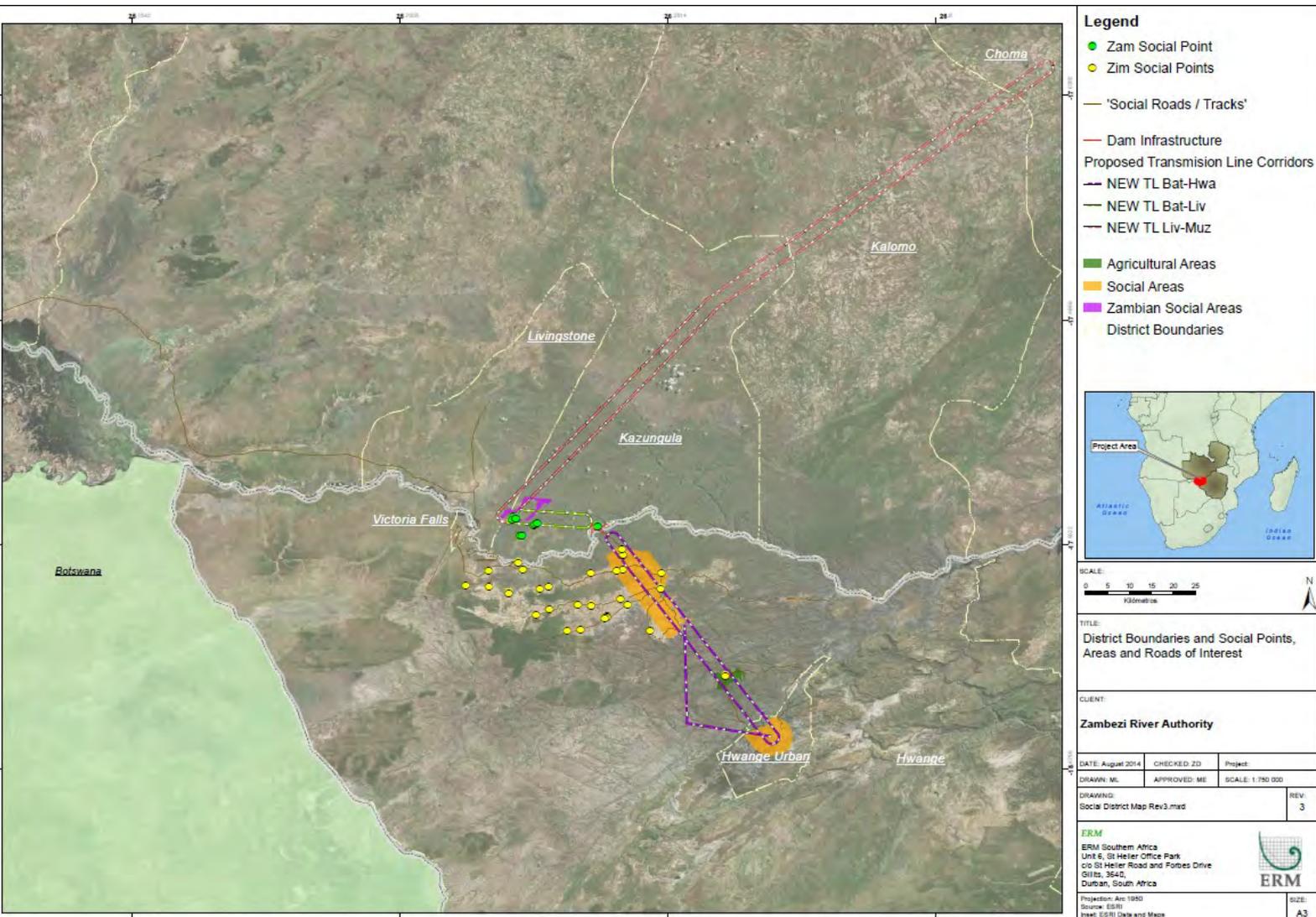
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## Project Location

The proposed Batoka HES is to be located at 26° 6' 28.38" E and 17° 55' 38.55" S in the central portion of the Zambezi River Basin and will extend across the international boundary between Zambia and Zimbabwe. It will be situated upstream of the existing Kariba Dam hydroelectric scheme and approximately 47km downstream of the Victoria Falls.

In Zimbabwe, the proposed scheme falls within the province of Matabeleland North and in the Hwange Rural District. It includes the wards of Matetsi, Chidobe, Katchecheti, Nemanhanga, Mbizha, Jambezi, Sidinda, Mashala and Simangani. The traditional authorities in the area of impact include chief Shana, Bishop Matata Sibanda (who is Acting Chief for Mvutu who has recently deceased) and Chief Hwange .

In Zambia, the main area of direct impact falls under the Southern Province in the Kazungula District, most notably the wards of Mukuni and Katapazi, which fall under Chief Mukuni's jurisdiction. However, impacts will also be felt in Livingstone District, Zimba District and Choma District and if there are downstream impacts, these may be experienced in the District of Kalomo. The traditional authorities in these areas include Chief Musokotwane, Chief Simwatachela, Chief Sipatunyana , and Chief Singani.



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## Project Infrastructure

The key infrastructure for the proposed Batoka HES project includes the following components:

**Dam wall and Impoundment:** The proposed high gravity arch dam wall will be 181m in height. The Full Supply Level (FSL) of the reservoir is tentatively set at 762 m above mean sea level. After impoundment to the FSL, the reservoir surface area will cover approximately 23 km<sup>2</sup>.

**Power Houses:** It is planned that two power houses, each with an installed capacity of 800MW, will be constructed on each river bank, with a total capacity of the scheme being approximately 1,600 MW. The powerhouses are likely to be located outdoor at the dam toe. Each powerhouse will accommodate four turbines. The spillway will be located in Zimbabwe, approximately 2km from the dam site.

**Transmission lines:** In Zimbabwe it is proposed that the transmission lines will comprise of 2 x 70km 330kV lines, running in parallel, and sharing a common right-of-way, to the existing Hwange 330 kV substation. In Zambia, the line will comprise of 2 x 330kV transmission lines measuring 21km running from Batoka and terminating at a new 330kV substation ZESCO will construct in Livingstone. A second line may also be developed which will run in parallel to the existing 220kV line, terminating at the Muzuma substation in Choma, a distance of approximately 160 km.

**Access Roads:** Existing roads will be upgraded and new ones will be constructed to allow access to each river bank. In Zambia, it is proposed that the road originating in Palmgrove (near Livingstone) that connects to Mukuni village will be rehabilitated and a new road, measuring 20km in length will be constructed to connect Mukuni to the dam site. In Zimbabwe, the secondary road that starts from the Bulawayo-Victoria Falls main road and connects to Jabula will be upgraded and a new road, connecting Jabula to the dam site (measuring 14km long), will be constructed. The construction of a road downstream from the dam and a bridge that connects the two countries is also proposed, in order to minimise the passage of heavy loaded trucks on the dam crest.

**Other Ancillary Infrastructure:** Quarries, spoil areas, construction and batching camps, as well as construction camps and permanent staff villages will be required in Zambia and Zimbabwe.

Project alternatives are still under consideration so that sensitive areas such as sites of social/ ecological and/or cultural significance can be avoided and environmental factors included in the design of the facility. This is particularly relevant for the proposed transmission line alignments where currently there is a corridor of a 3 km width under consideration which will be reduced significantly when a preferred alignment is selected



## Proposed Project Programme

The ESIA is scheduled to be submitted to the Governments of Zambia and Zimbabwe in March 2015.

The construction phase is expected to last around nine years. It will be divided into two stages: the first stage will be when access roads and the first permanent camp will be built. It is expected that this will take one to two years. The second phase is when the dam and plants will be constructed; this will take six to seven years .

Project phase	Duration	Dates
ESIA process	11months	May 2014 – March 2015
Construction: phase 1	1–2 years	2015- 2017
Construction: phase 2	6–7 years	2017–2024
Operation phase	For life of dam	2024 onwards

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## What is an ESIA ?

In order to commence with the Project an Environmental and Social Impact Assessment (ESIA) must be completed. The ESIA will be undertaken in alignment with the relevant legislation, as well as international good practice guidelines such as the IFC's Performance Standards. In Zimbabwe, the key legislation is set out in Statutory Instrument No. 7 of 2007 the Environmental Management (Environmental Impact Assessments and Ecosystems Protection Regulations) and in Zambia, it is the Environmental Management Act, 2011 and Statutory Instrument 28 of the 1997 EIA Regulations. The objectives of the ESIA are:

- To understand how the proposed Project could impact the local environment and people living and working nearby
- To identify any measures that could be implemented to reduce negative impacts and enhance positive impacts
- The ESIA will advise whether the proposed Project can be developed in an environmentally and socially responsible way and if so, whether permission and funding should be given by the government to develop the Project.

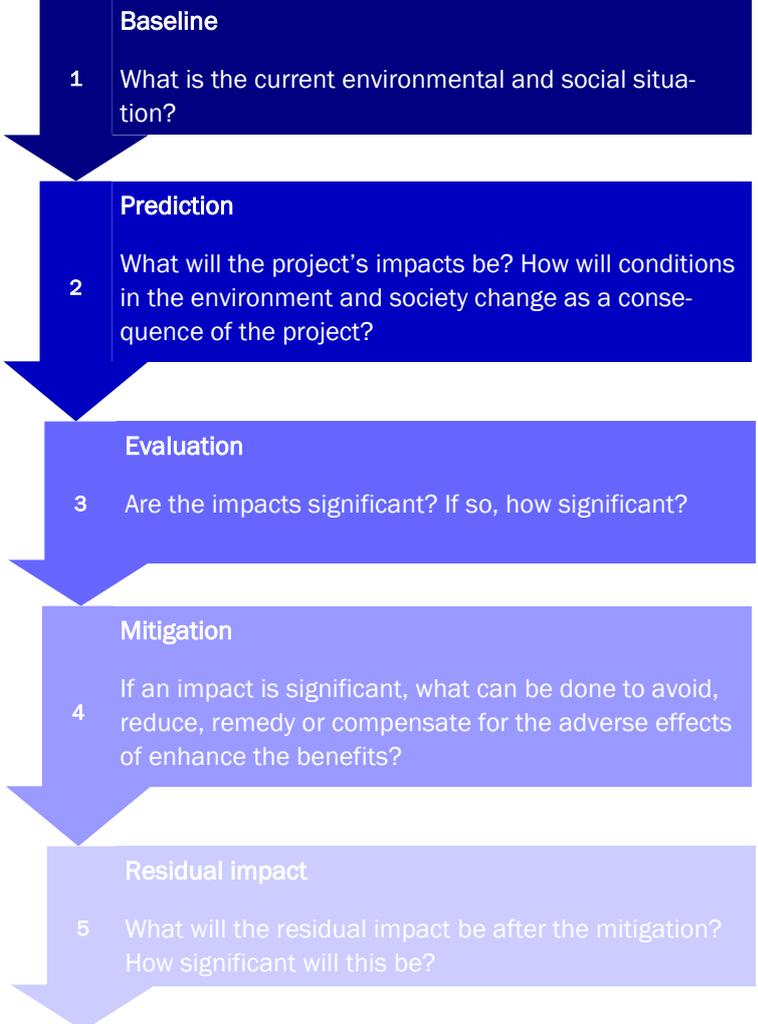
## Specialist Studies

To support the ESIA, specialist studies will be undertaken on the following areas:

- Biodiversity
- Social-economics including health impact assessment and an economic cost-benefit analysis
- Resettlement
- Cultural heritage and archaeology
- Water flow and water quality monitoring.

In parallel a Resettlement Action Plan (for the dam infrastructure) and Resettlement Policy Framework (for the transmission lines) is being prepared to assist and guide planning around any physical and economic displacement that may occur as a result of the project.

## An ESIA aims to answer five key questions:



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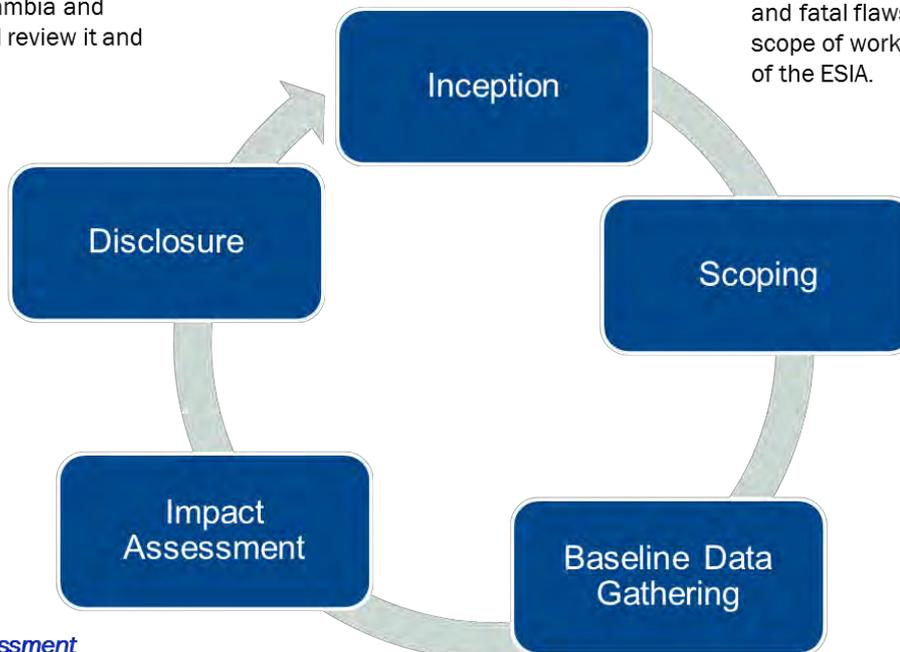
## The ESIA Process

The ESIA is divided into 5 stages:

During **Disclosure** the ESIA report will be submitted to the Governments of Zambia and Zimbabwe who will review it and issue a decision.

**Inception** or screening identifies likely key issues of concern, risks and fatal flaws. Defines the scope of work for the remainder of the ESIA.

**Scoping** identifies the likely changes (impacts) that will happen as a result of the proposed Project. Seeks to involve interested and affected parties.



The **Impact Assessment** assesses how significant the impacts are likely to be, as well as identifying ways to manage them.

**Baseline Data Gathering** will be undertaken to enhance understanding on the environment and people in the area and how the proposed Project is likely to affect them.

## Potential Impacts

The ESIA studies will identify the likely impacts that will occur as a result of the Project. Some of the types of impacts that may occur are detailed below. This list will be expanded on, on the basis of comments and issues raised in the public domain. These impacts will be studied and understood in more detail through the Baseline Studies and Impact Assessment phases in the ESIA. During the Impact Assessment phase of the ESIA, mitigation and management measures will be developed so as to avoid and / or reduce any negative impacts. In addition recommendations will also be developed to enhance any positive impacts.

The potential environmental and social impacts include:

- Destruction/removal/loss of habitat for terrestrial and aquatic flora;
- Destruction/removal/loss of habitat for terrestrial fauna, including avifauna;
- Changes to river flows and associated impacts to downstream aquatic ecology and water users;
- Modification of the sediment regime as a result of the impoundment;
- Decrease in water quality and water temperature changes, both within the impoundment and downstream;
- Emissions of greenhouse gases as a result of the inundation of vegetation.
- Socio-economic impacts, including in particular the impacts to white water rafting and other tourism opportunities on the Zambezi River downstream of the Victoria Falls;
- Settlement and potential in-migration, during and after construction, and its potential effect on land-use, health and conservation;
- Economic and physical resettlement as a result of land take for the construction of Project infrastructure
- Impacts to cultural heritage, including the potential effects on the World Heritage status of the Victoria Falls (and Mana Pools).

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## Stakeholder Engagement

An important part of the ESIA process is to obtain feedback from people who may be affected by, or who are interested in the Project. Stakeholder consultations will therefore be undertaken throughout the ESIA process. The engagement process will be undertaken in order for stakeholders to:

- learn about the project
- raise issues that they are concerned about; and
- to make suggestions for enhanced project benefits.

ERM, Black Crystal and Kaizen Consulting International will run the engagement process. The team will try to make sure that engagement is open to all people, especially those who will be affected by the proposed Project.

The following engagement activities are proposed:

- Advertisements placed in national newspapers
- The placement of notices / flyers at public places including schools and public clinics.
- Circulation of this Background Information Document
- Meeting with national and provincial authorities in Bulawayo/Lusaka
- Meeting with local authorities and politicians (District Councils – Administrator/Chief Executive Officer/Chairman/Relevant Ward Councillors)
- Open day in Harare and Lusaka
- Open day in Victoria Falls and Livingstone
- Community meetings
- Community radio announcements
- Fielding of telephonic comment; and
- Receipt of written comment.



All comments and suggestions raised by stakeholders will be recorded. The technical specialists and project team will evaluate relevant issues and suggestions received and incorporate these into the ESIA studies.

Public meetings will be held in local languages so that the widest audience possible can understand the ESIA process and the proposed Batokoa Gorge HES.

## Invitation to Comment and Register as an Interested and Affected Party

If you have any comments or concerns, and would like to register as a stakeholder you can get involved by:

- Attending public open days or information sharing meetings (by personal invitation) held during the ESIA process;
- Contacting Black Consulting or Kaizen Consulting International for further information (see contact details below); and
- Registering as an interested or affected stakeholder in the proposed Project. Registration will allow you to receive further communication about the ESIA process and the proposed Project. Please complete the attached Registration and Comment Sheet overleaf and return it to the contact specified by 27th October 2014.

### Black Crystal

Contact: Black Crystal

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