



*Water! Today, Tomorrow*



# **2024 ANNUAL REPORT**

AND FINANCIAL STATEMENTS

37<sup>th</sup> Edition









# ANNUAL REPORT AND FINANCIAL STATEMENTS FOR THE YEAR ENDED 31<sup>ST</sup> DECEMBER 2024



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## ACRONYMS

Acronym	Meaning
ALSF	African Legal Support Facility
ASR	Alkali Silica Reaction
AUDA-NEPAD	African Union Development Agency - New Partnership for African Development
BCM	Billion Cubic Meters
BGHES	Batoka Gorge Hydro-Electric Scheme
COM	Council of Ministers
COSO	Committee of Sponsoring Organizations
CPU	Department of Civil Protection (Zimbabwe)
DGHES	Devils Gorge Hydro-Electric Scheme
DMMU	Disaster Management and Mitigation Unit (Zambia)
EMA	Environmental Management Agency (Zimbabwe)
EMP	Environmental Monitoring Programme
EPB	Environmental Project Brief
EPP	Emergency Preparedness Plan
ERM	Enterprise Risk Management
ESIA	Environmental and Social Impact Assessment
ESIS	Environmental and Social Impact Statement
EWS	Early Warning System
FEA	Finite Element Analysis
HEP	Hydro Electric Power
HST	Hydrostatic-Season-Time
ICT	Information and Communication Technology
IRBM	Integrated Results Based Management
ISO	International Organization for Standardization
JOTC	Joint Operation Technical Committee
JTC	Joint Technical Committee
KDRP	Kariba Dam Rehabilitation Project
KRA	Key Result Area
LTM	Long-Term Mean
MCM	Million Cubic Meters
MWh	Megawatt hour
PCSBS	Partner and Client Satisfaction Baseline Survey

Acronym	Meaning
PCSI	Partner and Client Satisfaction Index
PV	Photovoltaic
RIDM	Risk-Informed Decision Making
SADC	Southern African Development Community
SARCOF	Southern Africa Regional Climate Outlook Forum
SEFA	Sustainable Energy Fund for Africa
SIDA	Swedish International Development Cooperation Agency
SOP	Standing Operating Procedures
ULKRS	University Lake Kariba Research Station
USGS	US Geological Survey
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation
ZICA	Zambia Institute of Chartered Accountants
ZIPS	Zambia Institute of Purchasing and Supply
ZIRBM	Zambezi Integrated River Basin Management
ZNPC	Zimbabwe National Parks
ZPC	Zimbabwe Power Company
ZRA	Zambezi River Authority
ZVDF	Zambezi Valley Development Fund



## MESSAGE FROM THE CHAIRPERSON



### Preamble

It is with great honour and responsibility that I present the Chairperson's Statement for the year ended 2024. Despite the operational challenges presented by the drought that ravaged Zambia and Zimbabwe in addition to resource constraints, significant progress was recorded across several fronts. Indeed, the Authority remained committed to delivering on its mandate regarding equitable water allocation for sustainable energy production, infrastructure development and stakeholder engagement for the benefit of the peoples of the Republics of Zambia and Zimbabwe.

### Budget Performance Review

In 2024, the Authority recorded strong revenue performance with Operating Income of US\$14.95 million, exceeding the budget by 5.8%. This was mainly due to amounts received from ZESCO Limited regarding the overutilisation of water. The Operating Expenditure was significantly below budget at US\$15.59 million against US\$19.71 million, reflecting underspending in project management and consultancy services. Project Capital Expenditure reached US\$30.18 million, representing 58% of the annual capital budget which was largely funded by cooperating partners including the World Bank, Africa Development Bank (AfDB) and others.

Although liquidity was supported by payment plans agreed with the Power Utilities, their long-term indebtedness remained a major concern. Total Trade Receivables declined slightly to US\$87.2 million, while ring fenced funds in Zimbabwe decreased by 60%. As such, amounts owed by the two Power Utilities i.e. ZESCO Limited and Kariba Hydro Power Company totalling US\$89.32 million continued to constrain financial flexibility.

The Authority maintained a strong Current Ratio of 4.02, but the Acid Test Ratio dropped to 0.46 when inaccessible funds are excluded hence highlighting critical liquidity and credit risks that required urgent attention. Despite these challenges, the Authority upheld sound internal controls and accountability practices throughout the year.

### Maintenance of Kariba Dam and the Kariba Dam Rehabilitation Project (KDRP)

The Authority continued to make commendable strides in ensuring the structural integrity of the Kariba Dam. No abnormalities were recorded from both the analysis of data and visual inspections undertaken during the execution of the dam safety programme activities. On the other hand, significant progress was recorded regarding the execution of works under the KDRP. The Plunge Pool component of the KDRP was successfully commissioned in September 2024 with Euro 83.3 million having been spent while other outstanding claims were still undergoing consideration. In addition, Spillway Phase 1 works, funded under a total budget of US\$10.2 million, were projected for completion by September 2025 while Spillway Phase 2 was expected to be accomplished by September 2026.

### Hydrological Outlook and Reservoir Operations at Kariba

In adherence to its water allocation mandate, the Authority allocated 16 Billion Cubic Meters (BCM) of water in September 2023 for the year 2024 to be shared equally between ZESCO Limited of Zambia



and Zimbabwe Power Company (ZPC). Unfortunately, the actual performance of the 2023/24 rainfall season across the Kariba Catchment was below expectations, resulting in below-normal inflows. The Authority responded by maintaining the 16 BCM allocation during the first quarter of 2024 hydrological review. This was meant to support continuous power generation operations under the El Nino induced drought conditions and preserve reservoir storage going into the year 2025. As the year 2024 progressed, the forecast for the 2024/25 rainfall season for the SADC Region indicated a high likelihood of the Region receiving normal to above normal rainfall during the 2024/25 rainfall season. However, the forecasts also indicated a high likelihood of receiving below normal rainfall over some areas in the Kariba Catchment. Based on the above projections, the Authority allocated a total of Twenty-Seven Billion Cubic Meters (27 BCM) of water for power generation operations at Kariba Dam for the year 2025.

## **Water Allocation and Utilisation for Power Generation at Kariba Dam**

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The 16 BCM of water allocated to ZESCO Limited and ZPC at the Kariba Dam was expected to yield an average combined generation capacity of 428 MW. As of 31st December 2024, the Kariba Reservoir closed the year at 475.77 meters, with a live storage of 1.93%. This was a significant drop from the 12% recorded at the end of 2023. While ZPC remained within its allowable 5% over-utilisation threshold, ZESCO Limited exceeded its allocation by 16%, underscoring the growing need for stricter compliance to approved generation schedules and demand-side management during hydrologically stressed periods.

## **Execution of the 2400MW Batoka Gorge Hydro-Electric Scheme (BGHES)**

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In a bid to strengthen its institutional capacity, the Authority successfully procured a Legal Advisor, African Legal Support Facility (ALSF), which commenced the provision of services towards the end of 2024. This milestone will ensure that project implementation aligns with national and international legal standards. Simultaneously, the Authority continued updating key technical studies which were scheduled for completion by the first quarter of 2026. These studies are instrumental in shaping the project's structure and will be finalized with strategic guidance from the African Development Bank (AfDB), the Authority's Strategic Advisor. In parallel, resource mobilisation efforts were initiated through a newly constituted Committee comprising representatives from strategic institutions within the two Contracting States.

## **Execution of the Devil's Gorge Hydro-Electric Scheme (DGHES)**

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The Authority continued undertaking prefeasibility studies for the DGHES aimed at identifying optimal locations for hydro-electric development. The Options Assessment Report highlighted nine potential sites within the Sidinda/Nsingu and Mlibizi/Mangonda areas, with indicative capacity ranging from 1,400MW to 1,800MW.

The environmental and social screening conducted during this phase revealed critical factors for consideration in subsequent studies. The final prefeasibility report is expected to be availed to the Authority by December 2025 after undertaking additional geological and bathymetric surveys.

## **Floating Solar Photo Voltaic (PV) Project on Lake Kariba**

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Recognizing the urgent need for diversified renewable energy sources, the Authority partnered with the AfDB with a view to embarking on the development of the Lake Kariba Floating Solar PV project. The AfDB confirmed a grant of US\$500,000 from the Sustainable Energy Funding for Africa (SEFA) to be availed to the Authority for purposes of funding feasibility studies. The procurement process



for a consultant is expected to be concluded by June 2025. This project represents a crucial step in mitigating the adverse effects of climate change on the Zambezi Basin, particularly in relation to the reduction in water flows.

## Implementation of Projects under the Zambezi Valley Development Fund (ZVDF)

The Authority continued to prioritize socio-economic upliftment for riparian communities through the Zambezi Valley Development Fund (ZVDF). In 2024, three vital projects were commissioned: the Njabalombe Rural Health Centre (Zimba District, Zambia), Chiroti Clinic (Hurungwe District, Zimbabwe), and a new two-classroom block at Chisipiti Primary School (Hurungwe District, Zimbabwe). Thirteen additional projects valued at approximately US\$1.09 million were in various stages of implementation by year-end. These initiatives which include water supply, irrigation, health and education infrastructure, underscored the Authority's continued dedication to ensuring access to social amenities by the Riparian Communities that were displaced to pave way for the construction of the Kariba Dam.

## Enhancement of Corporate Image and Stakeholder Relations

A key highlight of the year was the completion of a Partner and Client Satisfaction Baseline Survey (PCSBS). The findings revealed a Partner and Client Satisfaction Index of 81%, well above the acceptable benchmark of 61% and a Brand Equity Index of 77%. These outcomes reflected the Authority's strong brand perception and service delivery.

## Corporate Governance Developments

In 2024, new appointments were made in respect of the Authority's governance structures. Hon. Makozo Chikote (MP), Minister of Energy (Zambia), joined the Council of Ministers. Mr. Mulele M. Mulele, Permanent Secretary at the Ministry of Finance and National Planning (Zambia), was appointed to the Board. Further, Eng. Spyke Kaoma (Zambia) was also appointed as an Independent Board Member, reinforcing the Authority's commitment to accountability and diversity in leadership.

## Acknowledgments

I wish to extend heartfelt gratitude to our cooperating partners, stakeholders, Management and staff of the Authority. The 2020 to 2024 Corporate Strategic period was fraught with challenges: the novel COVID-19 Pandemic with its onset in 2020 and the El Nino induced drought which ravaged the Zambezi River Basin during the last three years. The resilience shown throughout the volatile operating environment enabled the Authority to meet most of its strategic objectives. The collaborative spirit across all levels continued to drive the Authority's mission forward.

Together, we remain committed to promoting socio-economic development and improving the livelihoods of citizens in the two Republics of Zambia and Zimbabwe.



**Dr. Gloria S. Magombo**

Board Chairperson

Secretary - Ministry of Energy & Power Development,  
Zimbabwe





**ZAMBEZI RIVER AUTHORITY**

# PROFILE



## ZAMBEZI RIVER AUTHORITY PROFILE

The Zambezi River Authority was established as a body corporate on 1st October 1987 by parallel legislation in the Parliaments of Zambia and Zimbabwe following the reconstitution of its predecessor, the Central African Power Corporation (CAPCO).

The Authority is jointly and equally owned by the Governments of Zambia and Zimbabwe.

The Authority's primary mandate is to obtain, for economic, industrial and social development of the two countries of Zambia and Zimbabwe, the greatest possible benefits from the natural advantages offered by the waters of the Zambezi River and to improve and intensify the utilisation of the waters to produce energy and for any other purpose deemed beneficial to the two countries.

### KEY STRATEGIC FUNCTIONS

The following are the key statutory functions of the Authority.

**a.**



The operation, monitoring and maintenance of the Kariba Dam.

**b.**



In consultation with the national electricity undertakings, investigate the desirability of constructing new dams on the Zambezi River and make recommendations thereon to the Council of Ministers (COM).

**c.**



To construct, operate, monitor and maintain any other dams on the Zambezi River.

**d.**



To collect, accumulate and process hydrological and environmental data of the Zambezi River for the better performance of its functions and for any other purpose beneficial to the Contracting States.

**e.**



Regulate the water level in the Kariba reservoir and any other reservoirs owned by the Authority.

**f.**



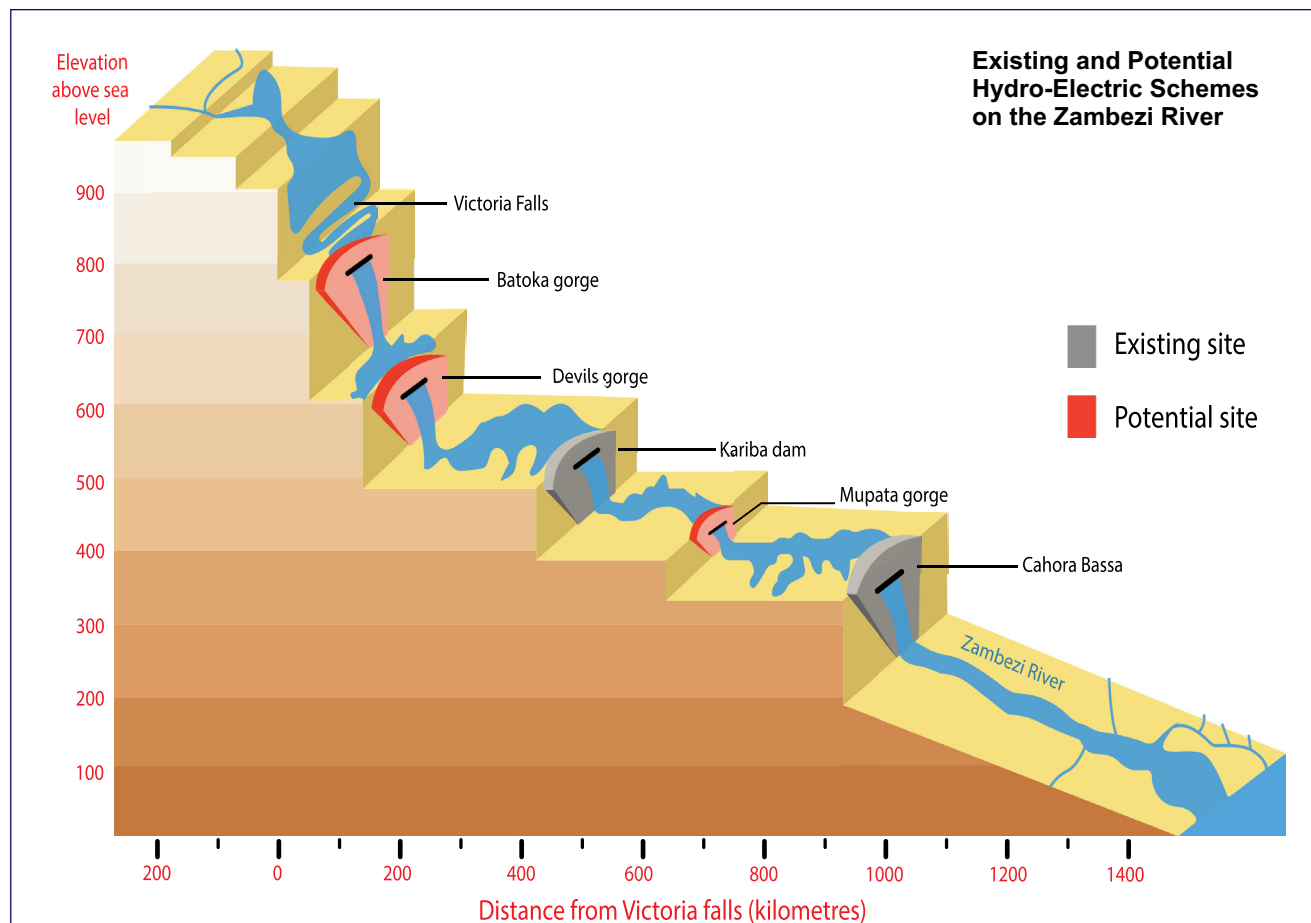
Submit development plans and programmes to COM for approval.

The Authority is the only transboundary dam management organisation serving two States within the Zambezi River basin. The Authority's primary source of revenue is from the sale of water from the Kariba Dam to ZESCO Limited in Zambia and Zimbabwe Power Company in Zimbabwe for power generation.



## Existing and Potential Hydro-Electric Power Sites on the Zambezi River





The image below shows the existing Kariba Hydro-Electric Scheme as well as the envisaged ones such as the Batoka Gorge Hydro-Electric Scheme (BGHES), the Devil's Gorge and Mupata Gorge Hydro-Electric Schemes.



### Integrated Results Based Management (IRBM) Aligned 2020-2024 Corporate Strategic Objectives

Icon	Goal	Objective	From / By	To	Deadline
	Water Storage	Increase Zambezi water storage volume	181 billion m <sup>3</sup>	182.65 billion m <sup>3</sup>	2024
	Governance	Improve governance & compliance	86%	98%	2024
	Social Amenities	Increase community access funding	US\$1.2M		2024
	Efficiency	Reduce variance in water allocation	10%	3%	2024
	Change Management	Reduce resistance to change	50% annually		2024
	Partnerships	Increase satisfaction index	10% annually		2024

## Integrated Results Based Management (IRBM) Aligned 2020-2024 Corporate Strategic Objectives

Icon	Goal	Objective	From / By	To	Deadline
	Client Satisfaction	Improve client satisfaction index	60%	98%	2024
	Performance	Improve organizational performance	10% annually		2024
	Financial Health	Improve acid test ratio	3%	75%	2024
	Revenue Streams	Grow non-traditional revenue	1.5% 2.5%	2024	2024

### OUR VISION



To be the model organisation in dam and water resources management in the Zambezi River basin.

### OUR MISSION



To encapsulate safety, professionalism and respect in harnessing the water resource for socio-economic development, exhibiting integrity through honesty.

## OUR VALUES

In order to assist employees to internalise the organisation's core values, an acronym for the values - **SHIPRe** - was devised.



#### Safety

Protection anchored on care, wellness, health and peace of mind.



#### Honesty

Trust premised on accountability and transparency.



#### Integrity

Fairness encompassing justice as well as responsibility.



#### Team Work

Innovation for adaptability rooted in diligence, commitment, communication and self-improvement



#### Professionalism

Love for teamwork and family with empathy.



## COUNCIL OF MINISTERS

The Zambezi River Authority is governed by a Council of Ministers (COM) consisting of four Ministers, two of whom represent the Government of the Republic of Zambia while the other two represent the Government of the Republic of Zimbabwe. The Ministers designated as members of COM are those who hold the portfolios of Energy and Finance in the Contracting States.

According to the ZRA Acts, the Chairpersonship of the COM is held alternately on an annual basis, by the Ministers responsible for Energy in the Governments of Zambia and Zimbabwe. For the year under review, Zimbabwe held the Chairpersonship of COM.



**Hon. Edgar Moyo, MP**

**COM Chairperson, Minister of Energy and  
Power Development, Zimbabwe**



**Hon. Makozo Chikote, MP**

**COM Co-Chairperson  
Minister of Energy, Zambia**



**Hon. Prof. Mthuli Ncube, MP**

**Minister of Finance, Economic  
Development and Investment  
Promotion, Zimbabwe**



**Hon. Dr. Situmbeko Musokotwane,  
MP**

**Minister of Finance and National  
Planning, Zambia**

## THE BOARD OF DIRECTORS

The Authority's Board of Directors comprises two Permanent Secretaries with the Energy portfolios and two Permanent Secretaries with the Finance portfolios in the two Contracting States. In addition, the Board also comprises one independent member from each Contracting State. The Board is chaired alternately by the Permanent Secretaries with the Energy portfolio.



**Dr. Gloria S. Magombo**

Pr. (Eng.); FZIE; MSc Mechanical Eng.; MBA, PhD (Hon.)

**Board Chairperson**

Secretary - Ministry of Energy & Power Development, Zimbabwe



**Mr. Peter Mumba**

BA Industrial Psychology and Business Administration; MSc Human Resource Development and Adult Education

**Board Co-Chairperson**

Permanent Secretary (Technical Services) - Ministry of Energy, Zambia.



**Mr. George T. Guvamatanga**

ACI; Dip. Banking; MBA Banking.

**Secretary**

Ministry of Finance, Economic Development and Investment Promotion, Zimbabwe



**Mr. Danies Chisenda**

BSc (Hons) Economics; MSc Development Economics

**Permanent Secretary**

Ministry of Finance and National Planning, Zambia

(Retired on 4th September 2024)



**Eng. Israel Rwodzi**

Pr. (Eng); FZWeEI; MZAICE; BSc (Hons) Civil Eng; Hon. Doc. Eng

**Independent Board Member, Zimbabwe**



**Eng. Spyke K. M. Kaoma**

BEng. Civil Engineering, MBA

**Independent Board Member, Zambia**

(Appointed on 14th October 2024)



**Eng. Clement F. G. Mukosa**

Msc. Eng.; PGDip. Soil & Water Eng.

**Independent Board Member, Zambia**

(Eng. Mukosa was appointed on 15th March 2024 and died 23rd July 2024)



**Eng. Bernard Chiwala**

BEng. Civil Engineering, MBA

**Independent Board Member, Zambia**

(Retired on 15th March 2024.)



## SUMMARY OF THE BOARD CHARTER

The Authority recognizes the importance of adopting and practicing good Corporate Governance in its business operations. To this end, the Authority subscribes to and actively champions, the principles of sound corporate governance and always strives to ensure that the principles of fairness, transparency and accountability inform all its business decisions.

The Authority's Board of Directors ("the Board"), in terms of the Zambezi River Authority Acts Chapters 467 and 20:23 ("the ZRA Acts") of Zambia and Zimbabwe, respectively, is responsible for the policy, control and management of the Authority. The Board, in the discharge of its aforesaid statutory functions, recognizes that there is a contribution that good governance and attendant procedures could make to the Authority particularly in enhancing its performance, ensure efficient utilization of resources and further cementing of stakeholder relations and increasing its prospects of access to local, regional and international capital as well as hedging against reputational and investment risks. It is this recognition that motivated the Board to adopt the Board Charter as one of the Authority's several strategic interventions aimed at placing the Authority as one of the leading good corporate governance champions in the Water and Energy sector within the region and beyond.

The Board Charter is premised on fostering the following principles in the discharge of business operations by the Authority: Equity, Transparency; Accountability; Honesty; Integrity and Fairness. Inherent in these principles and elaborated more within the provisions of the Board Charter are good ethical conduct, avoidance of conflict of interest, corporate social responsibility as well as compliance with regulatory requirements and statutory provisions.

### Remuneration and Compensation Policy for Board Members

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The Remuneration and Compensation Policy is provided for in the Board Charter as follows:

- a) Each member of the Board shall be paid out of the funds of the Authority such remuneration and allowances, if any, as the Council of Ministers may determine.

Currently, Board Members are paid a quarterly fee determined and approved by the Council of Ministers and a variable fee per each meeting. The Chairperson and the Co-Chairperson are paid amounts which are slightly higher than the rest of the Members to compensate for the increased responsibilities that they perform.

In addition, a fixed subsistence allowance is paid to Board Members when they attend meetings held outside their hometowns.

### Remuneration and Compensation for the year 2024

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The total remuneration availed to Board Members during the year under review amounted to **US\$ 74,404.40** while that availed to COM and ICO Members amounted to **US\$64,875.46**.



## BOARD COMMITTEES

The Board recognises that in this global and complex business environment, demand on the Board's time continues to increase thereby necessitating the need to delegate issues to specialist Board Committees. In this regard, the Board Charter in Articles 26, 27 and 28 provides for the establishment of three (3) Board Committees as follows: -

### a. Finance, Human Resource and Remuneration

This Committee has been charged with the following prime responsibilities.

- (i) reviewing accounting systems and financial reporting to safeguard the Authority's assets.
- (ii) monitoring the competence with which Budget activities are carried out.
- (iii) recommending to the Board measures that would ensure the Authority's continued viability.
- (iv) reviewing and recommending to the Board, comprehensive policies and strategies relating to the remuneration; terms and conditions of employment, succession planning, training & development and separations.
- (v) reviewing and recommending Executive Management employees' and Board Members remuneration policies by ensuring that such policies remain relevant in attracting, retaining and motivating both Executive Management employees and Board Members.

The Committee comprised the following members:

NAME	POSITION	MEETINGS ATTENDED	NOTES
Mr. George T. Guvamatanga	Secretary, Ministry of Finance, Economic Development and Investment Promotion Zimbabwe	4/4	Nil
Mr. Danies K. Chisenda	Permanent Secretary, Ministry of Finance and National Planning – Zambia	2/4	Mr. Chisenda retired and in his stead Mr. Mulele M. Mulele was appointed to act as Permanent Secretary.

### b. Audit, Risk Management and Corporate Governance

The Committee has the following responsibilities:

- (i) monitors the competence with which external audits are carried out and ensures that the Auditor's recommendations are given due consideration.
- (ii) ensures that the Authority has appropriate risk management systems and that the Board understands the key risk factors, their likely impact on Authority operations as well as how well the risk mitigation factors are working.
- (iii) ensures sound corporate governance structures and systems in the Authority; and
- (iv) considers and deliberates on matters relating to the Board and individual Board Members, including appointments, induction, training & development and Board Procedures.



The Committee comprised the following members:

NAME	POSITION	MEETINGS ATTENDED	NOTES
<b>Eng. Israel Rwodzi</b>	Independent Board Member -Zambia	4/4	Nil
<b>Eng. Bernard Chiwala</b>	Independent Board Member – Zimbabwe	1/4	Eng. Chiwala was retired and Eng. Clement F. G. Mukosa was appointed in his stead. Upon Eng. Mukosa's demise, Eng. Spyke Kaoma was appointed in October 2024
<b>Ms. Tariro Mhuka</b>	Independent Committee Member – Zambia	2/4	Nil
<b>Dr. David Kalaba</b>	Independent Committee Member – Zimbabwe	4/4	Nil

### c. Technical and Projects

This Committee is mandated to discharge the prime responsibility of reviewing technical issues arising from the two (2) engineering departments of the Authority being the Projects and Dam Management Services and the Water Resources and Environmental Management, including reports issued by the Authority's consultants. The Committee also makes necessary recommendations to the Board on all technical issues.

The Committee had the following members:

NAME	POSITION	MEETINGS ATTENDED	NOTES
<b>Eng. Israel Rwodzi</b>	Independent Board Member -Zambia	4/4	Nil
<b>Eng. Bernard Chiwala</b>	Independent Board Member - Zimbabwe	1/4	Eng. Chiwala was retired and Eng. Clement F. G. Mukosa was appointed in his stead. Upon Eng. Mukosa's demise, Eng. Kaoma was appointed in October 2024.
<b>Eng. Nobert Matarutse</b>	Acting Managing Director, Zimbabwe Power Company - Zimbabwe	4/4	Nil
<b>Eng. Victor Mapani</b>	Managing Director, ZESCO Limited – Zambia	0/4	The meetings were attended by proxies Eng. J. Loongo and Eng. W. Lwiindi

## EXECUTIVE MANAGEMENT COMMITTEE



**Eng. Munyaradzi C. Munodawafa**

**Chief Executive**



**Mr. Peter Kapinga**

**Board Secretary/Corporate  
Services Director**



**Mr. Edward M. Kabwe**

**Director – Finance**



**Eng. Sithembinkosi Mhlanga**

**Director  
Projects and Dam Management  
Services**



**Eng. Christopher Chisense**

**Director  
Water Resources & Environmental  
Management**





# STRATEGIC REPORTS

**GROUPED PER KEY RESULT AREA**



# KRA 1: DAM, WATER RESOURCES AND ENVIRONMENTAL MANAGEMENT

## 1.1 Dam Management Services

Dam Management Services focus on the monitoring and maintenance of the Authority's dam infrastructure.

### 1.1.1. Monitoring and Maintenance of Kariba Dam

During the period under review, monitoring and maintenance works were carried out in accordance with the mandate and corporate strategic goal of ensuring the long-term safety of the Kariba Dam. Various surveillance and monitoring (S&M) and operations and maintenance (O&M) activities were undertaken during the year in keeping with the Standing Operating Procedures (SOP) and the results recorded were as follows:

- a) A 99.07% rate of compliance against a target of 97% in respect of the execution of various S&M activities from twenty-six (26) sets of dam monitoring instruments.
- b) An 81.14% rate of completion in respect of the execution of planned O&M activities of the SOP and recommended works of the mid-term and Five-Yearly inspections.

The Kariba and surrounding areas experienced eight (8) earthquakes in December 2024. The earthquake magnitudes ranged between M4.3 and M4.9. No unusual observations were made from both visual inspections and the analysis of dam safety data that were performed following the occurrence of the earthquakes. Accordingly, the state of Kariba Dam in 2024 could be summarised as follows:

- a) The dam exhibited normal behaviour that was consistent with the loading conditions that were experienced during the year.
- b) No abnormal behaviour of the dam and its abutments was recorded.
- c) The displacement records from various monitoring instruments were predominantly towards the upstream primarily because of the effects of lower reservoir water levels and higher than average ambient temperatures that were experienced during the year.

#### 1.1.1.1. Water Flow Meters

Flowmeters are used to determine the amount of turbine discharge. Tractebel Engineering submitted a draft design report to the Authority, indicating preferred locations for the installation of ultrasonic flow meters in the power stations and the implementation programme thereof in December 2024. The project will be phased over a two-year period in liaison with ZESCO Limited (Zambia) and Zimbabwe Power Company (ZPC).

### 1.1.2. Surveillance and Monitoring

One mid-term and two bi-annual inspections were carried out. The former was jointly undertaken with Tractebel Engineering (SA France), the Authority's advisory consultant for the operation and maintenance of Kariba Dam. In addition, the Authority carried out various routine and incident-triggered inspections in accordance with the SOP requirements as described below:

### 1.1.2.1. Dam Inspections

Ten monthly dam safety inspections were carried out during the year in accordance with the requirements of the SOP. The inspections focused on evaluating the structural integrity and condition of the primary dam installation including the following:

- a) South bank shafts PS1 and PS2 - where the underground adits lighting system was rehabilitated to a full level of functionality.
- b) The upstream face of the dam was inspected from a boat. No irregularities or new observations were made.
- c) Various remedial actions were carried out to address SOP requirements and recommended works that were identified from routine inspections including the following:
  - (i) Refurbishments and installation of new lighting circuitries in the dam galleries and south bank adits.
  - (ii) Cleaning and removal of calcite from drainages in galleries.
  - (iii) Maintenance of the plinths and underground drains of the South Bank.
  - (iv) Phased slope protection works at the hairpin bend along the international road on the South Bank.

### 1.1.2.2. Bi-annual Inspection

The Authority carried out two bi-annual inspections of dam and abutments, adits, shafts and the south bank slope in May and November 2024. No unusual observations were recorded. All the maintenance recommendations that were recorded were either immediately addressed or incorporated into the 2025 Annual Work plan.



Figure 1. Authority employees during the biannual inspection in November 2024.



### 1.1.2.3. Mid Term-Inspections

One joint inspection with Tractebel Engineering SA France was undertaken in June 2024. The final report was issued in October 2024 highlighting the following major findings:

- That the Authority had maintained a good record of dam safety data since the previous Five-Yearly inspection of August 2021.
- That the Authority should consider training new dam safety personnel in statistical analyses of dam safety data and evaluation of geodetic deformation surveys; and
- That the Authority should perform a three-dimensional finite element analysis (3D FEA) of the dam and South Bank for prediction of deformation behaviours of the dam and South Bank slope.

### 1.1.3. Earthquake Incidences

In December 2024, the Kariba and surrounding areas experienced eight (8) earthquakes of magnitude ranging between M4.3 and M4.9. The earthquakes were recorded by both the Meteorological Services Department of Zimbabwe and the US Geological Services (USGS) department. The epicentres were triangulated to between 19km and 151km south-east of the dam at a depth of approximately 10km. This region around Kariba and the Hurungwe District in Zimbabwe shown in Fig. 2 below has experienced several reservoir-induced seismicity since the impounding of Lake Kariba in the 1960s. No unusual observations were made from both visual inspections and the analysis of surveillance and monitoring data that was recorded after the earthquakes.

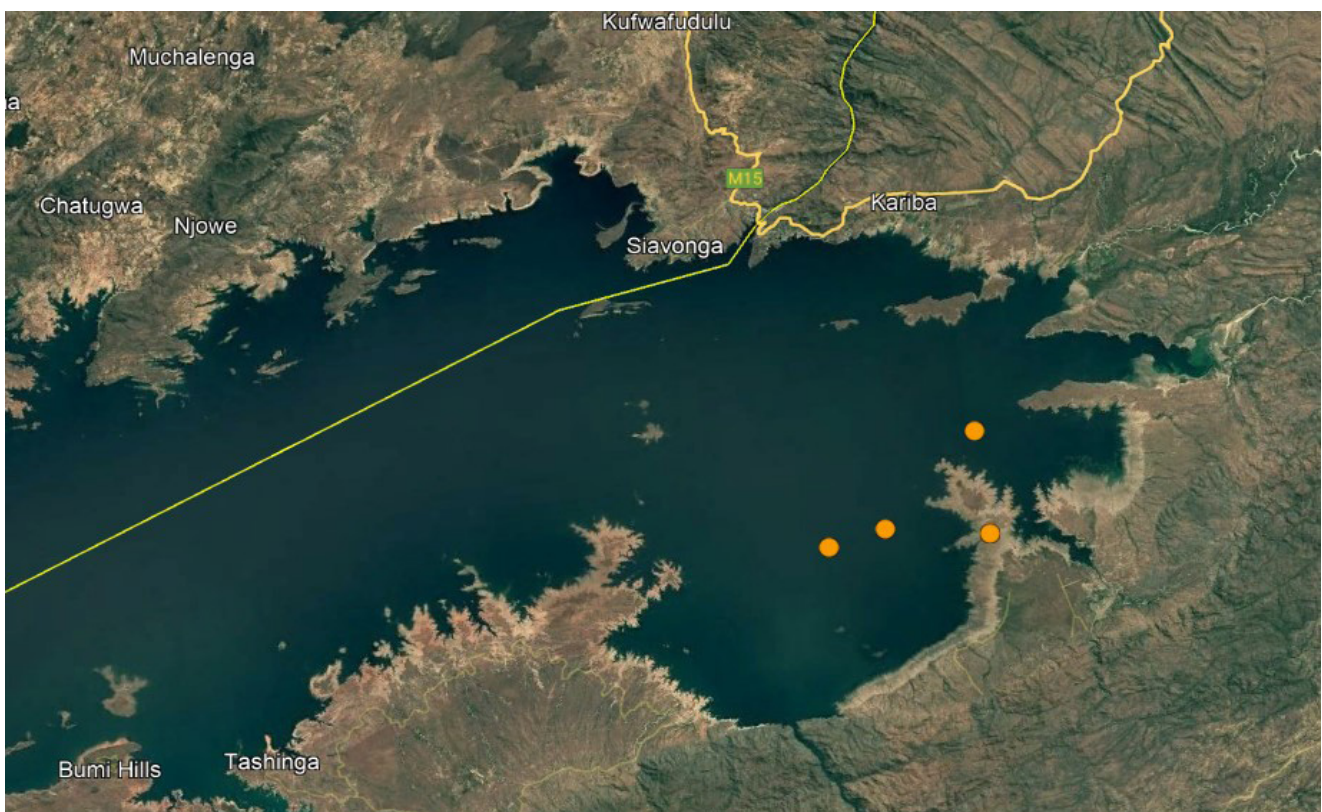


Figure 2: Location of epicentres of four of the eight earthquakes recorded in December 2024.

The occurrence of earthquakes in the region south-east of Kariba is well documented. Studies have shown that the filling and presence of the lake triggered old faults of the Precambrian era in this region of Kariba. Depending on the water levels, reservoir-induced earthquakes are experienced in the reservoir.

For safety monitoring of the Kariba Dam and as confirmed through inspections and analysis of data, there was no damage caused by the earthquakes. This is because they were relatively small, with epicentres that were relatively remote to the Dam. They therefore did not result in significant ground movements or vibrations that could be of concern to the structural integrity of the Dam.

#### 1.1.4. Data Collection and Analyses

The behaviour of the Dam is monitored through a network of various instruments that are installed to measure several parameters such as radial crest displacements, groundwater movement, and the rate of swelling in the concrete. The following are results from selected instruments that highlight the overall status of the Dam as observed during the reporting period:

##### 1.1.4.1. Pendulums

Kariba Dam is sensitive to ambient temperature variations at low reservoir water levels when effects of alkali silica reaction (ASR) accelerate displacements towards the upstream. This was observed between mid-2022 and mid-2024 when above-average temperatures were recorded in the region, inducing significant deflections towards the upstream.

The Dam has several pendulums that record displacements along vertical lines. An analysis of time histories of the evolution of radial displacements showed a global trend of deflections towards the downstream when the reservoir water level is increasing, followed by an inversion of deflections towards the upstream from mid-August 2024. After maintaining a steady movement towards the upstream, displacements stabilised in October 2024. From November 2024, the general trend was that the crest of the Dam began to displace towards the downstream, with some inversions towards the upstream depending on the rate of reservoir water level gain and ambient temperature variations. Indeed, at low lake levels, the upper region of the Kariba Dam is more flexible and sensitive to air temperature variations that accelerate movements towards the upstream when the reservoir water level is low.

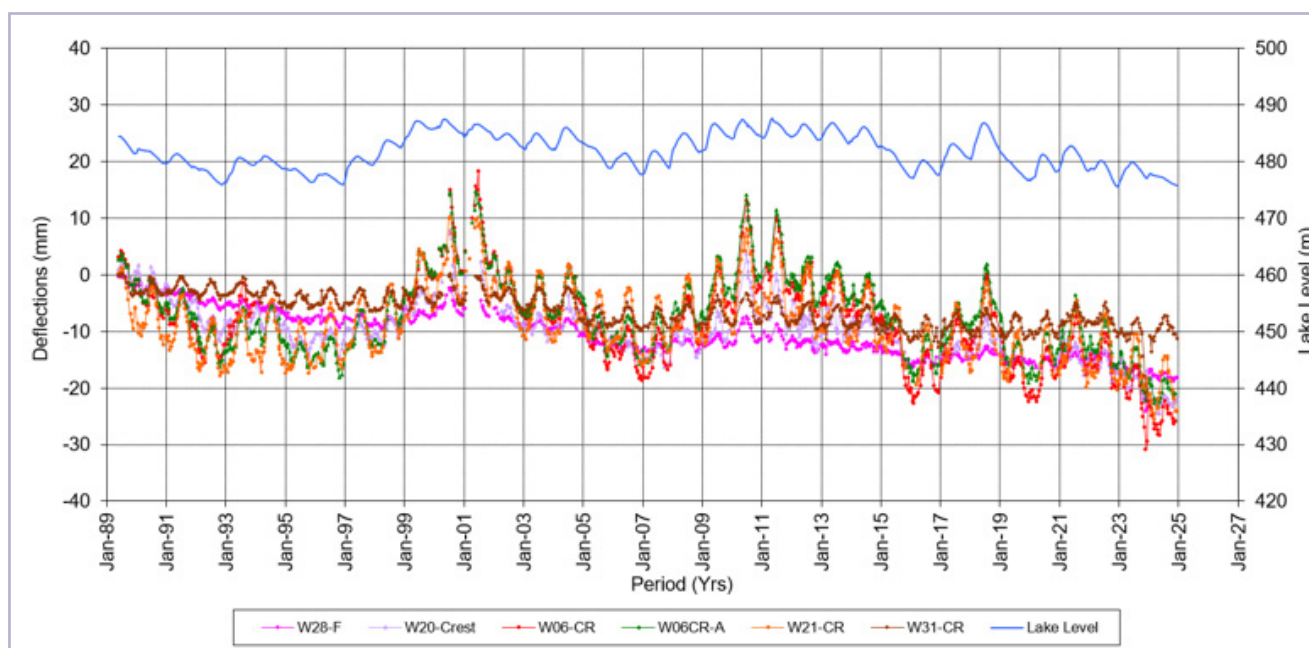


Figure. 3. Displacements measured from the pendulums at the crest of dam.



#### 1.1.4.1.1. P434/T434 Measurements

Figure 4 shows the historical displacements recorded from target P434/T434.

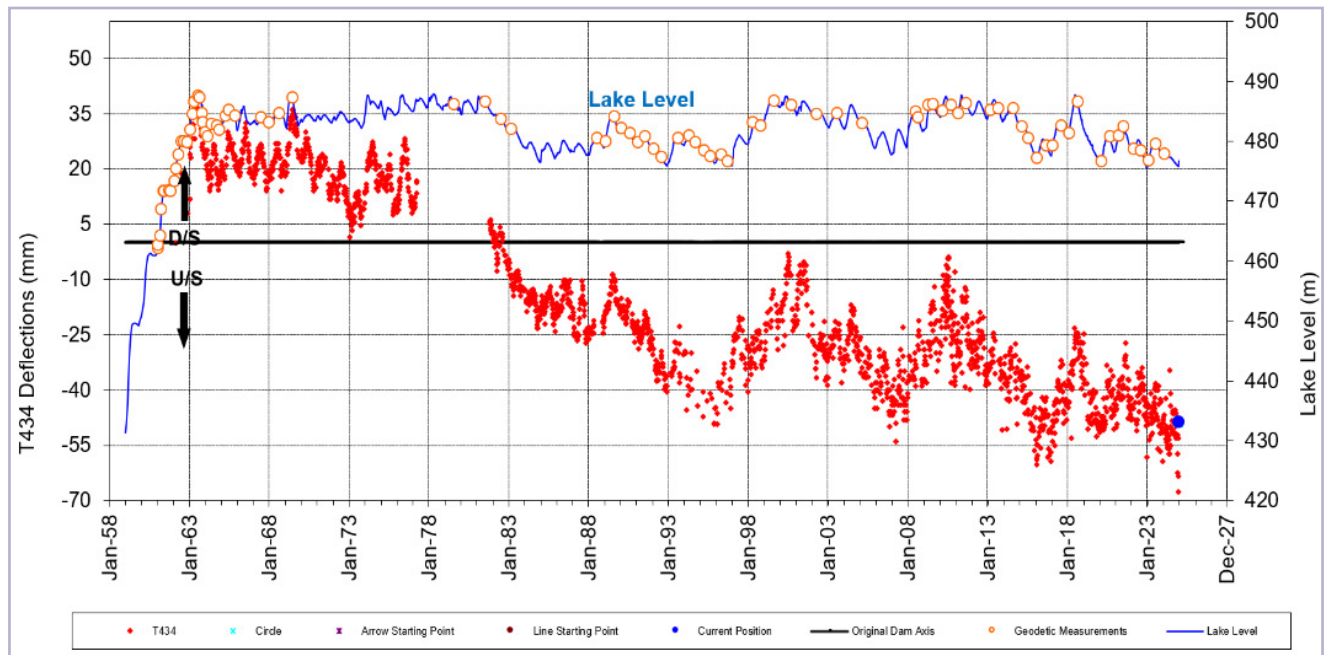


Figure 4. Dam deflections measured from Station P434/T434.

Analysis of data collected from target P434/T434 over different periods since 1963 after the filling of the reservoir during periods of high and low water levels, and after the installation of pendulums in 1989 show that displacements are high during periods of low reservoir water levels compared to periods of high reservoir water levels. Data from pendulums and geodetic surveys show accelerated deflections towards the upstream under elevated air temperatures and low lake levels.

From this data, the conclusion is that whereas significant deflections towards the upstream were recorded, they were within tolerance and did not compromise the structural integrity of the Dam.

#### 1.1.4.2. Groundwater Flow

Groundwater flow around the Dam is monitored using piezometers that were installed during construction, and later in 1989; 1994 and the reshaping works of the Plunge Pool at the commencement of the project in 2017. Depending on the locations of each instrument, piezometric levels depend on the reservoir and plunge pool water levels, as well as hydraulic conductivity of the surrounding rock. Figures 5 and 6 show that normal piezometric water heads were recorded corresponding to prevailing conditions of reservoir and Plunge Pool water levels during the year.

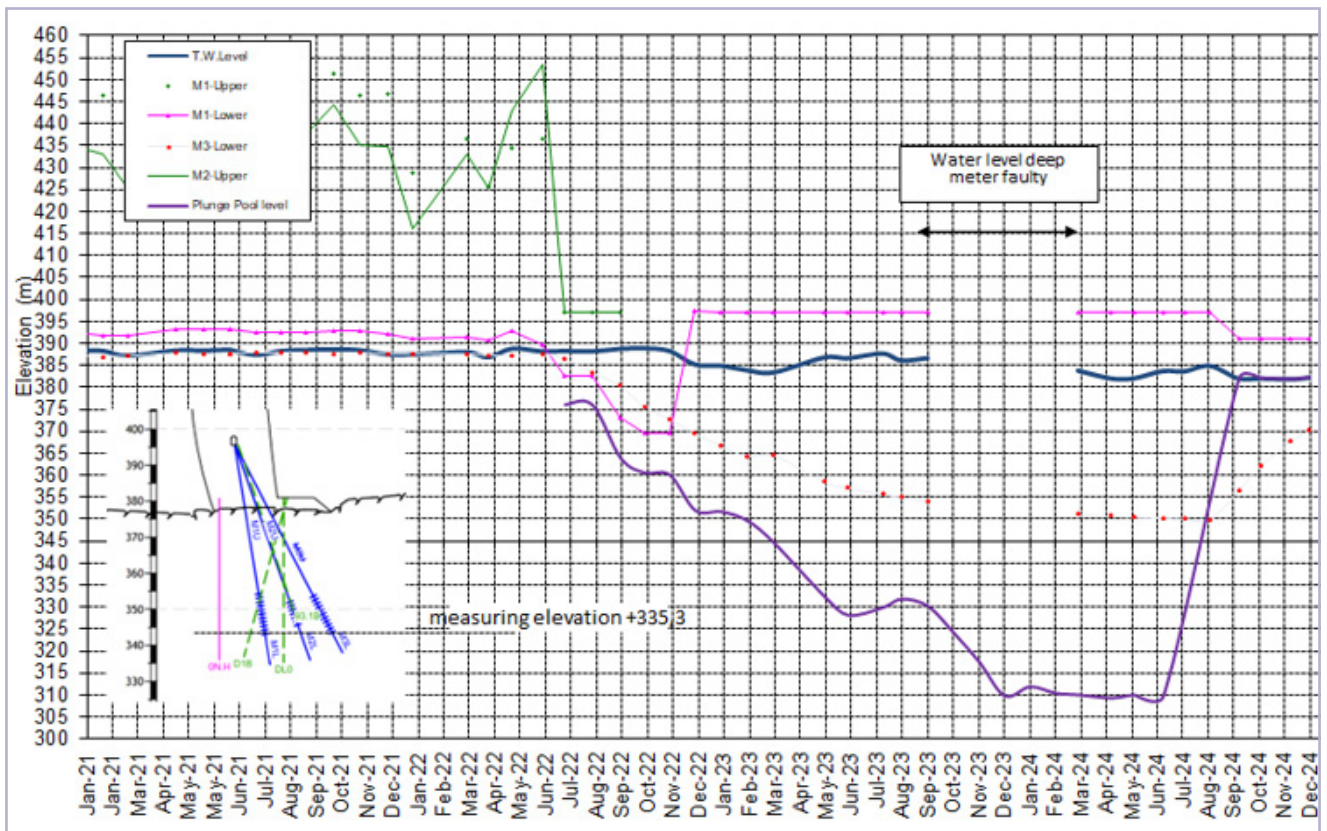


Figure 5: Piezometers M1; M2 and M3 groups located at the centre of the Dam.

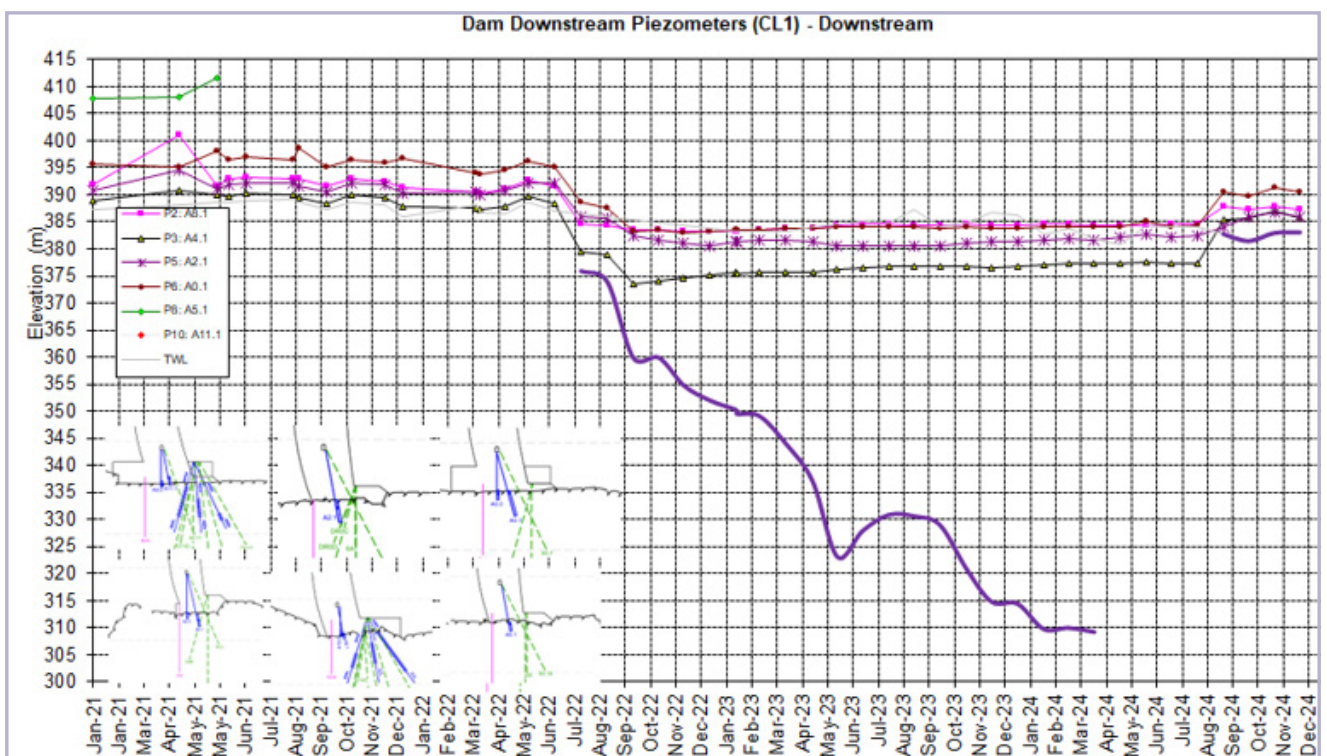


Figure 6: Piezometers CL1 group located on the downstream section of the Dam.



### 1.1.4.3. South Bank Seepage Measurements

Seepage was monitored at various locations in the Dam and South Bank. Measurements at four key locations being Q6; Q9; Q47 and Q55 act as key indicators regarding the overall state of the groundwater situation of the South Bank. Among these, high discharges were recorded from the South Bank discharges at Q6 and Q9 after rain events as shown in Fig. 7. This is considered normal. It confirms the effectiveness of the groundwater evacuation system around the Dam.

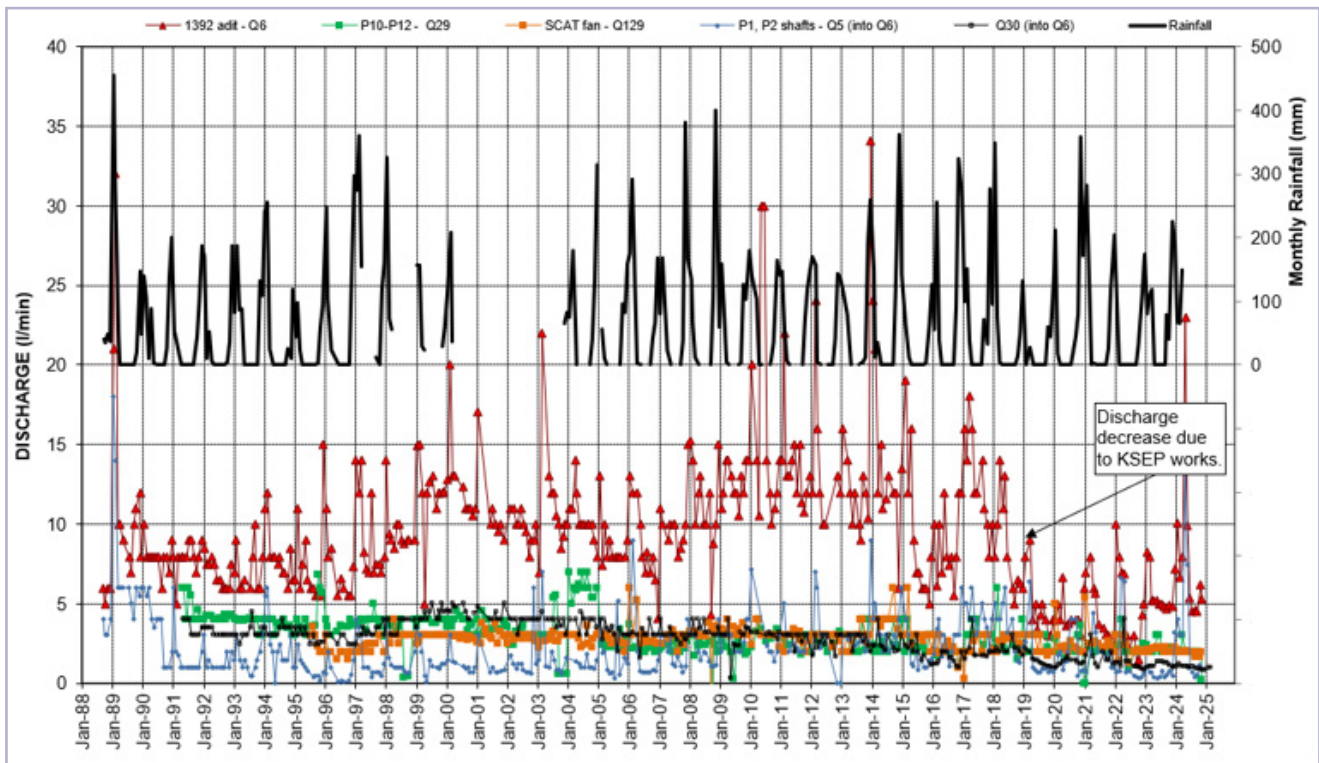


Figure 7: Drainage discharges measured from Adit 1392 and P1/P2 Shafts

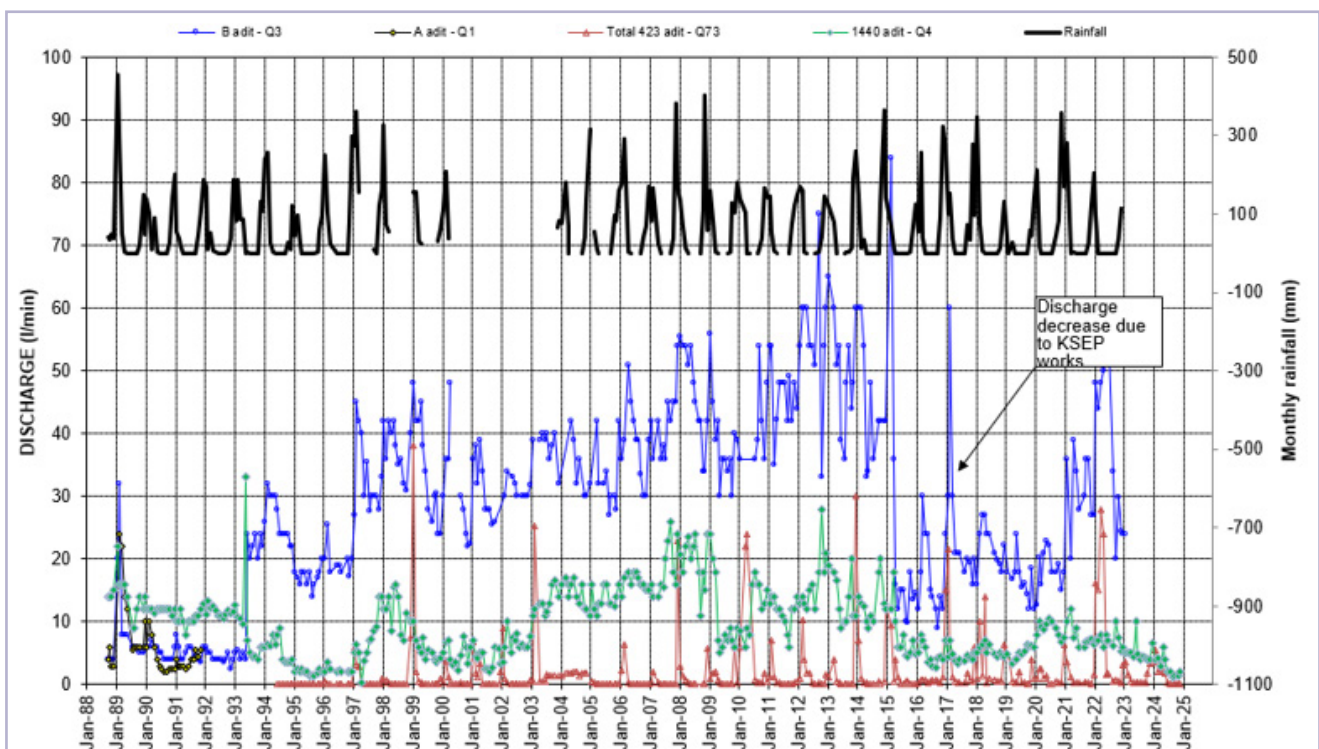


Figure 8: Total drainage discharges measured from the South Bank adits.

Figures 7 and 8 show that no abnormalities were recorded from either the Dam or South Bank discharges. The measured flows were consistent with conditions that prevailed during the year.

#### 1.1.4.4. Levelling Measurements

Precision levelling has been carried out since construction of the Kariba Dam in the 1950s. Fig. 9 below shows results of precision levelling measurements of the dam crest since 2005.

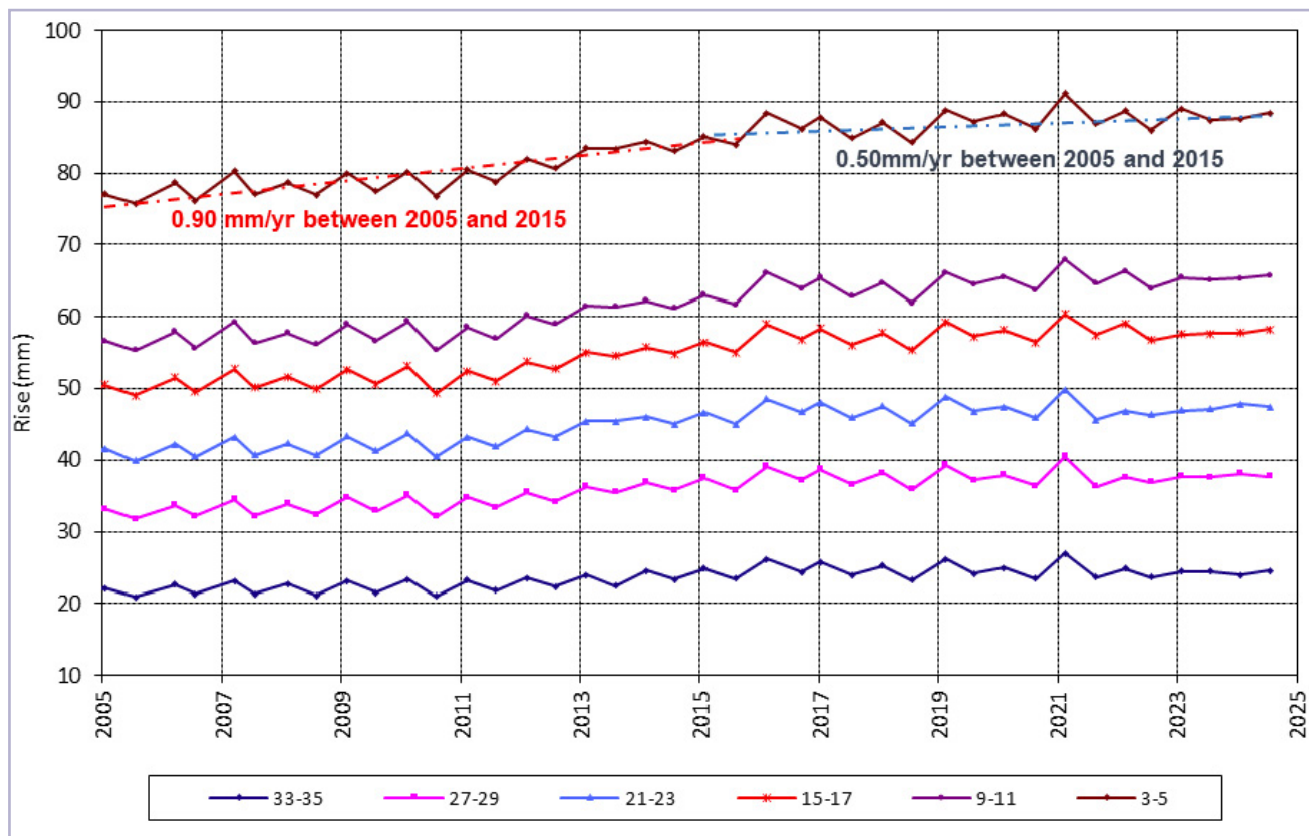


Figure 9: Results of precision levelling of the dam crest between 2005 and 2024.

Figure 9 shows that the central part of the Dam between block numbers 3-5 and 0-2 exhibited the highest but slowing rate of swelling in the concrete due to Alkali Silica Reaction (ASR). The rate of swelling was approximately 2.30 mm/year in the first period after filling the reservoir before reducing to about 1.20 mm/year between 1985 to 2005. The rate further reduced to 0.90 mm/year from 2005 to 2015 and to about 0.50 mm/year between 2015 and 2024. A similar trend was recorded across several other sections of the Dam as indicated in Fig. 10 below. This is synonymous with the depletion of ASR-causing reactants within the concrete forming the body of the Dam.



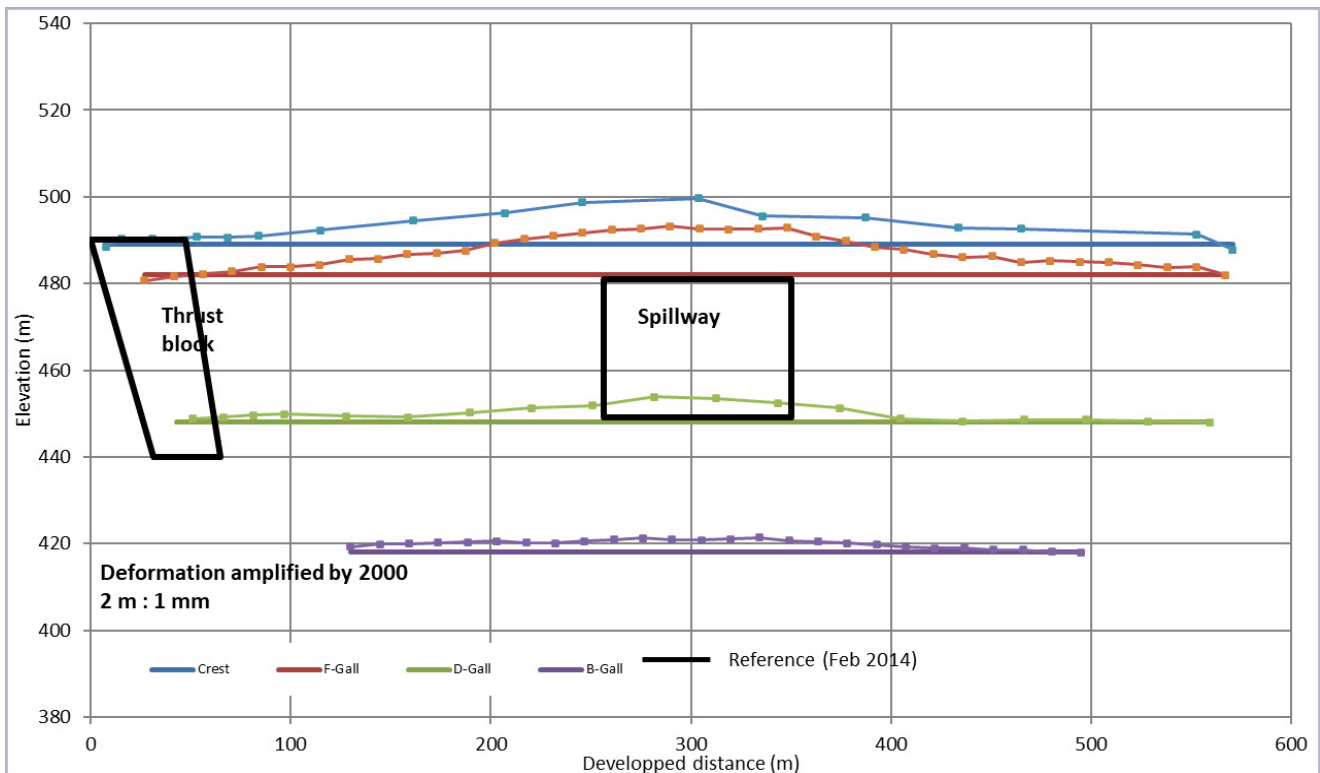


Figure 10. Results of precision levelling observed from the downstream face of the Dam.

The results of precision in Fig. 10 shows the swelling levels recorded from the bottom to the crest of the Dam, when observed from the downstream face of the Dam. A well-defined dome shape is observed around the spillway sluices. This is due to cement-rich concrete that was used to make the concrete used around the Spillway and the prominence of ASR effects around the floodgates. A comparison of results of measurements recorded from around the centre of the Dam around Block number 0-2 at gallery F level over ten-year periods (between February 2011 and February 2021 and February 2014 and February 2024) evidently shows a decrease in the rate of swelling and displacements at the dam crest from 3.30 mm/year to 1.10 mm/year. This further confirms that the rate of swelling in the main concrete body of the Dam is gradually reducing as the reactants deplete with the ageing of the Dam.

By comparing the rate of expansion in the concrete between the Dam galleries, it was possible to establish the global rate of swelling per zone. The analysis showed that below gallery F, the average rate of swelling reduced from 5µm/m/year to 3.8µm/m/year. The rate of swelling is higher in the upper central parts of the Spillway because of low stresses around the sluiceways due to the presence of reinforced cement-rich concrete and the presence of water within the less constrained openings of the Spillway sluices. The spillway zone, therefore, shows a reduction in the average rate of swelling from 30 µm/m/year to about -0.6 µm/m/year.

#### 1.1.4.5. Spillway Extensometers

In addition to the abutment extensometers installed around the thrust block and horizontal rock meters that link pendulum W21 and W20 wires at gallery B level, the macro scale rate of swelling around the Spillway is measured using the WE and VEH extensometers. In general, a slowing rate of swelling was observed since 2008 as shown in Figure 11 below for extensometer WE3 that is located on pier number 5/6 of the Spillway area.

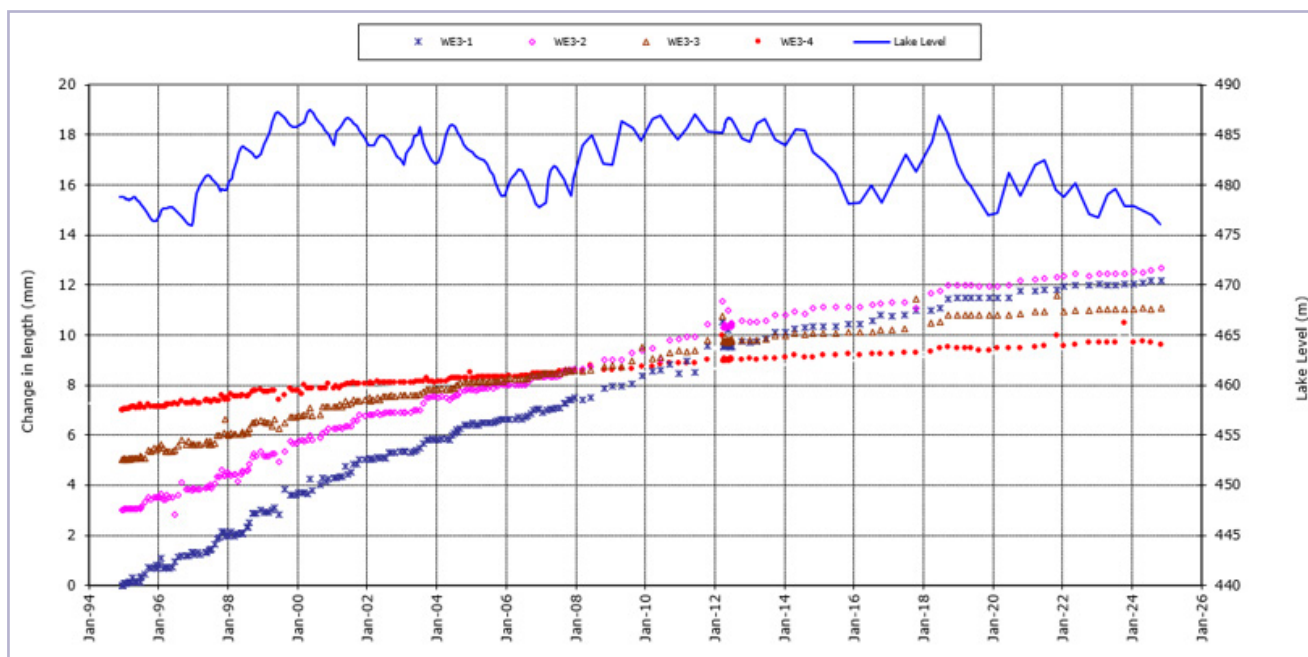


Figure 11. Rate of swelling as measured from extensometer WE3.

The rate of swelling of between 6 to 14  $\mu\text{m}/\text{m}/\text{year}$  from WE (vertical) extensometers was higher than the average 4  $\mu\text{m}/\text{m}/\text{year}$  that is evaluated from the precision levelling. Extensometers VEH (horizontal) show different rates of swelling in the concrete depending on whether the instrument is located within the mid-section of the sluiceway or close to the piers. For those instruments located close to the piers, the rate of swelling compares well with the range of between 2-4  $\mu\text{m}/\text{m}/\text{year}$  recorded from precision levelling. As expected, the rate of swelling is higher, averaging 10-17  $\mu\text{m}/\text{m}/\text{year}$  for those extensometers that are located in the axis of the floodgates where the stresses are lower within the middle axis of the sluice.

### 1.1.5. Research and studies

The Authority embarked on two advanced studies expected to further enhance the dam safety strategies for Kariba Dam from April 2024 in partnership with Tractebel Engineering.

#### 1.1.5.1. Three-dimensional Finite-Element Analysis (3D FEA) model

The Authority is working with Tractebel Engineering to develop a 3D FEA model for the long-term prediction of displacements and mechanical behaviour of the Dam under various loading conditions using the Displacement Analyzer (DIANA) commercial FEA software. The new model incorporated the Dam and foundation (complete with the contraction joints); reshaped Plunge Pool; Spillway, South Bank underground buttresses and main fault along the river as shown in Figure 12.



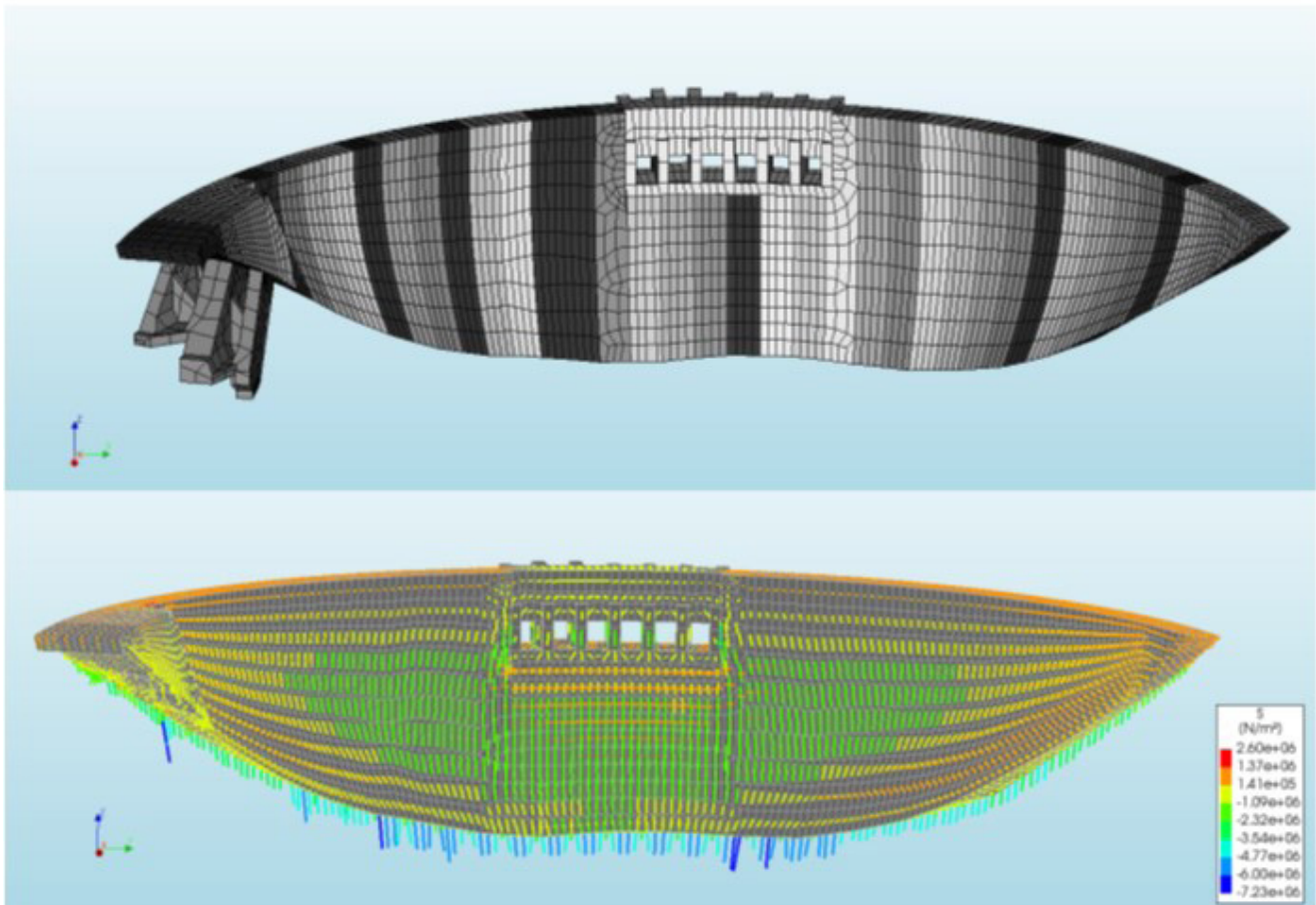


Figure 12: Dam and buttresses geometry (top) model and results of total stresses of the downstream of the Dam in the upstream-downstream direction (bottom)

The new model is more refined and contains high-level details. In addition, the mesh of the Dam model was improved. Some tests were carried out during the year using specific cases of self-weight and hydrostatic loading at different reservoir water levels to verify the responsiveness and accuracy of the model. The results shown in Fig. 12 (bottom) form part of the stresses under hydrostatic loading at full reservoir water level of 488.50m.

By the end of year, the model was undergoing calibration using the updated Hydrostatic-Season-Time (HST) model results of the CONDOR models of dam monitoring data covering the period 1989 to 2021. This process seeks to establish the best elastic modulus of each structure (dam, foundation and geological layers) before performing the final calibration of the model which is expected in 2025.

The Authority is currently working to predict the displacement thresholds in the year 2035 and in 2050. When completed, this model will be used together with results of the risk matrix currently under development to evaluate dam safety risks based on the Risk-Informed-Decision-Making (RIDM) methodology.

#### 1.1.5.2. Quantitative risk assessment of the dam failure modes

The Authority commenced quantitative evaluations of dam safety risks based on the RIDM method during the year under review. This enhancement of the qualitative assessments that were performed based on the potential failure modes analysis (PFMA) is expected to enhance the dam safety strategies and risk management to align with contemporary and internationally accepted standards for high-risk dams.

A major output of the RIDM evaluations is the development of quantitative dam safety risk matrices for Kariba Dam. The matrices will be developed for the pre- and post-Kariba Dam Rehabilitation Project (KDRP) period. As such, the risk matrix will help the Authority to quantitatively demonstrate whether the KDRP reduced the identified dam safety risks associated with the Plunge Pool Reshaping and Spillway Refurbishment Projects.

### 1.1.6. Operations and Maintenance

The Authority completed several planned O&M activities as summarised below:

- Increasing the height of the retaining wall protection for the hairpin bend along the international road on the South Bank.
- Maintenance of the mechanical and electrical components of floodgates under dryrun conditions, without full operation. This included the servicing of brakes, electric motors, Programmable Logic Controllers (PLCs), drums, cables and caterpillar rollers of the floodgates.
- The rehabilitation and installations of new lighting circuitries in the dam galleries and South Bank adits and shafts.
- General cleaning of all dam galleries, drainages, shafts, adits and surface repair of the South Bank slope by stone pitching.
- The fabrication, installation and painting of safety handrails and ladders between galleries and along the plinths.

#### 1.1.6.1. Lighting Installations

The Authority carried out various works to address occupational health and safety concerns identified during routine and monthly inspections. In this regard, attention was directed to reducing distances between light fittings in the adits and dam galleries. Fig. 13 shows the work done to reduce the spans and improve lighting in adit A (left) and gallery A (right). These phased works will continue in 2025 to improve lighting in adits, shafts and dam galleries.



Figure 13: Extension of lighting in Adit A (left) and reduced spans in gallery A (right)



Figure 14 below shows part of work done to replace ladders in the South Bank adit at P4, installation of safety handrails along the dam plinths and the replacement of ladder landings and fabrication of protection system at pendulum PS3.



Figure 14: Installation of ladders (left), handrails (centre) and protecting instruments (right).

#### 1.1.6.2. Floodgates

The servicing and testing of floodgates under full load remained constrained during the year because of the Plunge Pool Reshaping and Spillway Refurbishment work under the KDRP. However, since October 2023, on account of the significant progress that had been achieved under the Project, four (4) floodgates were operated in the year. Firstly, floodgate number 3 was successfully closed in June followed by the opening of floodgate number 1 in July. The closing of floodgate number 5 in September and opening of floodgate number 4 in October 2024 also followed. Further, the mechanical components of the main hoist ropes, shaft gears, and brake shoes of floodgate number 6 were serviced in June 2024.

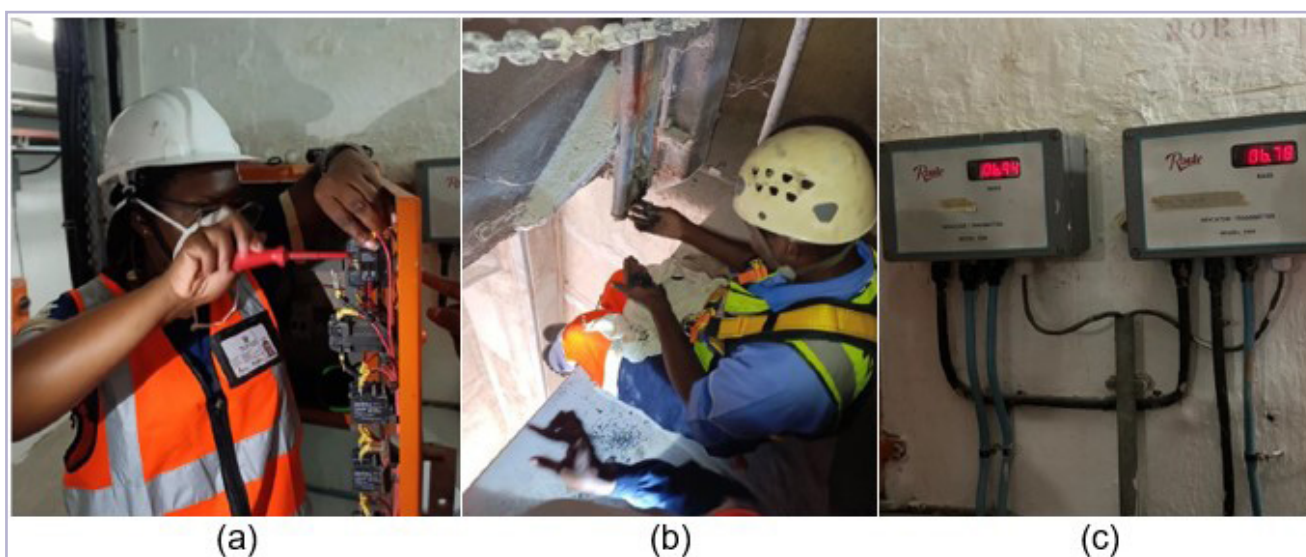


Figure 15: (a) Replacement of faulty indicator lights on the main and local panels, (b) the repair of damaged bottom seal, and (c) load cell readings during the lowering of the floodgate.

### 1.1.6.3. Slope Protection Works at the Hairpin

The Authority continued to undertake phased repairs and protection works of the gulley at the hairpin bend along the international road on the south bank as shown in Fig. 16. The repairs seek to address safety concern by protecting the slope from further deterioration and sliding which could harm road users.



Figure 16: Phased construction and repair of the gulley at the hairpin bend.

### 1.1.6.4. Installation of Huggenberger reading tables

The Authority decommissioned and replaced several TELEMAT with Huggenberger type pendulums at eleven (11) of the thirty-one (31) reading tables in accordance with the Five-Yearly inspection recommendations. The reading tables were replaced at the following stations:

- a) Three (3) reading tables at PS1-2; PS1-3 and PS1-4.
- b) Four (4) reading tables at PS2-2; PS2-3; PS2-4, and PS2-5.
- c) Reading table P6A.
- d) Reading tables P9A and P9B; and
- e) Reading tables P11A and P11B.

The Authority is working to automate twelve (12) additional instruments to improve the quality of data collected from the South Bank pendulums at PS1; PS2; P4; P5 and P6 that have access limitations arising from their locations.

## 1.1.7. Emergency Preparedness and Public Safety

Emergency Preparedness is coordinated by the respective Agencies of the Disaster Management and Mitigation Unit (DMMU) in Zambia and the Department of Civil Protection (CPU) in Zimbabwe. However, in line with international practices in dam management, the Authority recognizes its key function of data collection and information dissemination in respect of public and environmental



safety of communities that live downstream of large dams. In this regard, the Authority conducted several stakeholder engagements in 2024 as detailed below:

- a) In February, two stakeholder engagement missions were undertaken targeting communities that live along the Zambezi River in the Lusitu, Chirundu and ZAMBEEF farms that abstract water from the Zambezi River downstream of Chirundu Town.
- b) A dam safety related stakeholder mission for the Emergency Preparedness Plan (EPP) awareness was carried out from 2<sup>nd</sup> to 8<sup>th</sup> June 2024. The objective of the mission was two-fold. Firstly, the engagements sought to learn from the downstream communities in respect of their experiences from past spillages at Kariba Dam. Secondly, the Authority sought to sensitize the communities and their respective District Disaster Management and Mitigation Committees (DDMMC) regarding the management of emergencies arising from high river flows and in the unlikely event of uncontrolled release of water from the Dam.
- c) Six communities and representatives from the DDMMC were visited in three districts of Luangwa, Kafue and Siavonga. The communities visited were Chidada and Amoro in Luangwa District; Kabwadu and Mugurameno in Kafue District and the Manyepa and Namoomba communities in Siavonga District. Courtesy visits and meetings were also held with the respective Chiefs and District Commissioners in the respective districts.
- d) The last mission was held from 16<sup>th</sup> to 28<sup>th</sup> September 2024 with the Environmental Management Regulators from Zambia and Zimbabwe. The mission aimed at identifying key sensitivities and activities with the potential to contribute to or cause significant impacts to environmental and social receptors and resources and to evaluate siting, layout and technology alternatives for the proposed project. Various meetings and consultations were held to gather information that would enable an informed selection of sites for the physical components of the Early Warning System (EWS) like sirens, towers and solar panels. In this respect, stakeholder consultations were conducted with communities, the Meteorological Department, Zambia Environmental Management Authority, Environmental Management Agency (Zimbabwe), Department of National Parks and Wildlife (DNPW) (Zambia), and Zimbabwe National Parks (ZimParks). The mission covered Chirundu District and meetings were held in the Namoomba; Chalokwa; Kabwadu and Mugurameno communities. Consultations were also held with riverside lodges in Mana Pools and the Amoro, Chidada and Kavalamanja communities in Luangwa.

The stakeholder engagements formed part of the risk management strategies to minimise harm from flooding in the event of high-water releases and the unlikely event of Dam failure.

## 1.2 Water Resources and Environmental Management

The Water Resources and Environmental Management Department's key result area focuses on collecting, accumulating and processing the Zambezi River's hydrological and environmental data for the enhanced performance of its functions and for any other purpose beneficial to the Contracting States. In addition, it regulates the water level in the Kariba Reservoir and will continue to perform this function upon completion of construction of any other reservoirs that will be owned by the Authority.

### 1.2.1. Water Allocation for Power Generation at Kariba

In line with its statutory function of water allocation to ensure sustainable power generation operations at the Kariba Reservoir, the Authority allocated Sixteen Billion Cubic Meters (16 BCM) of water in September 2023 shared equally between ZESCO Limited and the Zimbabwe Power Company (ZPC). The allocation was informed by the outcomes of the 27<sup>th</sup> and 28<sup>th</sup> Southern Africa Regional Climate Outlook Forum (SARCOF-27 and 28) Meetings that were held in August 2023 and January 2024.

These outcomes were further confirmed by the downscaled rainfall forecasts from the respective Meteorological Agencies of Zambia and Zimbabwe, projecting Normal to Above Normal rainfall conditions in the 2023/24 rainfall season for much of the Southern African Development Community (SADC) Region – including the Kariba Catchment.

The actual performance of the 2023/24 rainfall season for the Kariba Catchment is shown in Figure 17 below:

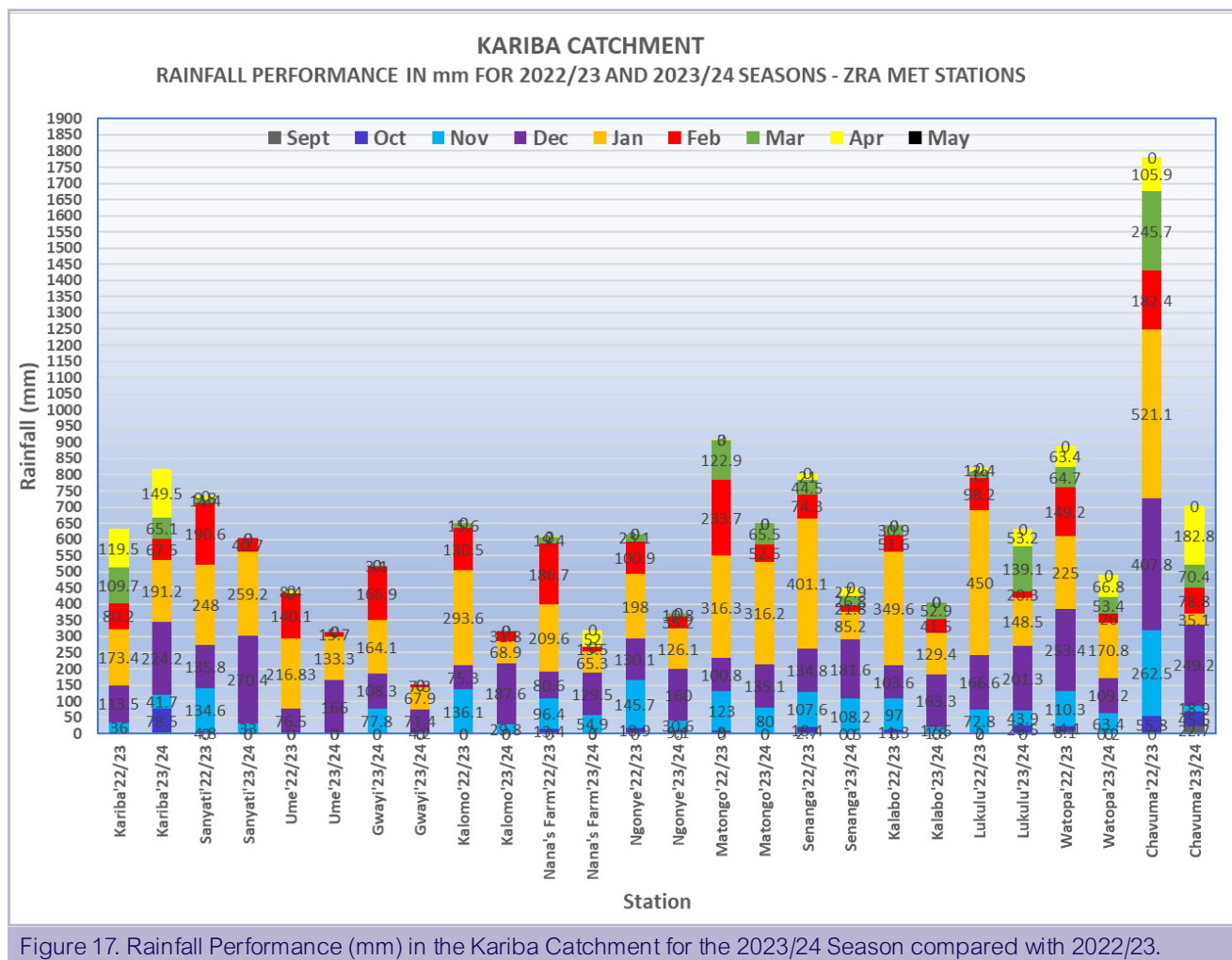


Figure 17. Rainfall Performance (mm) in the Kariba Catchment for the 2023/24 Season compared with 2022/23.

Accordingly, during the 2024 first quarter hydrological review, the Authority maintained the water allocation at 16 BCM to ensure continued availability of water for power generation at Kariba Dam under the prevailing drought conditions of the 2023/24 rainy season.

Whereas ZPC operated within the allowable 5% utilisation above allocation, ZESCO exceeded its allocation by 16%. The end of year closing Lake level on 31<sup>st</sup> December 2024 was 475.77m with 1.93% live storage. In 2023, the closing level was 477.23m with 12% live storage.

#### 1.2.1.1. Regional Rainfall Outlook for the 2024/25 Rainfall Season

The rainfall forecast for the 2024/25 rainfall season for the SADC Region which is inclusive of the Kariba Catchment was provided by SARCOF-29 in August 2024 and was subsequently downscaled by the Meteorological Agencies of Zambia and Zimbabwe in September 2024. The forecasts indicated a high likelihood of the Region receiving Normal to Above Normal rainfall in the 2024/25 rainfall season.

However, the forecasts also indicated a high likelihood of receiving Below Normal rainfall over much of the Kariba Lower Catchment in northern Zimbabwe and the north-western parts of the Zambezi



River Upper Catchment located in north-eastern Angola during the period October 2024 to January 2025. It was therefore deduced that this could negatively impact the volume of inflows into Lake Kariba as the 2024/2025 rainfall season progressed. The SARCOF-29 Seasonal Rainfall Forecast Maps are shown in Figure 18.

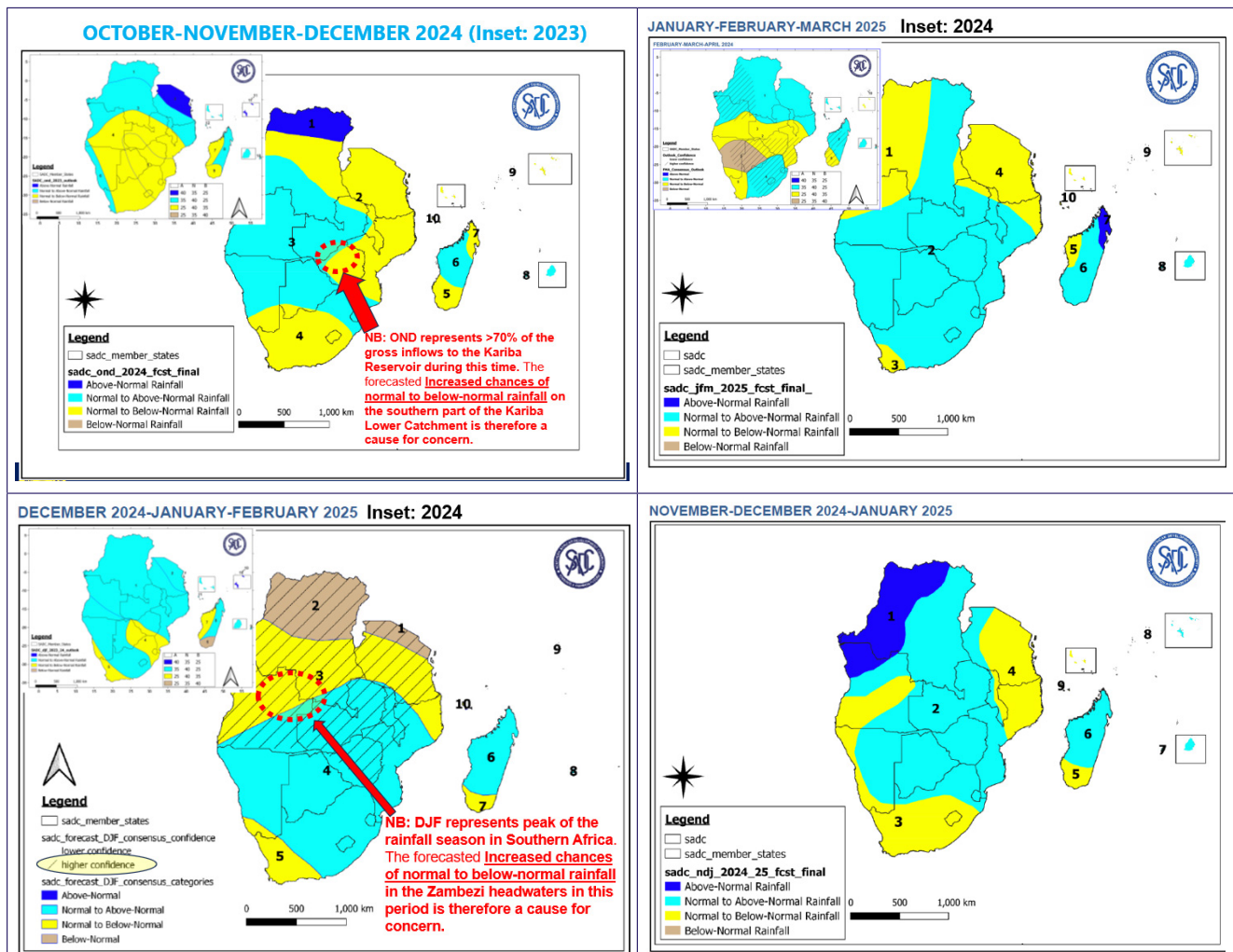


Figure 18: SARCOF-29 Seasonal Rainfall Forecast Maps

The Authority incorporated the 2024/25 rainfall forecasts for the Kariba Catchment into the hydrological simulation model for allocating water for power generation operations at Kariba Dam for the year 2025. The hydrological simulation results were presented to and discussed with the Power Utilities during the September 2024 tripartite Joint Technical Committee (JTC) meetings, with consensus being reached regarding the water to be allocated for the year 2025.

Accordingly, the Authority allocated a total of Twenty-Seven Billion Cubic Meters (27 BCM) of water for power generation operations at Kariba Dam for the year 2025 shared equally between the Power Utilities.

### 1.2.1.2. Zambezi River Flows

Flows in the mainstream Zambezi River during the 2023/24 hydrological year spanning from October 2023 to September 2024 were below average as shown graphically in Figure 19) at the two critical stations, namely, Chavuma (the station where the Zambezi River flows from Angola are gauged) and Victoria Falls as gauged at Nana's Farm.

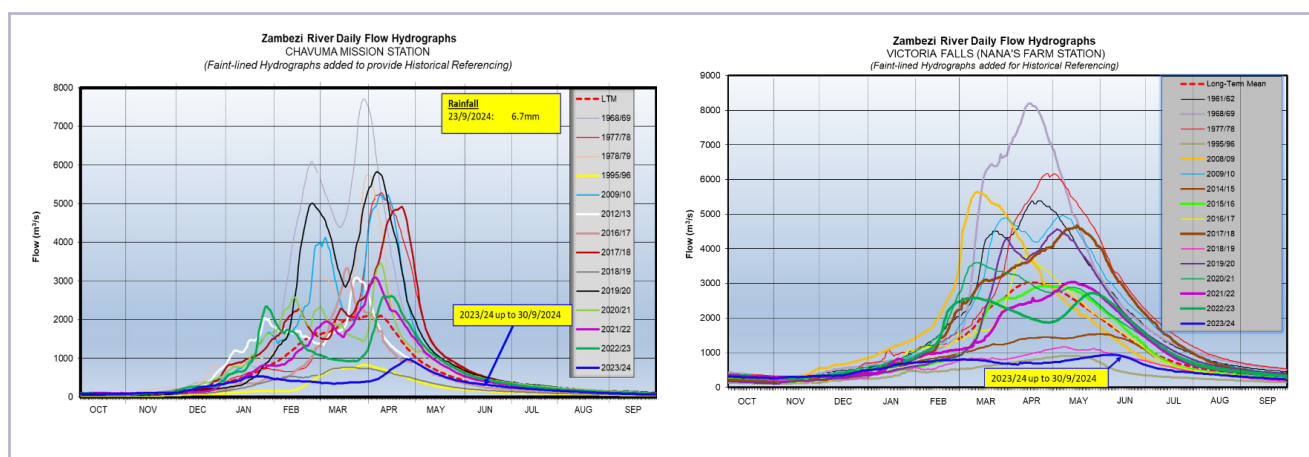


Figure 19. Zambezi River flow hydrographs at Chavuma (left) and Victoria Falls (Nana's Farm station).

The hydrographs show that for the 2023/24 season (deep blue line), the Zambezi River flows remained below 1,000m<sup>3</sup>/s throughout the period. Under normal rainfall conditions, the river peak flows would exceed 3,000m<sup>3</sup>/s. The 2023/24 hydrological year thus posted as one of the lowest on record, due to the extreme drought induced by the El Nino phenomenon experienced during the year.

Table 1 below provides a comparative analysis of flows at the Nana's Farm / Victoria Falls gauging station, the key station for monitoring flows into Lake Kariba for the years 2023 and 2024 compared to the long-term average.

**Table 1. Zambezi River Flow Comparisons at Victoria Falls (Nana's Farm) Hydrometric Station**

Parameter	Year		Long-Term Mean (LTM)	% Departure of 2024 from:	
	2024	2023		2023	LTM
Flow on January 1 (m <sup>3</sup> /s)	492	502	521	-2%	-6%
Flow on December 31 (m <sup>3</sup> /s)	308	490	514	-37%	-40%
Annual Mean Flow (m <sup>3</sup> /s)	521	1,173	1,109	-56%	-53%
Peak Flow Recorded (m <sup>3</sup> /s)	938	2,718	3,027	-65%	-69%
Date Peak Recorded	7/6/2024	27/5/2023	16/4		
Minimum Flow Recorded (m <sup>3</sup> /s)	162	253	251	-36%	-35%
Date Minimum Recorded	02/11/2024	31/10/2023	31/10		
Cumulative Annual Discharge at this Station for the Year (BCM)	16.49	36.88	34.98	-55%	-53%
*BCM = Billion Cubic Meters					

Table 1 above shows that inflows into Lake Kariba from the Upper Zambezi Catchment as monitored at Victoria Falls (16.49BCM) were 53% lower than the long-term average of 34.98 BCM. This situation demonstrates the hydrological impact of the extreme drought experienced during the 2023/24 rainfall season highlighted above. In terms of the Kariba record of Gross Inflows, the year 2024 recorded the third lowest inflows after those of 2019 (with 18.84BCM) and 1995 (with 18.34BCM).



### 1.2.2. Water Level Variation in Lake Kariba

The Lake level performance in 2024 was disconcerting, dropping from 477.88m on 24<sup>th</sup> January 2024, with usable storage of 10.73 BCM (16.56% of live/usable storage capacity) to 475.77m (1.93% live storage) – which was 27cm above the Minimum Operating Level (MOL) on 31<sup>st</sup> December 2024.

In comparison, the Lake closed the previous year at a higher level of 477.23m on 31<sup>st</sup> December 2023, with 12% of live/usable storage capacity.

Figure 20 below shows a hydrographic overlay of lake level variations for various past years in comparison with 2023/24.

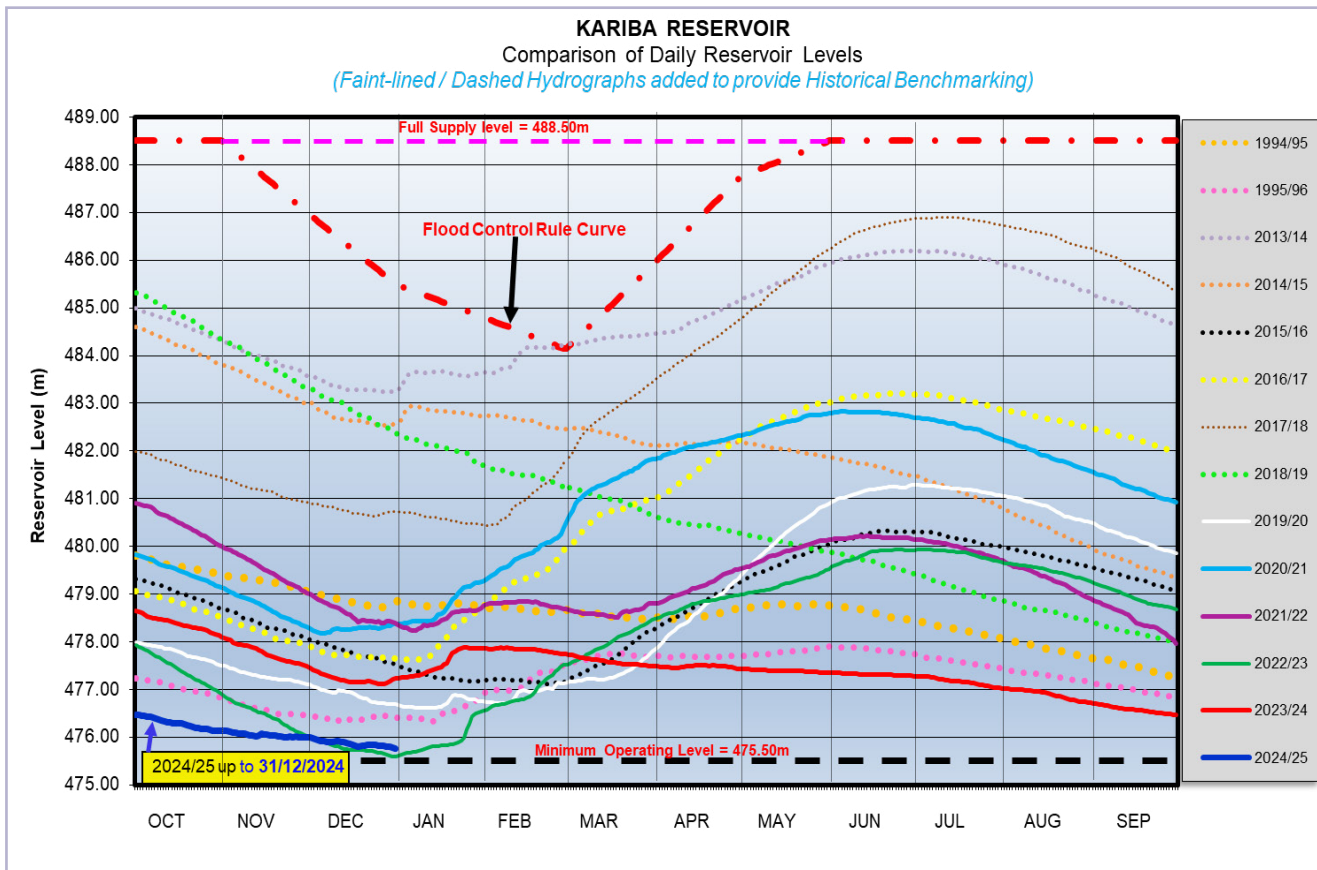


Figure 20. Lake Levels - Hydrographic Overlay of selected Years in comparison with 2024.

#### 1.2.2.1. Operation of Spillways

The Spillway gates at Kariba remained closed as the water levels remained below the Flood Control Rule Curve (see Figures 20 above), therefore there was no need for spilling.

### 1.2.3. Water Balance Computations for the Kariba Reservoir

The total gross inflow into Lake Kariba during the year 2024 was 20.17 BCM, a considerable decrease of 56% from the year 2023 record (average year). The Lower Catchment contribution accounted for 18% inflow volume into Lake Kariba, compared to 20% recorded during the year 2023, while the rest came from the Zambezi Upper Catchment (as monitored at Victoria Falls / Nana's Farm Hydrometric Station). The 7.76 BCM carry-over from 2023 resulted in a total live storage of 27.93 BCM in 2024 compared to 46.68 BCM and 57.08 BCM registered in 2023 and 2022, respectively.

On the other hand, the total outflow from the Lake was 26.68 BCM, composed of 17.73 BCM turbine discharge (for power generation) and 8.95 BCM lost to evaporation. The net effect on the Reservoir was a storage loss of 6.51 BCM which resulted in the reservoir closing with a live storage of about 1.25 BCM or 1.93% of usable storage.

Table 2 below shows the annual water balance computations for Lake Kariba for 2024 compared to the two preceding years. The same information is further presented graphically in Figure 21, while Figure 22 presents a schematic representation of the monthly water balance dynamics for 2024. Historical water balance time series (monthly) data is also presented graphically in Figure 23.

KARIBA RESERVOIR WATER BALANCE END-OF-PERIOD / REPORTING MONTH: DECEMBER 2024			
Parameter	2024	2023	2022
1) Opening Usable Storage - Billion Cubic Meters (BCM)	7.76	0.50	13.06
2) GROSS INFLOWS FOR THE YEAR TO DATE (BCM)	2.1) From the Kariba Upper Catchment	16.49	36.88
	2.2) From the Kariba Lower Catchment	3.68	9.30
	Sub-total (BCM)	20.17	46.18
Total Inflows Year-to-Date (BCM)		27.93	46.68
3) OUTFLOWS FOR THE YEAR TO DATE (BCM)	3.1) Turbine Discharge	17.73	29.88
	3.2) Spillway Discharge	0.00	0.00
	3.3) Evaporation	8.95	9.04
	Sub-Total (BCM)	26.68	38.92
4) Carry-over Usable Storage at End of Reporting Month		1.25	7.75
Total Outflows Year-to-Date (BCM)		27.93	46.68

Table 2. Comparative Annual Water Balance for Lake Kariba (January - December)

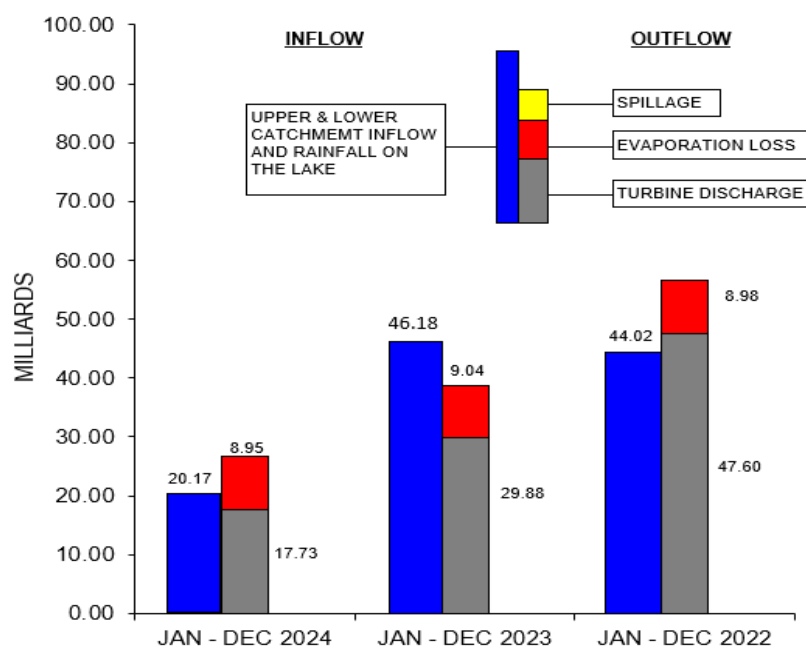


Figure 21: Lake Kariba Water Balance Graphical Comparison over Three Recent Past Years



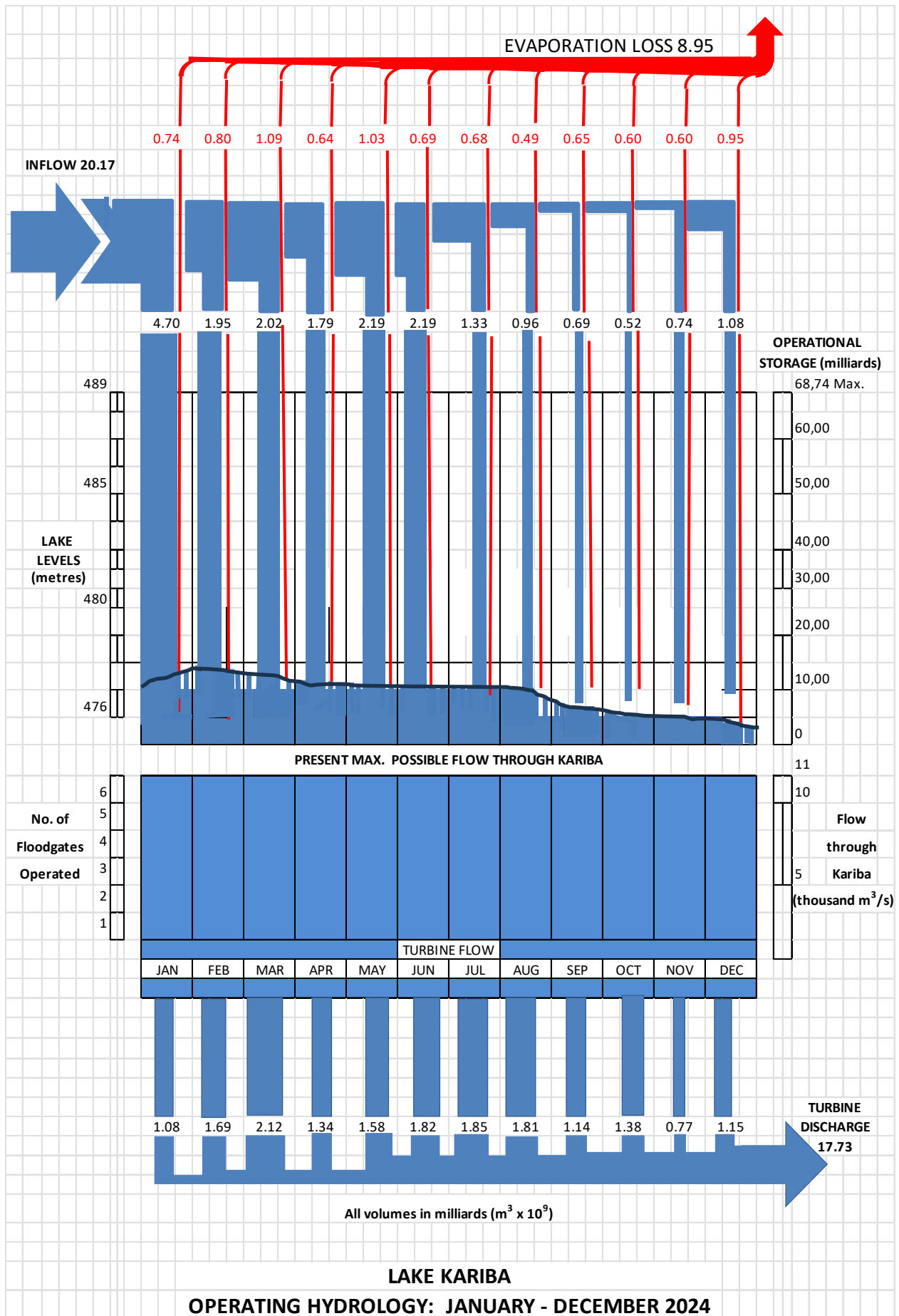


Figure 22: Schematic Representation of the Kariba Water Balance for 2024

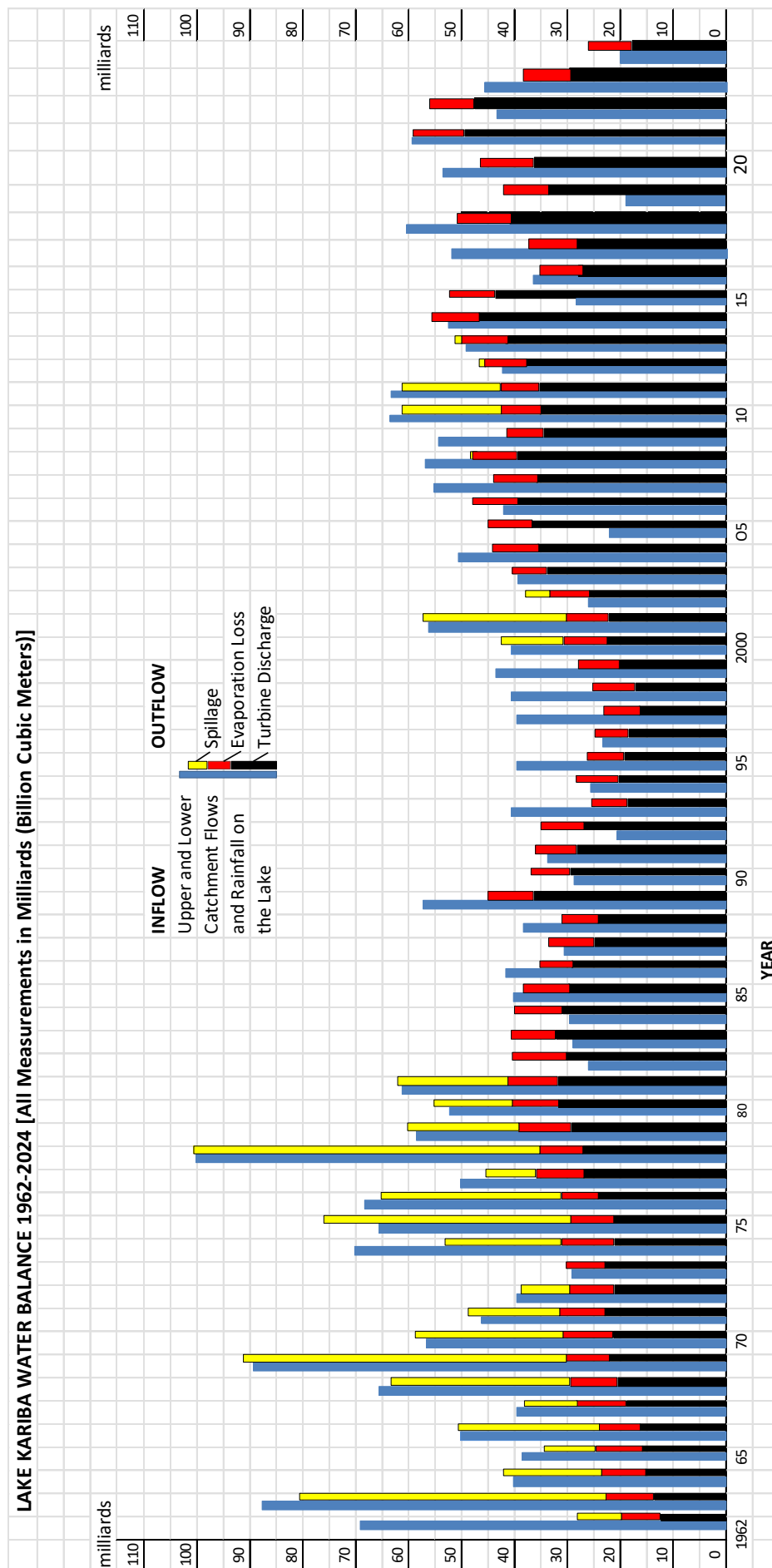


Figure 23: Kariba Water Balance 1962 - 2024 (All Volumes in Billiards)



### 1.2.3.1. Water Usage for Energy Generation at Kariba

Water usage for power generation at Kariba is monitored and reported daily through the Daily Hydrological Bulletin that is circulated internally as well as to the two Power Utilities.

Based on the rainfall outlook as predicted in August and September 2023 by the 27<sup>th</sup> Southern Africa Regional Climate Outlook Forum (SARCOF-27) and the downscaled national forecasts for Zambia and Zimbabwe, respectively, a total of 16 billion Cubic Meters (BCM) of water for power generation at Kariba was allocated for the calendar year 2024, shared equally between the two Power Utilities. This water allocation was to provide for a combined annual average generation output of 428MW or 214MW for each Power Utility.

With this level of water allocation under below normal rainfall conditions, the reservoir was projected to close the year 2024 at 476.46m with approximately 6.6% of usable storage to support power generation operations at Kariba going into the first quarter of the year 2025.

As of 31<sup>st</sup> December 2024, the Power Utilities had cumulatively utilized 17.723 BCM, which translated to 121.54% of their combined 2024 water allocation. The following is the breakdown of the water utilization by each Power Utility during 2024:

- The ZESCO Limited owned Kariba North Bank Power Station utilized 9.309 BCM, which represents 116.37% of their 8 BCM water allocation for the year 2024.
- The ZPC owned Kariba South Bank Power Station utilized 8,398.71 BCM, which represents 104.98% of the 8 BCM water allocation for the year 2024.

The water utilization statistics by the two Power Utilities at Kariba are further elaborated in Table 3 below:

Month	Kariba North			Kariba South			Cumulative Combined Utilisation Plan Kariba Complex (MCM)	Cumulative Water Used at Kariba Complex (MCM)	% of Utilisation Plan
	Annual Allocation: 8,000 MCM			Annual Allocation: 8,000 MCM					
	Utilisation Plan (MCM)	Actual Used (MCM)	% of Updated Utilisation Plan	Utilisation Plan (MCM)	Actual Used (MCM)	% of Updated Utilisation Plan			
JAN	540.70	540.70	100.00%	540.80	540.80	100.00%	1,081.50	1,081.50	100.00%
FEB	1,050.99	1,050.99	100.00%	641.14	641.14	100.00%	2,773.63	2,773.63	100.00%
MAR	1,403.91	1,403.91	100.00%	719.28	719.28	100.00%	4,896.82	4,896.82	100.00%
APR	847.54	847.54	100.00%	490.53	490.53	100.00%	6,234.89	6,234.89	100.00%
MAY	775.20	775.20	100.00%	802.43	802.43	100.00%	7,812.52	7,812.52	100.00%
JUN	931.17	931.17	100.00%	897.41	897.41	100.00%	9,641.10	9,641.10	100.00%
JUL	952.39	952.39	100.00%	894.36	894.36	100.00%	11,487.85	11,487.85	100.00%
AUG	1,123.78	1,123.78	100.00%	683.13	683.13	100.00%	13,294.76	13,294.76	100.00%
SEP	594.87	594.87	100.00%	534.35	518.87	97.10%	14,423.99	14,408.51	99.89%
OCT	344.96	344.96	100.00%	1,039.91	1,039.91	100.00%	15,808.86	15,793.38	99.90%
NOV	347.83	347.83	100.00%	417.48	417.48	100.00%	16,574.17	16,558.69	99.91%
DEC	342.44	395.86	115.60%	739.18	753.37	101.92%	17,655.78	17,707.92	100.30%
Total:	9,255.78	9,309.21	100.58%	8,400.00	8,398.71	99.98%	17,655.78	17,707.92	100.30%
Exceedance against Allocation to Date		1,309.21	16.37%		398.71	4.98%		1,707.92	21.35%

Table 3: Summary of Water Used for Power Generation at Kariba Complex in Million Cubic Meters (MCM) January – December 2024

### 1.2.4. Joint Operations Technical Committee (JOTC)

To collaboratively manage the Zambezi Watercourse, the Authority and other dam and water resource management institutions operating in the Zambezi River Basin met during the 34<sup>th</sup> Joint Operations Technical Committee and 23<sup>rd</sup> Executive Committee Meetings in November 2024. During the meetings, optimized operations of the Zambezi and Kafue hydropower cascades for the economic benefits to Zambia, Zimbabwe and Mozambique were deliberated upon.

Timely information exchange to inform decision making for the respective dam and water resources management institutions was highlighted as being key during the deliberations.

## 1.3 Environmental Monitoring and Management

During the period under review, the Authority implemented scheduled sampling programmes in line with its Environmental Monitoring Programme (EMP). The results from the sampled stations indicated that the Lake continued to be in a non-threatening condition with respect to the parameters which were consistent with the Authority's Water Quality Guidelines and the environmental regulatory limits. On the other hand, water hyacinth remained under control largely due to the biological methods used to control the same.

### 1.3.1. Water Quality Monitoring

Figure 24 below is a map of the Zambezi catchment showing stations that are normally sampled and their respective frequency of sampling.

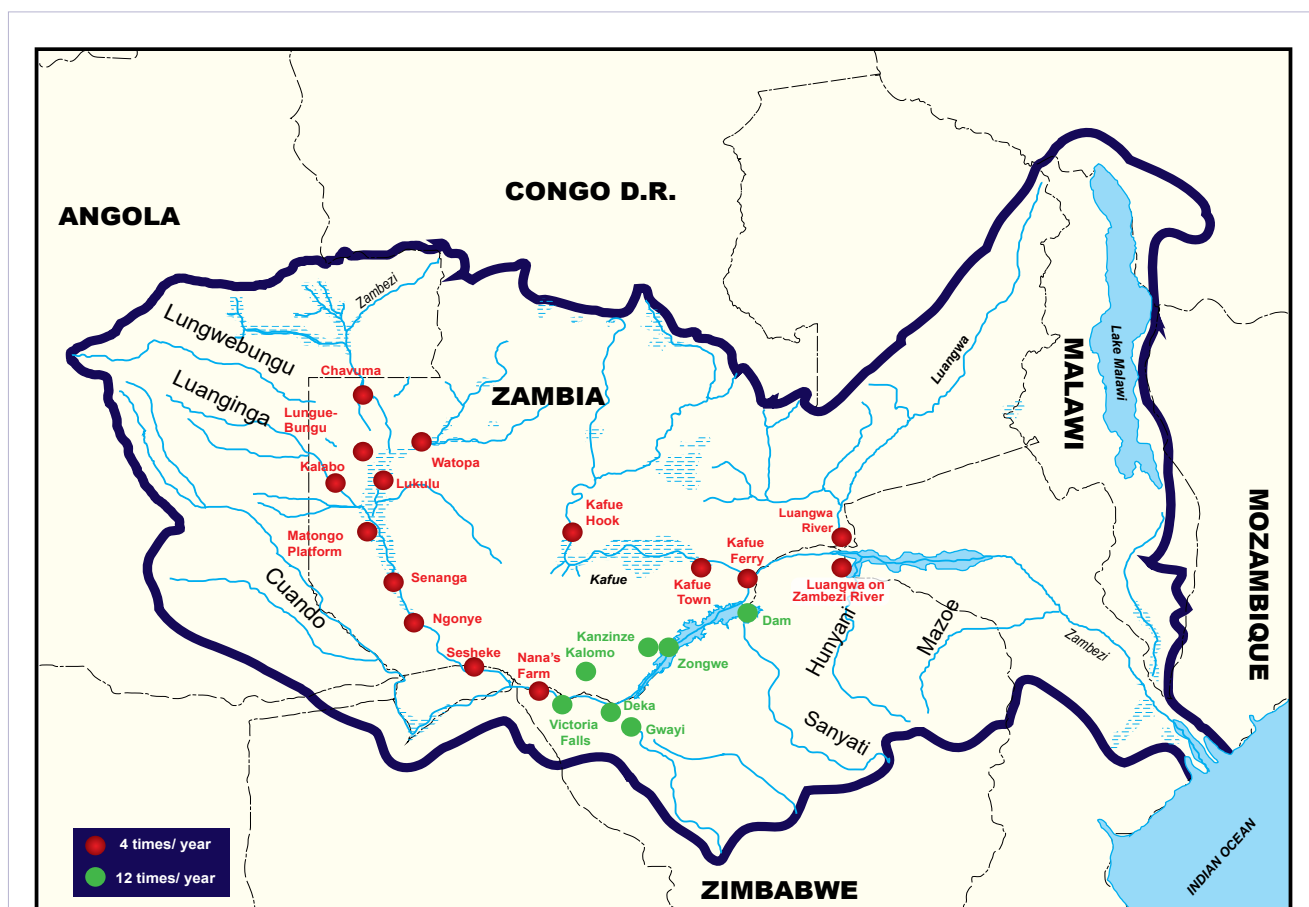


Figure 24: Map of the Zambezi Catchment showing stations that are normally sampled and their respective frequency of sampling.

The following graphs illustrate the results of selected water quality parameters in keeping with the Authority's Water Quality Guidelines:

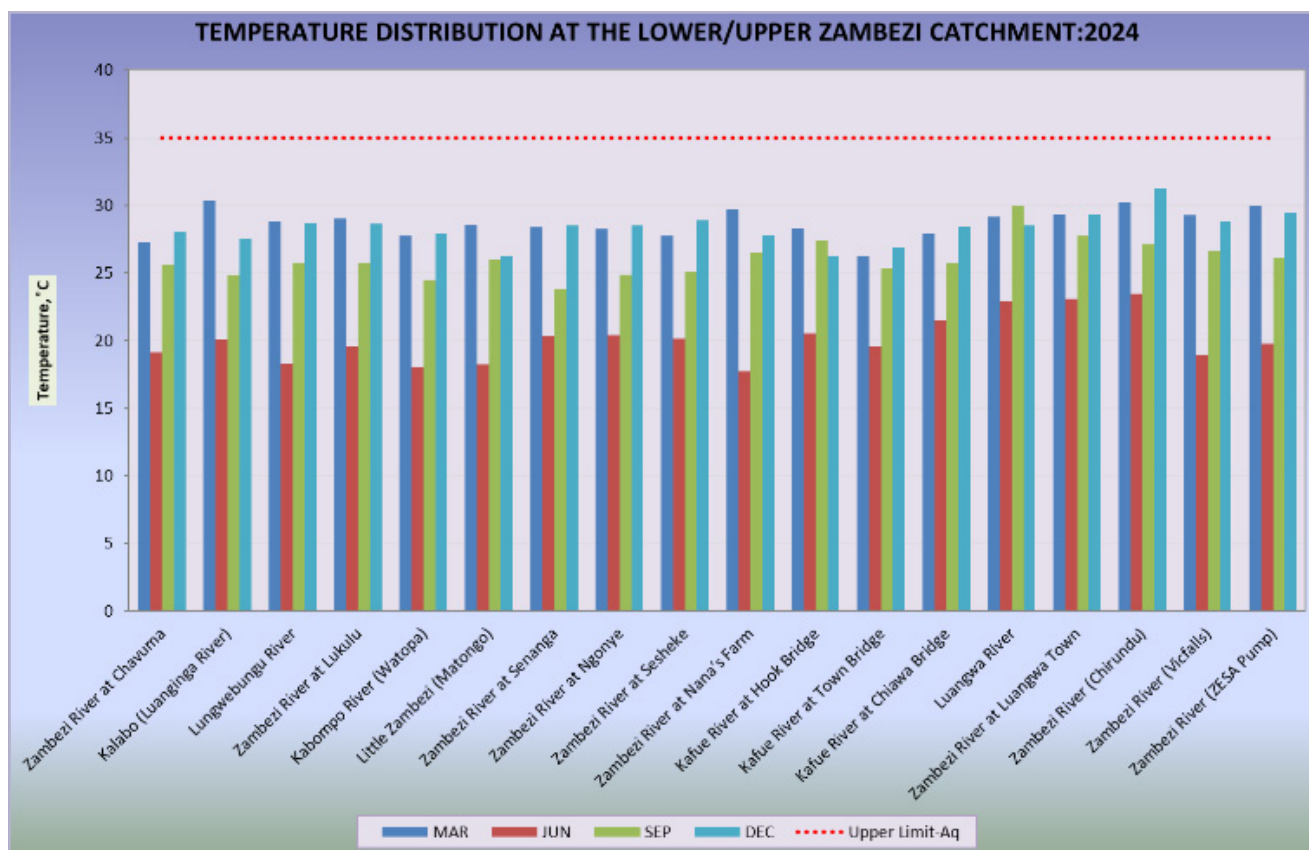


Figure 25: Temperature was observed to be within the standard of 35°C

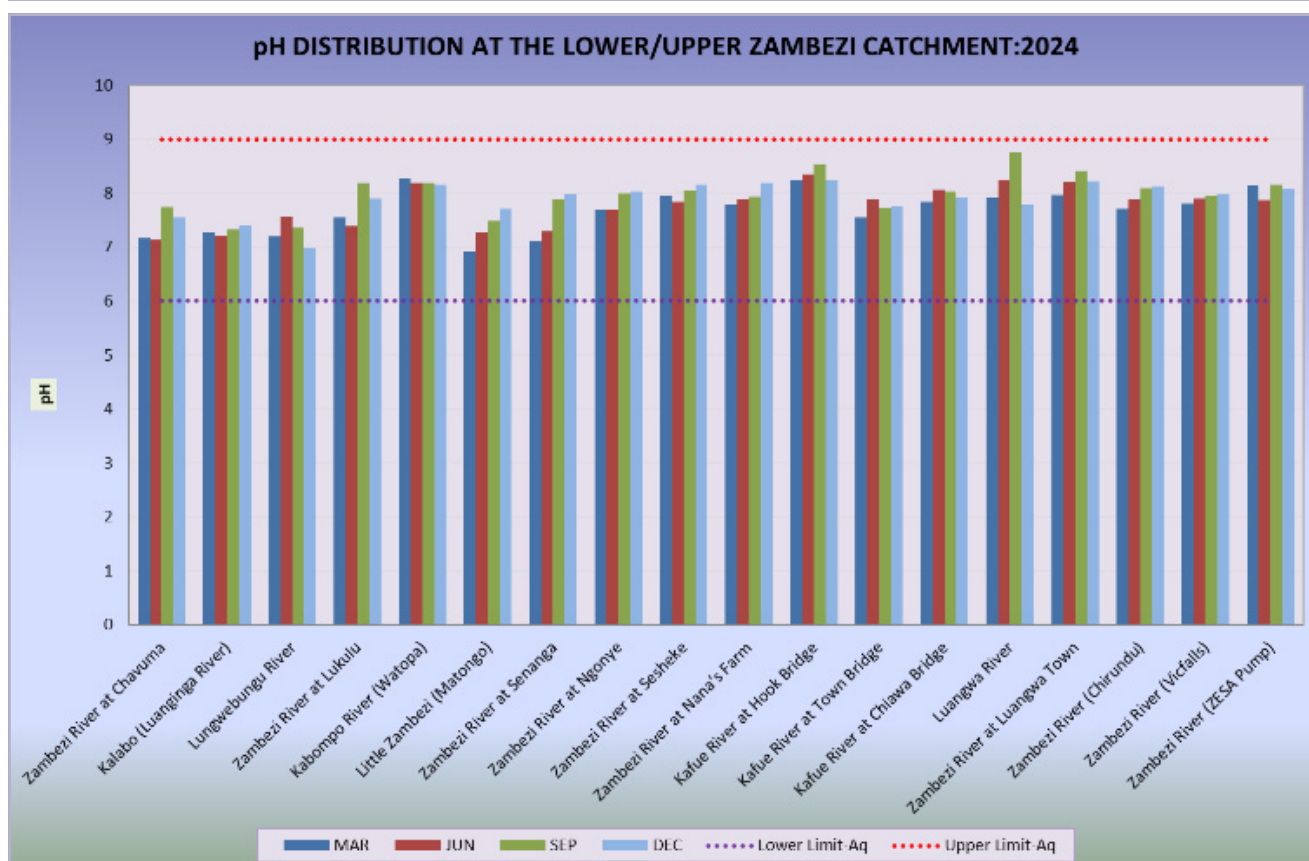


Figure 26: The pH was observed to be within the standard of between 6 and 9



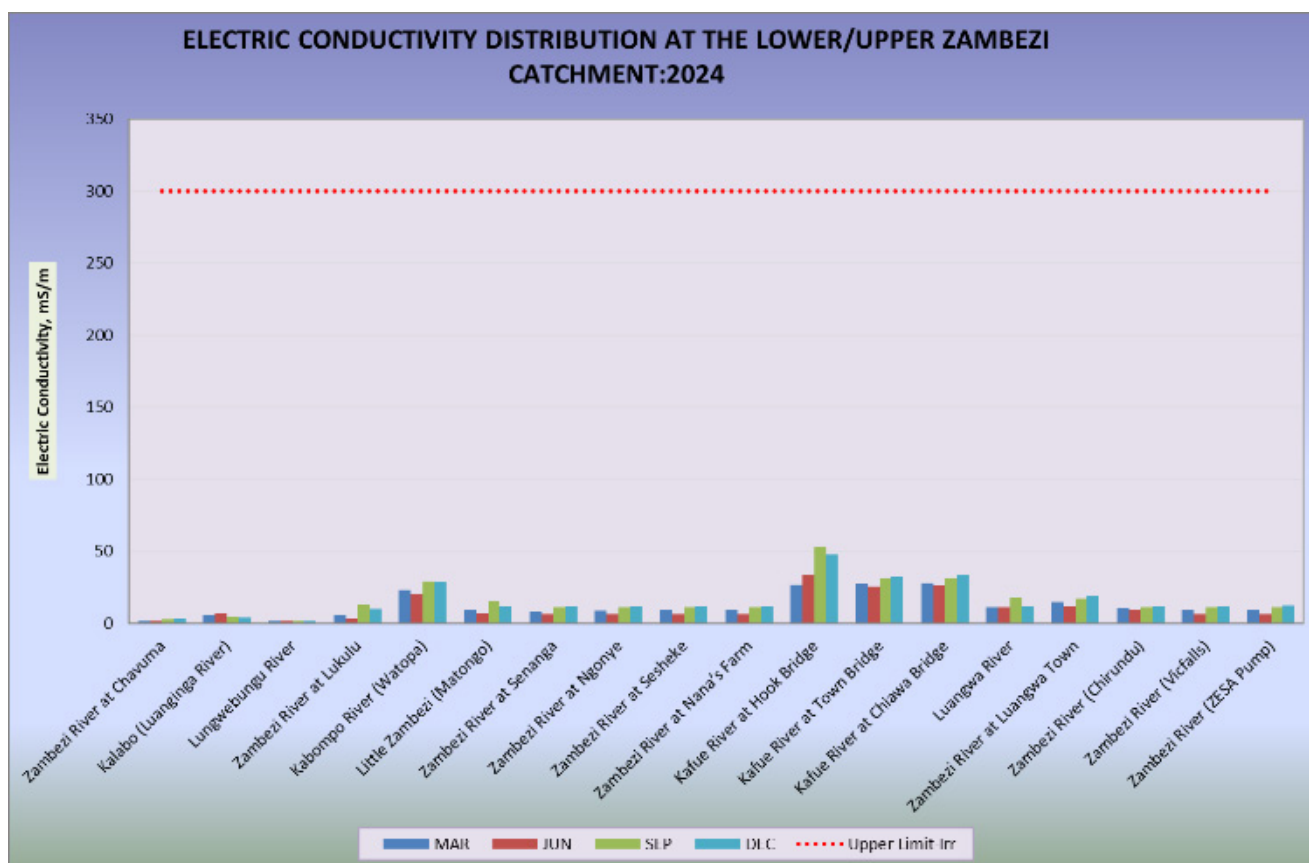


Figure 27: Conductivity was observed to be within the standard of 100mS/m

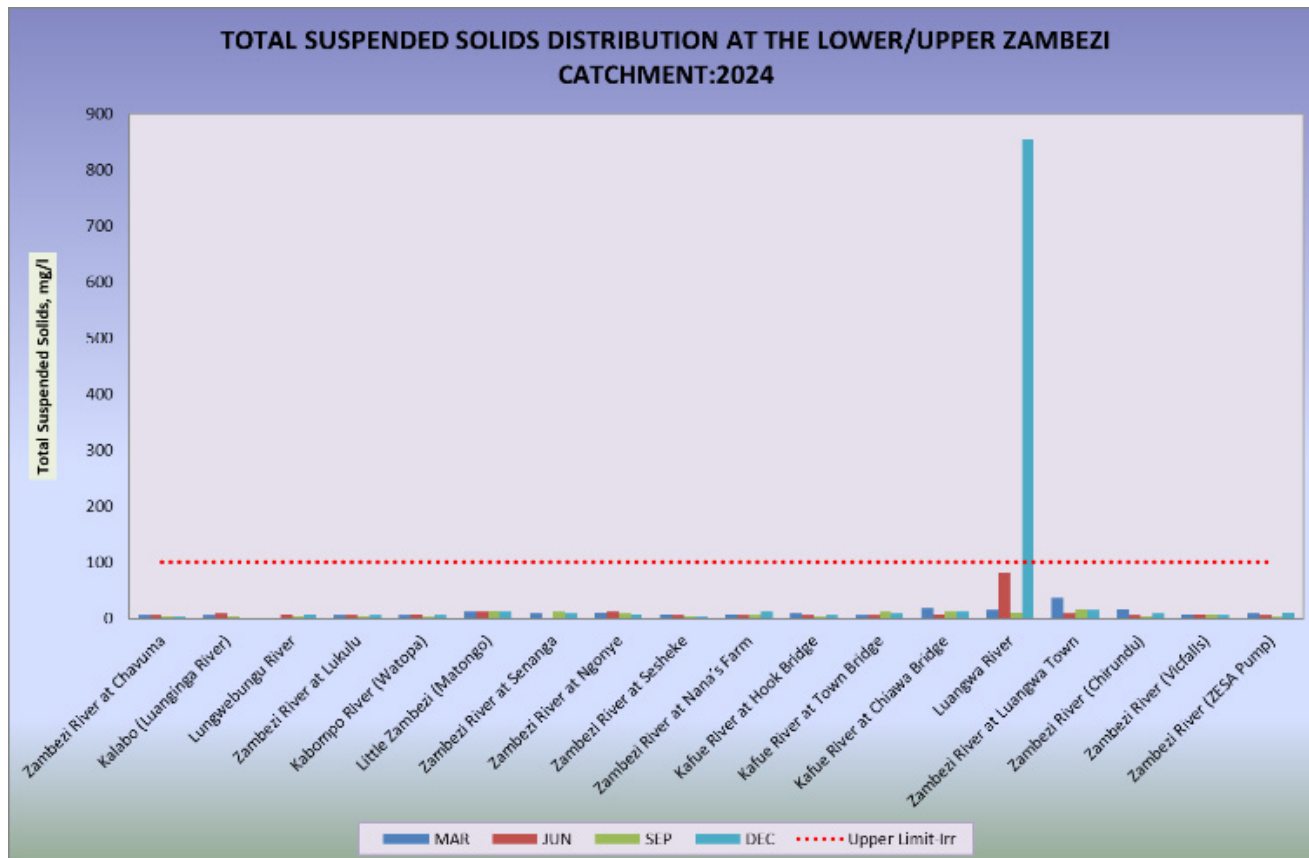


Figure 28: The Total Suspended Solids (TSS) were observed to be within the standard of 100mg/l for all stations except for the Luangwa River in December 2024. This was due to erosion and sediment transportation that normally occurs during the rainy season.

### 1.3.2. Water Hyacinth (*Eichhornia crassipes*) Monitoring

Water Hyacinth monitoring on Lake Kariba was conducted during each quarter of 2024. The weed mats were observed at Gatche Gatche in the first, second and third quarters of 2024. Localised weed mats along the water shores were also observed at University Lake Kariba Research Station (ULKRS); Crocodile Farm; Andora Harbour; Nyadza and Charara sampling stations. However, due to low water levels most of the weeds during the fourth quarter were stranded along the shoreline of the lake as shown in Figure 29.



Figure 29: Weeds Stranded along the lakeshores.

Traces of weed transported by wind current on the lake waters were observed at Kariba North and South bank power station intake areas and were removed by physical means.

Morphological monitoring of Water Hyacinth was undertaken through physical observations by assessing the characteristic physical damage on the leaves caused by the weevils of *Neochetina bruchi* species. The biological activities were observed signifying the presence of the bio-control agents.



Figure 30: Biological Damage on the Weed Foliage

### 1.3.3. Environmental and Social Impact Assessment (ESIA) and Environmental Project Brief/Prospectus (EPB)

The Authority reviewed and provided comments in respect of Six Environmental Impact Statements (EIS) and six (6) Environmental Project Briefs/Environmental Prospectus received from the Zambia Environmental Management Agency (ZEMA) and the Environmental Management Agency (EMA) of Zimbabwe respectively as input into the respective ESIA review processes conducted by the two Environmental Regulatory Agencies in the two Contracting States.

The documents reviewed included the following:

- a) EPB for the proposed exploration on mine license no. 22075-HQ-LEL in Kafue/Chirundu district of Lusaka/Southern Provinces by Chirundu Joint Venture (CJV) Zambia Limited.
- b) EPB for the proposed development of a Bush Camp in the Chiawa Game Management Area of Kafue District by Goba Safaris Limited.
- c) EPB for the proposed construction of a Campsite in Lower Zambezi National Park by Mr. Hanif Mohamed Mitha.
- d) EPB for the proposed Granite and sand/gravel mining project on License no. 34625 in the Demetra area of Chirundu District by Munenga Mining Limited.
- e) Environmental Social Impact Assessment (ESIA) for the proposed construction of a 330kV Overhead powerline across the Zambezi River from Nangweshi in Sioma District to Namushekende in Mongu District via Mbata Island in Western Province by ZESCO Limited.
- f) Approved EPB for the construction of a Boat Jetty in the Mosi-Oa-Tunya National Park in Livingstone by African Horizon Limited.
- g) ESIA Prospectus for the proposed development of tourism facilities and law enforcement base on Tsetse Island of Lake Kariba in Zimbabwe by Ractec Consultancy (Pty) Ltd.
- h) EPB for proposed mining activities on License no. 29191-HQ-SEL in Makali area of Chief Simamba's Chieftdom in Siavonga District by Chung Chung Mining Zambia Limited.
- i) The Environmental Impact Assessment (EIA) Consultations for the Proposed Kariba Hotel and Conference Centre, Kariba by CMED.
- j) The Proposed Construction of a Bush Camp in the Lower Zambezi National Park (ZNP) in Luangwa District by Kuthengo Safaris Limited.
- k) The Environmental and Social Impact Statement (ESIS) for the Proposed Development of a Pepper Farm at Farm F/Kafue/1514580, in Chiawa Area of Kafue District in Lusaka Province by Catels Investments Limited; and
- l) The Environmental Impact Statement for the Proposed Construction and Operation of a 160mm Diameter HDPE Pipe (Pe 100) X 26.3km Water Pipeline from Katombora Correctional Pump Station to Witpen Game Ranch via Nachilinda Primary School in Kazungula District by Witpen Ranch Limited.

The Authority continued to collaborate with the two Environmental Management Regulators in ensuring that mitigation measures were implemented by the project proponents as listed in the conditional approval letters from the regulatory agencies.



### 1.3.4. Environmental Monitoring of (non-hydropower) water abstraction (Water Usage Data Collection)

Water usage monitoring of non-hydropower activities was carried out in both Zambia and Zimbabwe from Kazungula to Kanyemba and Kazungula to Luangwa, respectively. A technical analysis was conducted to establish the status of these activities and the impact on the usable water for hydropower generation.

UPSTREAM	ZAMBIA (M <sup>3</sup> /YR)	ZIMBABWE (M <sup>3</sup> /YR)	TOTAL (M <sup>3</sup> /YR)
Water abstraction by non-hydropower activities	258,157,299.6	117,748,270	375,905,569.6

Table 4: Water abstraction by upstream non-hydropower activities

Table 4 shows that in the year 2024, about 375,905,569.6 m<sup>3</sup> (about 0.37 Billion Cubic Metres) of water was abstracted from the Zambezi River for use by non-hydropower activities upstream of the Kariba Dam in both Zambia and Zimbabwe.

With the data collected from upstream of the Kariba Dam, when compared with water utilised by hydropower users ZESCO Limited and Zimbabwe Power Company only 2% accounted for water used (abstracted) by non-hydropower users in 2024, when compared with what Power Utilities used for power generation in 2024.

#### RELATIVE WATER CONSUMPTION BY NON-HYDROPOWER ACTIVITIES UPSTREAM OF KARIBA DAM - 2024

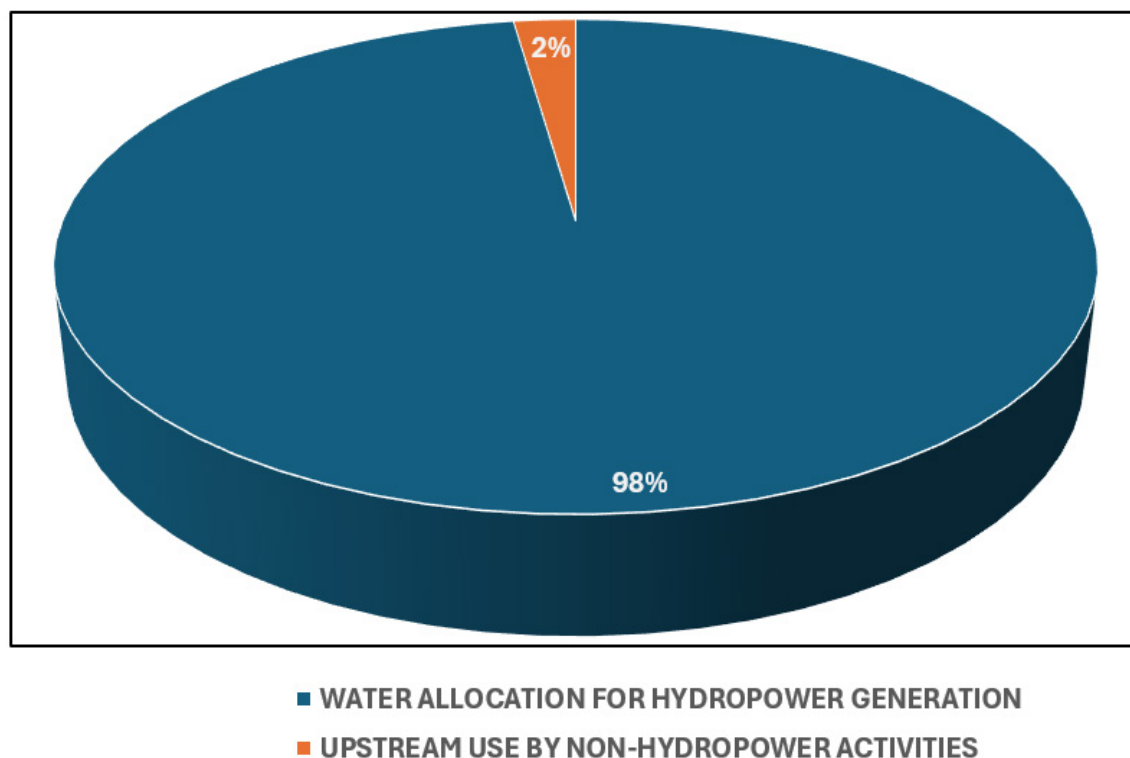


Figure 31: Upstream water consumption by non-hydropower activities relative to water allocated for hydropower generation upstream of Kariba Dam – 2024

## KRA 2: PROJECT MANAGEMENT SERVICES

The Project Management Services Key Result Area aims to increase the water storage volume for hydropower generation by facilitating the construction of additional dam infrastructure along the stretch of the Zambezi River which forms a common border between Zambia and Zimbabwe as well as maintenance of the existing Kariba Dam.

### 2.1 Kariba Dam Rehabilitation Project (KDRP)

The Kariba Dam Rehabilitation Project (KDRP) was divided into three sub-projects – the Plunge Pool Reshaping, Spillway Refurbishment and Institutional Support.

#### 2.1.1. Plunge Pool Reshaping Works

The Plunge Pool was successfully commissioned in September 2024. It was completed with Eur83.3 million having been paid (other outstanding claims were still under discussion at the close of the reporting period) against a budget of Eur130 million. The Contractor, Razel Bec, concluded the demobilization process from site on 2<sup>nd</sup> December 2024.

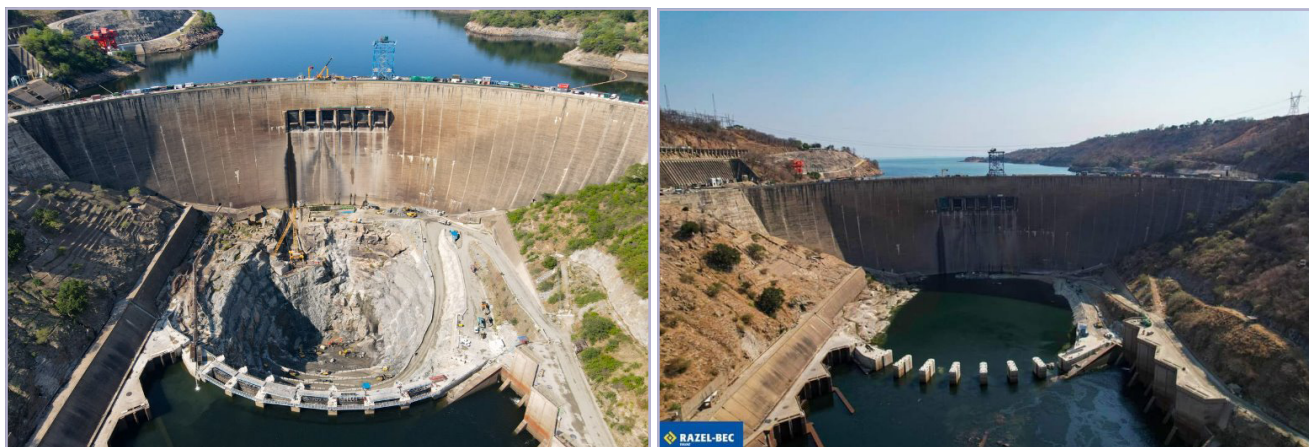


Figure 32: Fully reshaped and re-watered Plunge Pool

#### 2.1.1.1. Spillway Refurbishment works

Physical progress on the first phase of the Spillway Refurbishment works stood at 93% with US \$50.6 million of the Project budget of US \$60 million having been expended by the end of the year under review. The physical progress for the second phase of Spillway Refurbishment works were at 10% completion with US\$2.1 million having been paid out of the total budget of US\$10.2 million. Phase 1 works were projected to be completed by September 2025 while phase 2 works were projected to be completed by September 2026.





Figure: 33 Spillway refurbishment phase one works layout

### 2.1.1.2. Institutional Strengthening

The Authority continued to coordinate various consultancies providing technical support on the Project. These included Technical Services; Construction Supervision Consultancies and the Panel of Experts who were offering technical support on critical aspects of the Project. Additionally, the Authority continued with its capacity building programme involving 18 Post Graduate Female Trainees who were incorporated as part of skills transfer.

## 2.2 Batoka Gorge Hydro-Electric Scheme (BGHES)

Following the decision by the Council of Ministers to retender the project, the Authority progressed with the re-engagement of strategic partners including the African Development Bank (AfDB); African Legal Support Facility (ALSF); African Union Development Agency – New Partnership for African Development (AUDA-NEPAD); Southern African Power Pool (SAPP) among others. As part of the Project Road map, preparation for the updating of the studies to address key stakeholder concerns and allow for incorporation of emerging risks associated with climate change commenced. The Engineering and Environmental Feasibility Consultancies as well as the Financial and Commercial Transaction Advisory consultancy were under procurement while the ALSF had already procured a Legal Advisor who had commenced provision of legal support by the end of 2024.

The updating of the studies, which is expected to be completed by the first quarter of 2026, will pave the way for project structuring with assistance from the AfDB who are playing the role of Strategic Advisor to the Project. In parallel, Resource Mobilisation activities have commenced with the establishment of the Resource Mobilisation Committee comprising nominated officials from strategic institutions within the two Contracting States.



## 2.3 Devil's Gorge Hydro-Electric Scheme (DGHS)

The Authority continued undertaking the prefeasibility studies for the Project, aimed at establishing optimal potential sites for the development of the Hydro Electric Scheme. The Options Assessment Report was completed with nine (9) possible sites under consideration with indicative installed capacity ranges of between 1400MW to 1800MW. The studies also included environmental and social screening which revealed some preliminary issues and risks worth considering in the next stages of the study. The final prefeasibility study was expected to be completed by December 2025 to allow for additional geological investigations and Bathymetric surveys by independent contractors.

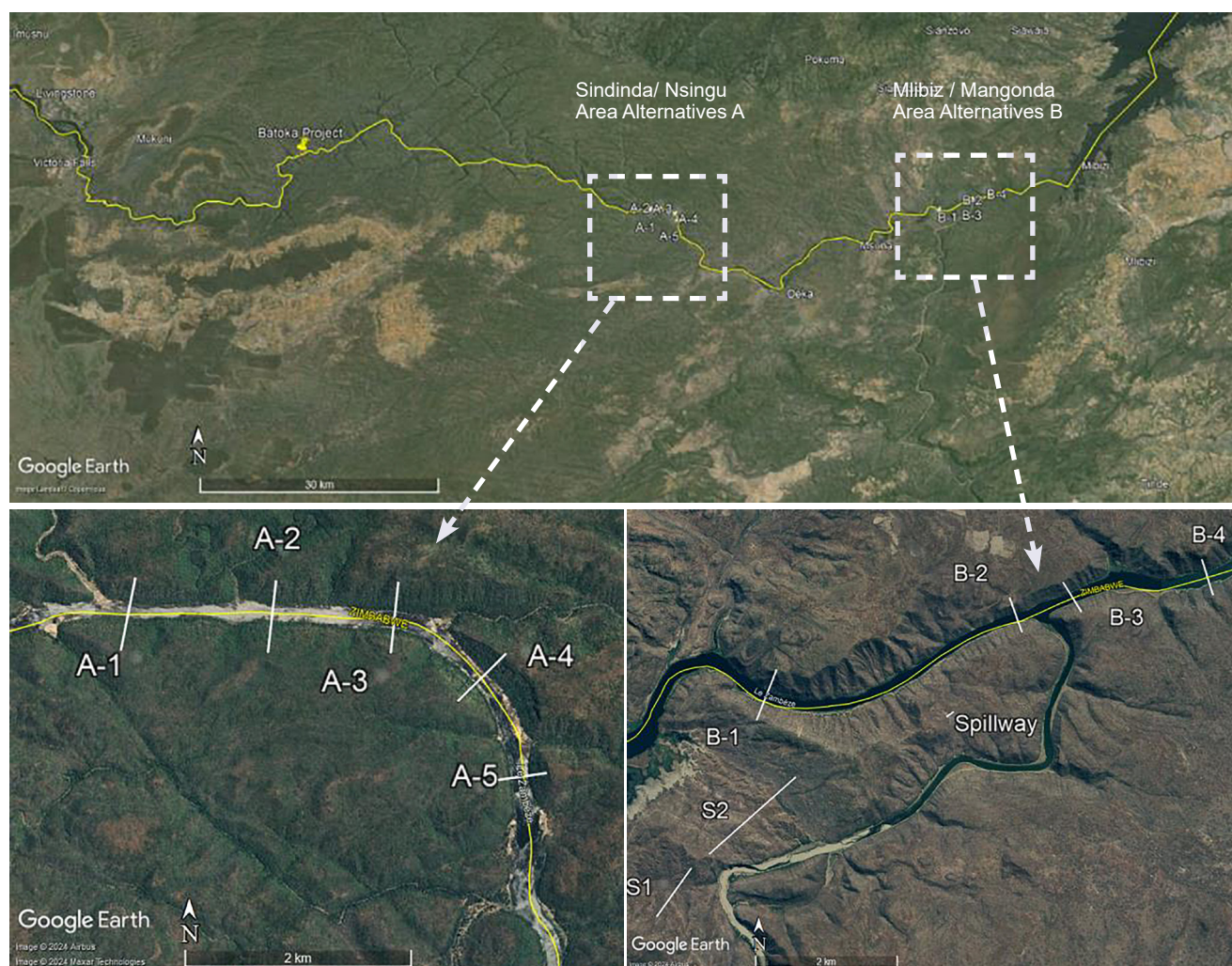


Figure 34: Potential sites for the DGHS

Axis	Average annual volume	Max/min monthly volume	Reservoir volume
A-1 to A-5	36.5 billion m <sup>3</sup>	7.9 billion m <sup>3</sup> 0.7 billion m <sup>3</sup>	1.2 billion m <sup>3</sup>
B-1 & B-4	37.1 billion m <sup>3</sup>	8 billion m <sup>3</sup> 0.71 billion m <sup>3</sup>	27 billion m <sup>3</sup>
B-3 & B-4	40.3 billion m <sup>3</sup>	8.7 billion m <sup>3</sup> 0.77 billion m <sup>3</sup>	31 billion m <sup>3</sup>

Table 5: Average annual inflow volume and reservoir volume for the 9 identified axes at level 595 masl

Alternatives	Average flow (m <sup>3</sup> /s)	Installed capacity (m <sup>3</sup> /s)	Installed capacity (MW)
A-1 to A-5	1,154	1,778	1,491
B-1 & B-4	1,173	1,806	1,706
B-3 & B-4	1,273	1,961	1,853

Table 6: Installed capacities for the respective sites

## 2.4 Development of a Floating Solar Photo Voltaic (PV) Project on Lake Kariba

Engagement with the AfDB regarding the procurement of a Consultant to undertake feasibility studies for the development of the Lake Kariba Floating Solar PV project had advanced with the AfDB confirming a grant of \$500,000.00 from the Sustainable Energy Fund for Africa (SEFA). The procurement process was expected to be completed by June 2025. The development of additional renewable energy sources has been identified as one of the methods to mitigate the devastating impact of climate change which has affected the Zambezi Basin through gradually declining flows.

## 2.5 Execution of Projects under the Zambezi Valley Development Fund (ZVDF)

The Authority is committed to improving access to social amenities for Riparian Communities. As such, under the Zambezi Valley Development Fund (ZVDF), several key projects were completed and officially commissioned as follows:

- Njabalombe Rural Health Centre was commissioned inimba District (Zambia) in Simwatachela Chiefdom. The Centre serves over 8,400 residents across more than 16 villages.
- Chiroti Clinic, located in Hurungwe District (Zimbabwe) in Chief Dandawa's Chiefdom, now provides healthcare to approximately 7,000 residents.
- Chisipiti Primary School also in Hurungwe District, under Chief Dandawa saw the addition of a two-classroom block, further supporting educational development.

Previously, residents in Njabalombe and Chiroti had to travel over 10 kilometres to access basic health services—more than double the World Health Organisation recommended 5-kilometre radius. These developments mark a significant improvement in accessing essential services.

Below is a detailed table depicting progress recorded regarding ZVDF projects.

### 2.5.1. ZVDF Projects in Zambia

Project Location	Project Description	Status	Project Cost
Lusitu Water Reticulation System (Final Phase) - Chirundu	Rehabilitation of Lusitu Water Reticulation System phase 6	The phase 6 works were completed. The final works included: Installation of 3 new and 2 refurbished surface pumps at Sub Center Raw Water Intake and Pambazana station and Completion of Laying of Pipework from the sub center intake to Pambazana.	US\$ 42,261
Musisa School Classroom Block - Gweembe	Construction of 2x2 Classroom Block at Musisa Primary School	The construction of the first 1x2 Classroom Block was 100% completed as per Scope and the Classroom Block was handed over to Gwembe Education Department.	US\$ 34,019

Project Location	Project Description	Status	Project Cost
Njabalombe Rural Health Center -imba	Construction of Njabalombe Rural Health Center	The project was completed and the official handover ceremony undertaken in September 2024.	US\$ 180,396
Nkandanzovu School - Kalomo	Construction of 1x3 Science Laboratory at Nkandanzovu School	The Construction of the 1x3 Science Laboratory block was at 99% completion at the time of reporting. Ongoing works included Plumbing and Gas Installations in the lab room.	US\$ 77,828
Nkandanzovu School - Kalomo	Construction of 2 Staff Houses at Nkandanzovu School	This project was completed and administrative hand over was done in February 2024.	US\$ 111,894
Dengeza Dam Rehabilitation -Sinazongwe	Rehabilitation of Dengeza Dam	Zambia National Service was engaged, and a site visit was conducted. The project awaits the end of the 2024/2025 rainfall season for works to commence.	US\$ 80,486
Chiyabi Clinic - Sinazongwe	Supply and Delivery of furniture and medical equipment for Outpatient Department at Chiyabi Health Centre	Basic Clinic and Furniture equipment was delivered to Chiyabi Clinic for the newly constructed Outpatient Department building.	US\$ 27,169
Nkungwa Clinic -imba	Construction of Nkungwa Rural Health Post	The project was completed, and administrative handover was done toimba Town Council Department of Health	US\$ 75,094

### 2.5.2. ZVDF Projects in Zimbabwe

Project Location	Project Description	Status	Project Cost
Saba Secondary School Staff Houses x2 at Mlibizi in Binga	Construction of two F14 Modified Staff Houses at Saba Secondary School	The project was 100% completed and handed over to Binga Rural District Council. Staff houses now in use.	US\$ 90,528
Nyangwizhu Rural Health Center in Hurungwe	Construction of a Clinic Block.	The project was 100% complete as per scope and handed over to Hurungwe Rural District Council.	US\$ 61,521
Vumba Secondary School Administration Block in Gokwe North	Construction of Secondary School Administration Block in Vumba, Simchembu Ward.	The project was 100% complete and handed over to the School Authorities.	US\$ 78,961
Chidyamugwamu Rural Health Center in Kariba	Construction of a Clinic Block and Three staff Houses.	The construction of the clinic block was at 99% complete. Full completion is expected during the second quarter of 2025.	US\$ 187,582
Jongola Primary School 1x2 Classroom Block in Mola, Kariba	Construction of a 1x2 Classroom Block at Kariba.	The construction of the 1x2 classroom block was 100% complete. Administrative handover was done.	US\$43,567



## KRA 3: CORPORATE SUPPORT SERVICES

### 3.1 Human Resource Management

Human Resource Management is a key Sub-Programme under the *Corporate Support Services* Management Key Result Area. It is responsible for providing strategic leadership in respect of people management and fostering an organizational culture that drives performance and innovation. Within this Sub-Programme, Human Resource specialists are positioned as change leaders and strategic business partners, contributing significantly to the Authority's overall success. Key initiatives undertaken during the period under review were as follows:

#### 3.1.1. Employee / Employer Relations

The Authority continued to experience harmonious Employer - Employee relations across its entire network during the year 2024. No grievances were raised against the Employer (both internally and externally). There was one disciplinary matter recorded whose outcome is pending further guidance. These harmonious relations continued due to the symbiotic relationship that exists between the Employer and the Employees and fostered by the Works Council. The Works Council is a Committee of Employer and Employee representatives whose functions are as follows:

- a) To focus on the best interests of the Authority and employees to ensure the best possible use of its human capital, financial capital, equipment and other resources so that maximum productivity and optimum employment standards may be maintained.
- b) To foster, encourage and maintain good relations between the employer and employees at all levels and to understand and seek solutions to their common problems.
- c) To promote the general and common interest, including the health, safety and welfare of both the Authority and its employees.
- d) To promote and maintain the effective participation of employees in the Authority's operations and to secure the mutual co-operation and trust of employees, the employer and any registered trade union representing employees in the establishment, in the interest of industrial harmony.

#### 3.1.2. Employee Complement versus Establishment

The employee complement as of 31<sup>st</sup> December 2024 was 158 against the approved establishment of 187 positions. The filling of vacant positions regarding the full establishment could not be achieved during the period under review because the recruitment and selection process was put on hold for some positions which were awaiting strategic direction in respect of the undertaking of some key projects. Further, following the undertaking of the Job Evaluation exercise some positions were found superfluous and / or redundant and as such, positions that were vacant could not be filled until the conclusion and implementation of the results arising from the Job Evaluation exercise.

#### 3.1.3. Employment equity between the Contracting States

The number of employees for both permanent and pensionable and fixed term employment contracts for Zambia and Zimbabwe stood at 82 and 76 representing 51.90% and 48.10%, respectively. The employment equity between the Contracting States is within the allowable variance of 2% in keeping with the provisions of the Employment Equity between the Contracting States Policy and Procedures. Consequently, all future recruitments will be undertaken in keeping with the provisions of the

Employment Equity between the Contracting States Policy and Procedures to maintain desirable numbers in each Contracting State.

### 3.1.4. Employee Statistics in respect of gender and age

Details of employee statistics in respect of gender and age were as follows:

- a) As of 31<sup>st</sup> December 2024, the Authority recorded thirty-eight (38) female employees against one hundred and twenty-three (123) male employees giving an overall ratio of female to male employees of 1:3.15. The Authority implemented a Policy in respect of Gender Equity and Equality which provides guiding principles regarding the Authority's intent and strategy on the same. In this regard, the following initiatives were implemented:
  - (i) Encouraging female candidates to apply for positions once advertised;
  - (ii) Increasing the number of female candidates during the pre-selection process, provided they meet the requisite job specifications; and
  - (iii) Availing first preference to female candidates for employment if they meet the criteria set for the job during the interviews.
- b) As of 31<sup>st</sup> December 2024, records indicated that fifty-four (54) employees will leave the employment of the Authority within the next five (5) years through normal retirement and expiry of Employment Contracts. Consequently, the average age for employees in the Authority stood at 47 years.

### 3.1.5. Summary of the opening and closing numbers of employees

Details of the employee complement for the Year 2024 were as indicated below:

Details	Numbers
Opening number of employees as of 1 <sup>st</sup> January 2024	156
Engagements	13
Separations	11
Closing number of employees as of 31 <sup>st</sup> December 2024	158

Table 7: indicates the 2024 Employee complement

### 3.1.6. Summary of employee engagements and separations

The details of employee engagements and separations during the period under review and for the year 2024 were as indicated below:

Engagements/Separations	2024	2023
Engagements	13	7
Deaths	0	1
Retirement/Medical Discharge	6	1
Resignation	4	5
Dismissal	0	0
Expiry of Employment Contracts	1	0
Retrenchment	0	0

Table 8: Employee engagements and separations



### 3.1.7. Details of Employee Engagements

The following employees were either engaged or re-engaged during the period under review:

No.	Name	Position	Department	Date of Appointment	Location
1.	Mr. Obert Paradzai	Legal Officer	Corporate Services	1 <sup>st</sup> February 2024	Lusaka
2.	Mr. Oswell Muvadi	Driver	Corporate Services	7 <sup>th</sup> March 2024	Kariba
3.	Mr. Knowledge Senzere	General Worker	Projects & Dam Management Services.	11 <sup>th</sup> March 2024	Kariba
4.	Mr. Hope Tafadzwa Karambwe	General Worker	Projects and Dam Management Services.	12 <sup>th</sup> March 2024	Kariba
5.	Ms. Mildred Zuze	General Worker	Projects and Dam Management Services.	13 <sup>th</sup> March 2024	Kariba
6.	Mr. Simbarashe Ndige	General Worker	Projects and Dam Management Services.	13 <sup>th</sup> March 2024	Kariba
7.	Eng. Sithembinkosi Z. Mhlanga	Director – Projects and Dam Management Services	Projects and Dam Management Services	1 <sup>st</sup> May 2024	Lusaka
8.	Eng. Munesushe Mudzi	Project Planning Officer - KDRP	Projects and Dam Management Services	1 <sup>st</sup> May 2024	Kariba
9.	Mr. Assios Hungwe	Artisan - Electrical	Projects and Dam Management Services	4 <sup>th</sup> June 2024	Kariba
10.	Ms. Chipso Zimi	Messenger	Corporate Services	18 <sup>th</sup> June 2024	Kariba
11.	Mr. Brighton Rangwani	Motor Vehicle Workshop Attendant	Projects and Dam Management Services.	1 <sup>st</sup> July 2024	Kariba
12.	Mr. Clive Banda	Motor Vehicle Workshop Attendant	Projects and Dam Management Services.	3 <sup>rd</sup> July 2024	Kariba
13.	Mrs. Misozi L. K. Mbawo	Manager – Procurement	Corporate Services Department	9 <sup>th</sup> December 2024	Lusaka

Table 9: Employee Engagements and Re-engagements

### 3.1.8. Details of Employee Separations

**3.1.8.1. The following employees were re-engaged upon being separated from the employ of the Authority.**

No.	Name	Previous Position	New Position	Department	Mode of Separation	Date of separation
	Eng. Munesushe Mudzi	Civil Technician	Project Planning Officer -KDRP	Projects and Dam Management Services.	Resignation to assume a more senior position	30 <sup>th</sup> April 2024



No.	Name	Previous Position	New Position	Department	Mode of Separation	Date of separation
	Eng. Sithembinkosi Mhlanga	Director – Projects and Dam Management Services	Projects and Dam Management Services	Projects and Dam Management Services.	End of Employment Contract	30 <sup>th</sup> April 2024
	Mr. Assios Hungwe	Electrical Assistant	Artisan - Electrical	Projects and Dam Management Services	Resignation to assume a more senior position	4 <sup>th</sup> June 2024
	Mrs Misozi Mbawo	Procurement Officer	Manager – Procurement	Corporate Services	Resignation to assume a more senior position	8 <sup>th</sup> December 2024

Table 10: Employee Separations and re-engagement

### 3.1.8.2. The Authority bade farewell to seven (7) employees who left the employ of the Authority as indicated below:

No	Name	Previous position	Department	Mode of Separation	Date of Separation
	Mr Patrick Munengami	Messenger	Corporate Services	Retirement	3 <sup>rd</sup> March 2024
	Mr. Situmbeko Wamunyima	Artisan – Electrical	Projects and Dam Management Services	Retirement	12 <sup>th</sup> April 2024
	Mr. Samuel Mwale	Hydrology Technician	Water Resources and Environmental Management	Retirement	25 <sup>th</sup> May 2024
	Mr. Casten Machacha	General Maintenance Attendant	Projects and Dam Management Services	Retirement	25 <sup>th</sup> May 2024
	Mr. Johnson Sibanda	Messenger	Corporate Services	Retirement	13 <sup>th</sup> September 2024
	Mr. Langton Pfaira	Manager Procurement	Corporate Services	Resignation	30 <sup>th</sup> September 2024
	Mr. Mathias Mwanza	Driver	Corporate Services	Retirement	25 <sup>th</sup> December 2024

Table 11: Employee Separations

### 3.1.8.3. Employee Promotions

One employee was promoted during the period under review as indicated below:

Name	Previous position	New position	Previous Department	New Department	Date of Promotion	Location
Mr. Emmanuel Hapunda	Accounts Data Operator	ICT Technician -Systems Analysis and Development Support	Corporate Services	Corporate Services	1 <sup>st</sup> September 2024	Lusaka

### 3.1.9. Policy review and / or development and implementation

The Board approved two (2) Policies and Procedures which were developed as indicated below:

No	Description of the Policy	Remarks
1	Overtime Policy and Procedures	New Policy
2	Workplace Employee Wellness Policy and Procedures	New Policy

Table 12 : Policies and Procedures reviewed.

#### 3.1.9.1. Training and Development /Capacity Building

Every year, the Authority endeavours to empower employees with the knowledge and skills vital for ensuring effective execution of its Corporate Strategic Objectives through the facilitation of attendance of training and development programmes. However, due to financial constraints during the period under review, there were no individual competency-based Training and Development programmes undertaken save for Seminars and Professional Annual Conferences and In-House Training programmes.

Details of seminars and professional annual conferences attended are as indicated below:

No	Training Programme/ Workshop	Type of Training Programme / Workshop	Dates	Number of Participants
1	Zambia Institute of Purchasing and Supply (ZIPS) Procurement Excellence for Social – Economic Growth Training Workshop	Professional Training Workshop for Heads of Institutional / Department	14 <sup>th</sup> to 15 <sup>th</sup> March 2024	2
2	SAP Travel Management Module Go - Live	SAP Travel Management Inhouse Training	8 <sup>th</sup> to 15 <sup>th</sup> March 2024	159
3	SAP Payroll Backend Training for SAP Payroll Super Users	Inhouse Training	18 <sup>th</sup> to 26 <sup>th</sup> March 2024	5
4	First AID Training	First AID Inhouse Training	10 <sup>th</sup> to 14 <sup>th</sup> June 2024	17
5	ZICA 2024 Pre AGM Workshop and Annual General Meeting	Professional Pre AGM Workshop and Annual General Meeting	17 <sup>th</sup> to 19 <sup>th</sup> July 2024	13
6	Library and Information Association of Zambia Conference and Annual General Meeting	Professional AGM Workshop and Annual General Meeting	20 <sup>th</sup> to 23 <sup>rd</sup> August 2024	3
7	2025 – 2029 Corporate Strategy Workshop	Inhouse Workshop	16 <sup>th</sup> Sept, 19 <sup>th</sup> and 23 <sup>rd</sup> 27 <sup>th</sup> Sept 2024	75
8	Engineering Institute of Zambia Symposium and Annual General Meeting	Symposium and Annual General Meeting	18 <sup>th</sup> to 20 <sup>th</sup> April 2024	41
9	Zambia Institute of Purchasing and Supply	National Conference and Annual General Meeting	4 <sup>th</sup> to 7 <sup>th</sup> June 2024	3
10	Institute of People Management of Zimbabwe	2024 Annual HR Convention	10 <sup>th</sup> to 13 July 2024	4

No	Training Programme/ Workshop	Type of Training Programme / Workshop	Dates	Number of Participants
11	Zambia Institute of Secretaries	2 <sup>nd</sup> Annual General Meeting and Workshop	01 <sup>st</sup> to 4 <sup>th</sup> October 2024	7
12	Zambia Institute of Public Relations and Communication	Training Development	16 <sup>th</sup> to 17 <sup>th</sup> October 2024	1
13	Zambia Institute of Public Relations	Annual Conference and AGM	19 <sup>th</sup> to 22 <sup>nd</sup> March 2024	2
14	Zambia Institute of Human Resource Management	ZHIRM Annual convention	6 <sup>th</sup> to 8 <sup>th</sup> November 2024	2

Table 13: seminars and professional annual conferences

### 3.1.9.2. Performance Management System

The Integrated Results Based Management (IRBM) System was implemented successfully after concluding the implementation process of one component of Phase two of the IRBM System in respect of Monitoring and Evaluation (M&E). The implementation of the last component under Phase Two of the IRBM System was still underway.

The implementation of the Performance Management System Action Plan during the period under review was effectively undertaken. Employees executed their Individual Personnel Performance Work Plans and Appraisals and undertook performance assessments for the year 2024. Quarterly Performance Monitoring and Evaluation reviews were conducted in respect of Individual Personnel Performance Work Plans and Appraisals on a quarterly basis. The quarterly performance monitoring and evaluation reviews were based on the agreed performance targets for the period under review for each employee. During the period under review, performance in respect of fifty-eight (58) employees representing 38% at various levels exceeded the set performance targets. This achievement was within the normal distribution or the bell curve in respect of performance management.

In view of the approved Performance Management System Policy and Procedures and Remuneration Policy and Procedures, the Authority was expected to effect payment of performance rewards to eligible employees during the year 2025 in respect of the performance cycle for the year 2024.

### 3.1.9.3. Employee Recognition Programmes

Employee recognition plays a crucial role in fostering a positive work environment and driving employee engagement and productivity. Acknowledging and appreciating employees' efforts and achievements not only boosts their morale but also creates a sense of value and purpose. In this regard, the Authority has put in place employee recognition programmes awarding deserving employees on monthly or annual basis.

Details of the number of employees recognised during the year 2024 are as indicated below:

a) Employee of the month

Three (3) employees from each Department were availed the employee of the month award on a quarterly basis based on the employee's outstanding performance and /or conduct during the month.

b) Annual Excellence awards

Annual Excellence awards were availed to employees during the Labour / Workers Day celebrations held in Siavonga, Zambia as indicated here below:





NO	Excellence Award Category	Number of recipients	Description of the Award
1	Unsung Hero	5	This award recognizes the contribution of non-managerial employees who are not normally recognized but contribute exceptional input to the business.
2	Light Bulb	5	This award recognizes the exceptional ideas and innovation made by employees that result in tangible improvement in the operations of the Authority or reduction in costs.
3	Bureaucracy Buster	5	This award recognizes employees who undertake exemplary actions in cutting red tape to deliver outstanding service to Authority customers. The award also recognizes exceptional achievements under the Authority's competency framework including having a can-do-attitude, going the extra mile, collaboration and result focus.
4	Team of the Year	15	This award celebrates the achievement of an outstanding team in realizing specified goals over and above the normal requirements of the job.

Table 14: Annual Excellence awards

#### 3.1.9.4. Employee Welfare and Wellness Programmes

The Authority recognizes that healthy employees build a healthy organization and that a healthy organization in turn produces excellent business performance results. Consequently, the Authority continued to improve the welfare and wellbeing of employees through Human Resource strategies aimed at achieving the following:

- Improved employee satisfaction.
- Improved employee productivity.
- Mitigate occupational health and safety risks.
- Reduced costs associated with absenteeism; and
- Improved employee organizational culture.

In that regard, the Authority undertook the following initiatives:

- HIV/AIDS** - The Authority continued to support employees by facilitating the provision of counselling services and medical support. Employees who had disclosed their HIV/AIDS status continued to receive food packs and nutritional supplements monthly.

The Workplace HIV/AIDS Scheme Annual Work Plan for the year 2024 was moderately implemented. Some planned activities were not undertaken due to liquidity constraints faced by the Authority in 2024.

- Health and Safety** – The Authority continued to recognize employees' wellbeing, satisfaction and productivity and the importance of a healthy and safe environment for its stakeholders. The Authority facilitated safety talks, safety role plays and awareness campaigns in keeping with the Authority's core values which include safety of employees and other stakeholders.

The Occupational Health and Safety Annual Work Plan for 2024 was moderately implemented as some of the planned activities were not undertaken due to financial constraints which affected the Authority.

### c) **Social Sports**

The Authority values the health and vitality of its employees. This is exemplified by one of the Authority's core values of Health which is expressed as Health and Safety. In that regard, during the period under review, the Authority facilitated employees' participation in social football, golf and athletics as follows:

#### (i) **Social Football**

The Committee for the Social Soccer Club organized both local and out of station social games with other social clubs in Kariba and Harare in Zimbabwe and Ndola in Zambia.

#### (ii) **Golf**

Employees at Head Office participated in golf tournaments held locally in Lusaka.

#### (iii) **Provision of Gym facilities**

Employees at both the Head Office and Kariba station utilized facilities for their stay-fit programmes. This continued during the period under review with the gym equipment being in fair state.

However, since the gym premises in Kariba have limited space, plans to expand the same were still underway.

### d) **Athletics**

The Authority faced financial constraints during the period under review. Consequently, employees could not participate in any athletic activities.

## 3.2 Procurement

The Procurement Policy and Procedures Manual was revised in line with the current laws governing procurement in the Contracting States, the Public Procurement Act 2020 of Zambia and the Public Procurement and Disposal of Public Assets Act No. 5 of 2017 of Zimbabwe.

## 3.3 Partner and Client Relationship Management

The Authority recognises that maintaining positive relationships with stakeholders is crucial to effectively fulfilling its mandate. The following initiatives were implemented to ensure sustained and productive engagement with key stakeholders:

### 3.3.1. Partner and Client Satisfaction Baseline Survey

During the year under review, the Authority conducted a Partner and Client Satisfaction Baseline Survey (PCSBS) to assess satisfaction levels among key stakeholders. The results of this survey will inform the development of strategies aimed at strengthening mutually beneficial relationships between the Authority and its stakeholders.

To further enhance stakeholder engagement, a comprehensive Stakeholder Engagement Framework will be finalised in 2025. This framework will guide the Authority in effectively addressing stakeholder concerns, incorporating their feedback and ensuring transparent communication. The survey revealed high levels of stakeholder satisfaction with the quality of services provided by the Authority. The overall Partner and Client Satisfaction Index (PCSI) stood at 81%, well above the minimum

acceptable threshold of 61% while the Brand Equity Index for Partners and Clients was recorded at 77%, also exceeding the benchmark of 61%, indicating strong positive brand perception.

### 3.3.2. Stakeholder Engagement and Communication Initiatives

Engaging with stakeholders is essential for building trust, fostering confidence and securing buy-in for the Authority's programmes. In 2024, the Authority conducted various stakeholder engagements which included the following:

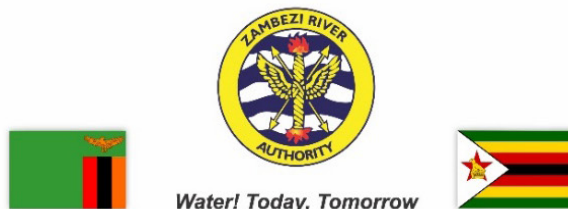
- a) **Community Engagements:** Engagements were held with communities in Namomba Village, Chiawa, and Chirundu (Zambia), as well as Chirundu (Zimbabwe), to discuss low water levels and gather community feedback.
- b) **Project Updates:** Communities near potential sites for the Devil's Gorge Hydro-Electric Scheme were updated on project developments.
- c) **Trade Fair Participation:** The Authority participated in the Zambia and Zimbabwe International Trade Fairs, as well as the SADC Industrialisation Week, to share information and interact with a broader audience; and
- d) **High-Level Visits:** The Authority hosted delegations from the African Development Bank and the Nile Basin Initiative, the former on a joint mission to the proposed Batoka Gorge Hydro-Electric Scheme site and community engagements and the latter visiting as part of a benchmarking exercise.

These activities, which range from community meetings to international exhibitions and the hosting of delegations, reinforce the Authority's vision to be the model organisation in dam and water resources management in the Zambezi River Basin.

### 3.3.3. Stakeholder Service Charter

The Stakeholder Service Charter was approved by the Board of Directors. It clearly outlines the Authority's commitment to its stakeholders by specifying the standards of service they can expect.





## STAKEHOLDER SERVICE CHARTER

### 1. SERVICE DELIVERY GUARANTEES

The Authority is committed to providing high-quality services to its stakeholders, ensuring they are treated with courtesy, respect, and professionalism. Stakeholders have the right to fair and equal treatment across all interactions, whether in person, through written communication, phone, email, or social media.

The Authority upholds a culture of service excellence guided by its core values. It pledges to address stakeholder concerns promptly, recognising them as opportunities for innovation and growth. Additionally, the Authority adheres to all relevant laws and international best practices.

### 2. SERVICE DELIVERY PRINCIPLES

The Authority's service delivery is guided by:

- Stakeholder Focus
- Professionalism
- Continuous Improvement (in business policies and procedures)

### 4. SERVICE DELIVERY STANDARDS

NO.	SERVICE	STANDARD (TURNAROUND TIME/KPI)
i.	Present project status reports to the Board Committee	Quarterly
ii.	Present State of the Dam Reports to the Board Committee	By 31st January each year
iii.	Avail accurate Lake Level information via the Hydrological Bulletin	Daily
iv.	Avail accurate Lake Level information via the Corporate Website	Bi-weekly
v.	Submit hydrological simulation reports to the Board Committee & Utilities	Quarterly
vi.	Submit water quality reports to the Board, Utilities & Environmental Regulators	Quarterly
vii.	Determine water allocation for power generation at Kariba	By 1st October each year
viii.	Conduct a comprehensive Client Satisfaction Survey	By 31st December each year
ix.	Issue accurate and timely client invoices	Within 7 working days after month-end
x.	Process invoice payments on time	As per agreed terms
xi.	Acknowledge receipt of written enquiries	Within 48 working hours
xii.	Answer calls courteously during office hours	Within 3 rings
xiii.	Address visitors professionally at reception	Within 5 minutes
xiv.	Submit inspection reports (Local Authority & National Regulations compliance)	Annually or as required
xv.	Adhere to service quality guidelines	Daily

### 5. FEEDBACK MECHANISM

The Authority welcomes feedback via the following channels:

#### Email

- ☒ General: [info@zambezi.org](mailto:info@zambezi.org)
- ☒ Public Relations & Communications Unit: [pr@zambezi.org](mailto:pr@zambezi.org)

#### Telephone

- ☒ Lusaka Office: +260 211 226 950 / 22970-3
- ☒ Kariba Office: +263 261 2146140
- ☒ Harare Office: +263 8677008291

#### Physical Addresses

- ☒ Head Office: Kariba House, 32 Cha Cha Cha Road, Lusaka, Zambia
- ☒ Kariba Office: Administration Block 21, Lake Drive, Kariba, Zimbabwe
- ☒ Harare Office: Club Chambers, Corner Third Street & Nelson Mandela Avenue, Harare, Zimbabwe

#### Postal Addresses

- ☒ Lusaka: P.O. Box 30233, Zambia
- ☒ Kariba: Pvt Bag 2001, Zimbabwe
- ☒ Harare: P.O. Box 630, Zimbabwe

#### Suggestion Boxes

Available at the following locations:

- ☒ Kariba House (Lusaka): Reception Area
- ☒ Kariba Admin Offices: Next to Reception Entrance
- ☒ Harare Office: Next to Reception Entrance

#### Digital Media

- ☒ Website: [www.zambezi.org](http://www.zambezi.org)
- ☒ Facebook: [@ZambeziRiverAuthority](https://www.facebook.com/ZambeziRiverAuthority)
- ☒ X (Twitter): [@AuthorityRiver](https://twitter.com/AuthorityRiver)
- ☒ YouTube: [Zambezi River Authority](https://www.youtube.com/ZambeziRiverAuthority)

Eng. Munyaradzi C. Munodawafa  
CHIEF EXECUTIVE

Eng. Chrispin Namakando  
WORKERS COUNCIL CHAIRPERSON

### 3.3.3.1. Media Engagement and Monitoring

Media monitoring plays a key role in tracking public perception and evaluating the effectiveness of communication strategies. It also helps identify emerging issues before they escalate and points to areas for improvement.

#### 3.3.3.1.1. External Media Coverage

In 2024, media coverage of the Authority was largely positive. The Authority participated in several interviews to clarify issues, especially regarding the hydrological outlook at the Kariba Reservoir amid the El Niño-induced drought.

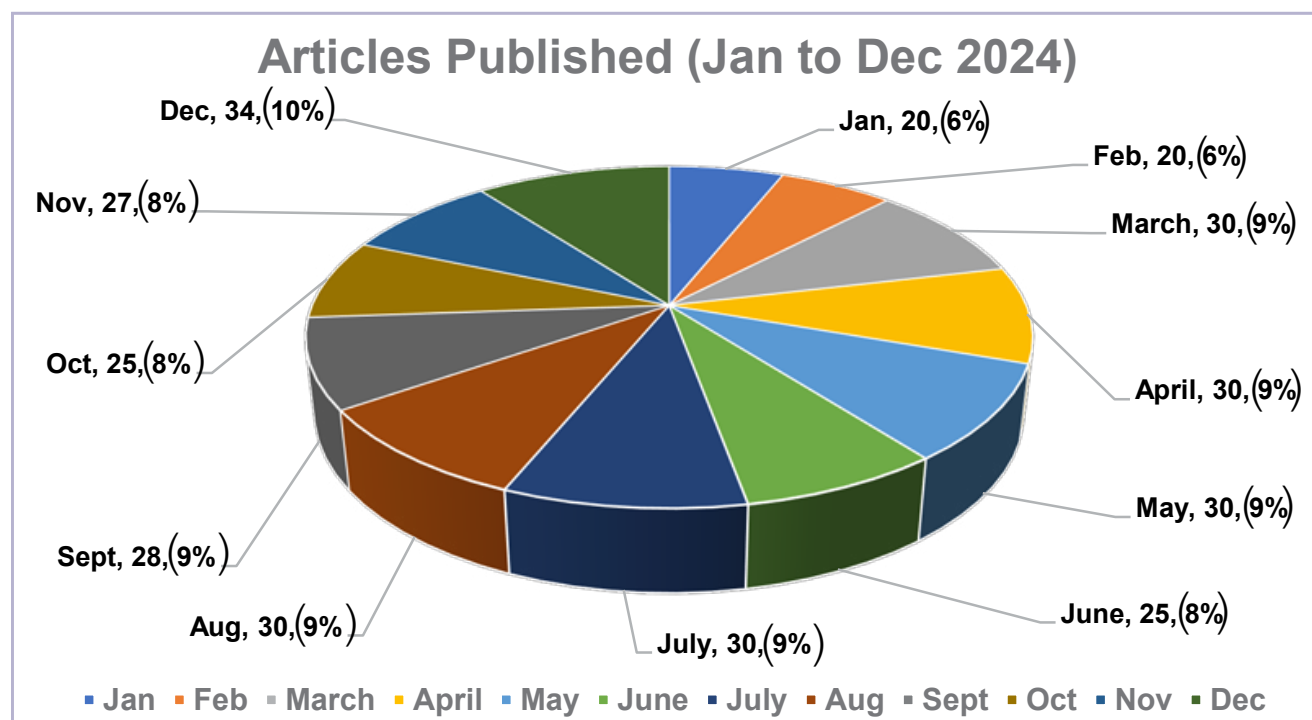
Despite the prominence of the water situation at Kariba Dam in the media, the Authority proactively engaged stakeholders on other operational matters through a structured environmental monitoring programme, broadcast via multiple radio channels. Public response to this initiative was generally favourable.

The Plunge Pool Reshaping sub-project under the Kariba Dam Rehabilitation Programme also received substantial media coverage. The commissioning ceremony was attended by over ten (10) Ambassadors and High Commissioners, underscoring the importance of the Project.

#### 3.3.3.1.2. Owned Media

Throughout 2024, the Authority made extensive use of its own media platforms to maintain continuous engagement with stakeholders. Analysis of feedback received via these channels confirmed a generally positive perception of the Authority, despite isolated concerns regarding project execution capacity.

A breakdown of owned media activity and feedback is provided in the table below:



## KRA 4: FINANCIAL RESOURCES, MOBILISATION AND ACCOUNTABILITY

### 4.1 2024 Budget and Financial Performance Review

The analysis below provides the Authority's performance in respect of the execution of the budget for the year 2024. The Authority achieved an Operating Income of US\$14.95 million compared to the budget of US\$14.13 million giving rise to a favourable variance of US\$0.82 million or 5.8%. The favourable variance was attributable to higher overutilisation of water by 1.75 BCM on the combined water utilisation of 17.75 BCM against the water allocation of 16 BCM. ZESCO Limited over-utilised by 1.33 BCM which represented 16.6% more than the maximum allowable overutilisation of 5% that does not attract penalties. Consequently, ZESCO Limited paid an overutilisation penalty of US\$0.93 million.

The Operating Expenditure was US\$15.59 million (excluding depreciation) against a budget of US\$19.71 million resulting in a favourable variance of US\$4.12 million or 20.9% of the activities budget. The low budget execution in the year was on account of low expenditure on Project Management due to non-undertaking of activities under the Batoka Gorge Hydro Electric Scheme (BGHES); lower spending on Consultancy Services and Consulting Engineering expenses.

Further, the total project Capital Expenditure relating to expenditure funded by the donors/financiers namely: World Bank, European Development Fund (EUD), African Development Bank (AfDB) and Swedish International Development Cooperation Agency (SIDA) as well as that funded by Zambezi River Authority (Counterparty Funding) was US\$30,180,846 against the annual total project capital budget of US\$51,731,856. This represented 58% budget absorption rate.

Although the amount owed by Power Utilities remained high, cash inflows from approved Payment Plans supported the Authority's liquidity needs during the period. However, the Power Utilities' long-term obligations remained critical due to persistent high indebtedness. Notably, Power Utilities' trade receivables decreased by 3.2% from US\$90.13 million to US\$87.20 million.

Additionally, the unliquidated balance of illiquid cash in Zimbabwe decreased by 60% to US\$2.12 million from US\$5.3 million in the previous year. Total inaccessible funds, comprising amounts owed by Power Utilities and illiquid cash, stood at US\$89.32 million. The substantial trade receivables continued to strain the Authority's financial health, hindering timely budget execution and impacting achievement of the 2024 work plan objectives under the Corporate Strategy.

The Authority's liquidity ratio (Current Ratio) indicated a favorable outlook of 4.02 times, suggesting sufficient current assets to cover liabilities. However, excluding illiquid funds, being trade receivables not easily accessible, the Acid Test Ratio revealed a stark contrast of 0.46 times, indicating potential liquidity challenges. Despite ongoing engagement with Power Utilities and mitigation efforts, the lack of an enforceable debt collection mechanism kept outstanding balances high. As a result, liquidity and credit risks remained extremely critical and hence requiring urgent attention.

The Authority continued to ensure sound internal controls and assurance environment for purposes of ensuring proper accountability to all its stakeholders.

### 4.2 Enterprise Risk Management

Enterprise Risk Management (ERM) is a key component of the Authority's operations, with the Board of Directors providing overall oversight through the Audit, Risk Management, and Corporate Governance Board Committee. Committed to international best practices, the Authority's ERM





framework is benchmarked against globally recognized standards, namely: ISO 31000:2018 and COSO ERM framework. Supplemented by specialized procedures such as the Kariba Dam Standing Operating Procedures and Emergency Preparedness Plan, the Authority integrates Risk Management into identification, assessment, rating and strategy formulation and implementation to minimize threats to the achievement of organizational objectives. This commitment is further underscored by an annual budget allocation for ERM initiatives and capacity building.

The Authority's Risk Management Committee comprises Risk Champions representing various business functions, working under the direction of Executive Management to identify, assess and mitigate risks. This Committee ensures that risks are proactively managed and mitigation actions implemented effectively.

During the year 2024, the Enterprise Risk Management environment of the Authority was characterised by the following risk events:

- a) Reduced Water levels in the Kariba catchment: The El Niño-induced drought led to historically low water levels at Kariba Dam, threatening the sustainable operation of the Kariba reservoir and negatively affecting the revenue base.
- b) Whilst there was some improvement compared to the previous year, there was continued underperformance by the two Power Utilities in the settlement of water sales dues. Credit and Liquidity risks maintained high ratings as the related party nature of business relationship between the Authority and the two Power Utility Companies has constrained the Authority from deploying measures such as lawsuits or engaging bailiffs or debt collectors.
- c) Having disengaged with the Developer, the retendering process to identify a suitable developer for the Batoka Gorge Hydro-Electric Scheme (BGHES) Project commenced. The retendering of the project introduced new risks, including finance, procurement, and contingent liability risks.
- d) Kariba Dam Rehabilitation Project: There were heightened safety risks during the plunge pool refurbishment as staff continued working at considerable heights, hot temperatures and dusty areas.

To mitigate risks, the Authority implemented several measures which included the following:

- a) Regular engagement with Power Utilities to ensure timely payments and reduce outstanding trade receivables.
- b) Ongoing risk profiling and mitigation for project-specific risks
- c) Structured procurement planning for the BGHES project, with clear processes and timelines.
- d) Enhanced occupational health and safety through daily toolbox talks, risk assessments and work method statements.

### 4.3 Business Development

The Authority's business development initiatives are focused on driving growth, diversifying revenue streams, and enhancing sustainability. The key areas of focus include the following:

- a) New Business Opportunities: Exploring new partnerships, collaborations and revenue streams to support the Authority's strategic objectives.
- b) Project Development: Developing and implementing new projects, such as the Floating Solar Photo- Voltaic Scheme, to drive growth and increase energy generation capacity.
- c) Market Development: Expanding the Authority's presence in new markets and sectors, while strengthening relationships with existing stakeholders.

### 4.3.1. Objectives

The objectives of business development are as follows:

- To enhance sustainability by diversifying the Authority's revenue streams beyond traditional water sales, recognizing the impact of climate change on this revenue source. By developing new business streams that are not dependent on availability of water, the Authority is proactively managing risk and ensuring long-term viability.
- Drive growth by identifying and pursuing new business opportunities that support the Authority's strategic objectives.
- Enhance sustainability through development of sustainable business practices that support the Authority's long-term viability.

### 4.3.2. Outcomes

The outcomes of the Authority's business development initiatives are expected to drive growth by promoting alternative sources of revenue and enhancing sustainability and ultimately supporting the achievement of its strategic objectives.

## 4.4 Performance regarding the 2020-2024 Corporate Strategy

The Authority's Corporate Strategy whose tenure ran from 2020 came to an end in 2024. Consequently, a thorough review and evaluation of the performance on the four Key Result Areas was undertaken. The overall performance on all four Key Result Areas was three (3), indicating a fair performance. The results of the evaluation were as summarized in the table below:

Key Result Area (KRA) - A	Weight - B	Performance Score - C	Performance Grading - D	Weighted Performance Score (E = BxC)
<b>KRA 1: Dam, Water Resources and Environmental Management</b>	15%	4	Good	0.60
<b>KRA 2: Project Management Services</b>	20%	3	Fair	0.60
<b>KRA 3: Corporate Support Services</b>	45%	3	Fair	1.35
<b>KRA 4: Financial Resources, Mobilisation and Accountability</b>	20%	3	Fair	0.60
<b>Overall Average Score</b>			<b>Fair</b>	<b>3</b>

The overall performance indicated that the Authority demonstrated strengths in dam safety, environmental compliance and governance training. However, challenges persisted in project completion, procurement, service delivery and implementation of ICT related initiatives, largely due to liquidity constraints and budget limitations.

While notable progress was made in generating non-traditional revenue streams and mobilizing funds for the Zambezi Valley Development Fund, securing the BGHES project financing and collecting trade receivables remained key areas for improvement. Targeted financial strategies, enhanced stakeholder engagement and optimized budget allocation can strengthen operational efficiency and support sustainable development objectives.

Following the expiration of the 2020 to 2024 Corporate Strategy, the year ended with finalization of the formulation of the 2025 to 2029 Corporate Strategy whose approval was granted by the close of the year 2024 by the Board. The Corporate Strategy was therefore well positioned for the official launch, execution, monitoring and evaluation as well as reporting in the ensuing year.





**FINANCIAL REPORT FOR THE YEAR  
ENDED 31<sup>ST</sup> DECEMBER 2024**



## DIRECTOR'S REPORT

The Directors submit their report together with the audited annual financial statements for the year ended 31 December 2024, which disclose the state of affairs and financial performance of Zambezi River Authority ("the Authority").

### Establishment and Functions

The Authority was established as a corporate body on 1 October 1987 by parallel legislation in the Parliaments of Zambia and Zimbabwe under the Zambezi River Authority Acts Chapters 467 and 20:23 respectively. It was tasked with the management of the Zambezi River, which flows between the two countries' common border. The Authority is also mandated to maintain the Kariba Dam and to construct and maintain other dams or infrastructure on the river forming the border between the two countries.

### Principal Functions

The functions of the Authority are set out in the schedule to the Zambezi River Authority Acts Chapters 467 and 20:23 as follows:

- (a) Operate monitor and maintain the Kariba Complex. Kariba complex means:
  - (i) the Kariba Dam and reservoir
  - (ii) all telemetering stations relating to the Kariba Dam
  - (iii) any other installations owned by the Authority
- (b) In consultation with the National Electricity undertakings, investigate the desirability of constructing new dams on the Zambezi River and make recommendations thereon to the Council of Ministers (the "Council");
- (c) Subject to the approval of the Council, construct, operate, monitor, and maintain any other dams on the Zambezi River;
- (d) Collect, accumulate and process hydrological and environmental data of the Zambezi River for the better performance of its functions and for any other purpose beneficial to the Contracting States;
- (e) In consultation with the National Electricity undertakings, regulate the water level in the Kariba reservoir and in any other reservoir owned by the Authority;
- (f) Make such recommendations to the Council as will ensure the effective and efficient use of the waters and other resources of the Zambezi river;
- (g) Liaise with the National Electricity Undertakings in the performance of its functions that may affect the generation and transmission of electricity to the Contracting States;
- (h) Subject to provisions of Article 13, recruit employ and provide for the training of staff as may be necessary for the performance of its functions under the Agreement;
- (i) From time to time and subject to the approval of the Council, make such revision of salaries, wages, and other remuneration to its employees as it considers appropriate;
- (j) Submit development plans and programmes to the Council approval;
- (k) Give effect to such directions, as may from time to time, be given by the Council; and
- (l) Carry out such other functions as are provided for in the Agreement or are incidental or conducive to the better performance of its functions.



## Place of Business

- (a) Head Office: House, 32 Cha Cha Cha Road, P.O. Box 30233, Lusaka, Zambia  
 (b) Harare Office: Club Chambers, Nelson Mandela Avenue, P.O. Box 630, Harare, Zimbabwe  
 (c) Kariba Office: Administration Block, 21 Lake Drive, Pvt. Bag 2001, Kariba, Zimbabwe

## Results

### Year ended 31 December

	ZMW'000	US\$'000	ZMW'000	US\$'000
Revenue	395,575	14,947	421,660	20,706
Deficit for the year	(185,623)	(7,018)	(117,359)	(5,765)

The deficit for the year has been deducted from the revenue reserve.

## Property, plant, and equipment

The Authority purchased property, plant and equipment amounting to US\$ 41.14 million, ZMW 1,088.67 million, (2023 US\$ 30.47 million, ZMW 620.30 million) during the year. In the opinion of the Directors, the carrying value of property, plant and equipment is not more than their recoverable value.

## Average number of employees

The total remuneration of employees during the year amounted to US\$ 8.26 million, ZMW 218.69 million (2023: US\$ 8.35 million, ZMW 170.10 million). The average number of employees was as follows:

Month	Number of Employees	Month	Number of Employees
January	157	July	171
February	158	August	180
March	170	September	179
April	171	October	176
May	171	November	178
June	169	December	178

The Authority has policies and procedures to safeguard the occupational health, safety, and welfare of its employees.

## Related party transactions

The Authority has a common enterprise relationship with Governments of the Republic of Zambia and Zimbabwe. Other related party relationships and material balances that the Authority has with its related parties are listed in Note 24 to the annual financial statements.

## Gifts and donations

The Authority made the following donations to charitable organisations and events during the year.

	ZMW'000	US\$'000	ZMW'000	US\$'000
Donations and sponsorships	4,218	207	4,965	291

## Restructured loan terms of agreement

On 20 August 2015, the Authority signed a 30-year subsidiary loan agreement with the Government of the Republic of Zambia (GRZ) for a principal loan amount of US\$ 114 million to finance the Kariba Dam Rehabilitation Project. The GRZ as the primary borrower contracted loans of US\$ 75 million from the World Bank ("IDA") and US\$ 39 million from the African Development Bank ("AFDB"). According to schedule 1 of this subsidiary loan agreement, the Authority is required to make repayments biannually on 1 March and 1 September. Due to liquidity challenges faced post the contraction of the loans, the Authority held discussions with the Ministry of Finance and National Planning (MoFNP) to restructure the terms of the loan agreement. The GRZ in consultation with the primary lenders i.e. the World Bank (IDA) and the African Development Bank (AfDB) agreed to restructure the terms of the on-lending agreement between the GRZ and the Authority. Key among the changes effected in the Credit Agreements were; reduction of interest rate from 2% to 1.25%, basing the bi annual principal and interest payments on the actual amounts drawn on the facility as opposed to the allotted amount of US\$ 114 million and granting of a two year grace period on the payment of principal thus deferring the first principal repayment due date to 1 March 2024. The Authority and the MoFNP duly executed the Restructured Credit Agreements on 1 April 2022 under the aforementioned terms. In period under review, a total of US\$ 442,040 (2023: US\$ 291,617) was paid in loan interest to the MoFNP.

At 31 December 2024, the cumulative loan amount drawn under IDA facility was US\$ 28,485,429 while that drawn under the AFDB loan was US\$ 18,838,637.

## Risk management and control

The Board of Directors of Zambezi River Authority, through the Audit, Corporate Governance and Risk Management Committee, exercises oversight over Enterprise Risk Management (ERM) processes in the Authority. The Authority is committed to managing risk in accordance with Internationally Accepted Risk Management Principles, Standards and Practices. In this regard, this Policy has been benchmarked against international principles such as those set out in the International Organisation for Standardisation, ISO 31000:2018 and Committee of Sponsoring Organisations (COSO) Enterprise Risk Management (ERM) framework: 2017 and supplemented by the Kariba Dam Standing Operating Procedures (SOP), the Emergency Preparedness Plan (EPP) and other procedures of the Authority. Using these frameworks, the Authority systematically identifies, analyses and responds to risks, including the mapping of inter - relationships between risks. The Board accomplishes its oversight role through:

- (i) Developing policies and procedures on risk management;
- (ii) Following up executive management's implementation of policies and procedures on risk management;
- (iii) Following up on assurance that risk management policies and procedures are working as intended; and
- (iv) Taking steps to foster a risk aware culture

The Board of Directors continued to be guided by the Risk Appetite Statement in exercising oversight over risk management. The Risk Appetite Statement sets out levels of risk exposure in the pursuit of its objectives with focus on three (3) pillars namely:

- 1) Delivery of mandate - Delivery of projects within time, cost and expected quality, and minimal disruption to operations.
- 2) Safe environment and operational facilities – Zero accidents, incidents and near misses.





**Risk management and control (continued)**

- 3) Financial viability – Sustainable cost to income ratio and a healthy liquidity position.

The Authority is willing to pursue risks that will foster achievement of its objectives. Appropriate risk responses will be applied to ensure that all identified risks are kept within the Risk appetite levels as defined from time to time. The Board of Directors recognizes that it will bear some risks that may be above the set Risk Appetite level due to their unavoidable nature.

**Governance Structure**

The Council of Ministers and Directors who held office during the year and to the date of this report were as below:

**(a) Council of Ministers**

Name	Title	Resigned/Appointed
Hon. Edgar Moyo, MP	Chairperson	
Hon. Makozo Chikote, MP	Co - Chairperson	Appointed: 19 July 2024
Hon. Peter C Kapala, MP	Co - Chairperson	Retired: 19 July 2024
Hon. Prof. Mthuli Ncube MP	Member	
Hon. Situmbeko Musokotwane MP	Member	

**(b) Board of Directors**

Name	Title	Resigned/Appointed
Dr. Gloria S. Magombo	Chairperson	
Mr. Peter Mumba	Co - Chairperson	Appointed: 14 September 2023
Mr George T Guvamatanga	Member	
Mr. Mulele M. Mulele	Member	Appointed: 27 February 2025
Mr. Denies Chisenda	Member	Retired: 4 September 2024
Eng. Israel Rwodzi	Member	
Eng. Spyke K. M. Kaoma	Member	Appointed: 14 October 2024
Eng. Clement F.G. Mukosa	Member	Appointed: 15 March 2024
		Retired: 23 July 2024
Eng. Benard Chiwala	Member	Retired: 15 March 2024

**(c) Executive Management**

Name	Title
Eng. Munyaradzi C. Munodawafa	Chief Executive
Mr. Peter Kapinga	Board Secretary/Corporate Services Director
Mr. Edward M. Kabwe	Director – Finance
Eng. Sithembinkhosi Z. Mhlanga	Director – Projects and Dam Management Services
Eng. Christopher Chisense	Director – Water Resources and Environmental Management

**Auditor**

The Auditor, Deloitte & Touche Zambia has indicated willingness to continue in office and a resolution for their reappointment will be proposed at the next Council of Ministers Meeting.

The Auditor's remuneration for the year was US\$44,629 exclusive of taxes. The Auditor did not provide non audit services to the Authority in the period under review.

**On behalf of the Board:**


Board Secretary

9<sup>th</sup> June 2025  
Date

## STATEMENT OF DIRECTORS' RESPONSIBILITIES

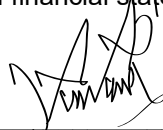
The Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe require the Directors to prepare annual financial statements for each financial year that give a true and fair view of the affairs of the Authority as at the end of the financial year and of its financial performance. It also requires the Directors to ensure that the Authority keeps proper accounting records that disclose, with reasonable accuracy, the financial position of the Authority. The Directors are also responsible for safeguarding the assets of the Authority.

The Directors accept responsibility for the annual financial statements, which have been prepared using appropriate accounting policies supported by reasonable estimates, in conformity with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and with the requirements of the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe. The Directors are of the opinion that the annual financial statements give a true and fair view of the state of the financial affairs of the Authority and of its financial performance in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB). The Directors are also responsible for such internal control, as the Directors determine necessary to enable the preparation of annual financial statements that are free from material misstatements, whether due to fraud or error.

Nothing has come to the attention of the Directors to indicate that the Authority will not remain a going concern for at least twelve months from the date of these annual financial statements.



Chairperson



Co-Chairperson

9<sup>th</sup> June 2025

Date

9<sup>th</sup> June 2025

Date

# INDEPENDENT AUDITOR'S REPORT

To the shareholders of  
**Zambezi River Authority**

## Report on the Audit of the Financial Statements

### Opinion

We have audited the financial statements of Zambezi River Authority (the "Authority"), set out on pages 73 to 111 which comprise the statement of financial position as at 31 December 2024, and the statement of income and expenditure and other comprehensive income, the statement of changes in reserves and the statement of cash flows for the year then ended, and the notes to the financial statements, including a summary of material accounting policy information.

In our opinion, the financial statements give a true and fair view of the financial position of Zambezi River Authority, as at 31 December 2024, and of its financial performance and cash flows for the year then ended in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board and in the manner required by the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe.

### Basis of opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Authority in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) together with the ethical requirements that are relevant to our audit of financial statements in Zambia. We have fulfilled our ethical responsibilities in accordance with these requirements and the IESBA code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have determined the matters described below to be the key audit matter to be communicated in our report.

Key audit matters	How our audit addressed the key audit matter
<b>Impairment of trade receivables</b>	
Trade receivables balance at year end was US\$87,198,964, the provision for doubtful debts at the close of the year was US\$39,589,664 as shown in note 14 to the financial statements	<p>We performed the following audit procedures:</p> <ul style="list-style-type: none"> <li>• Testing of inputs into the calculation of the doubtful debts, including the ageing, validity and completeness of the amounts included in the calculation for doubtful debts;</li> <li>• Assessing the recoverability of the debtors ZESCO Limited and Kariba Hydro Power Company Limited (KHPC).</li> </ul>
Management raises provisions based on judgements as to whether there is any observable data indicating that there is a measurable decrease in the estimated future cash flows.	



Key audit matters (continued)	How our audit addressed the key audit matter
<b>Impairment of trade receivables (continued)</b>	
<p>Accordingly, an allowance for impairment is made where there is an identified loss event or condition which, based on previous experience, is evidence of a reduction in the recoverability of the cash flows. Typically, management provides for:</p> <ul style="list-style-type: none"> <li>- amounts over the credit period;</li> <li>- disputed amounts; and</li> <li>- any other observable data indicating possible non-recovery.</li> </ul> <p>We considered impairment against trade receivables as a key audit matter because of the following:</p> <ul style="list-style-type: none"> <li>• The determination of impairment uses significant judgements coupled with the fact that compliance with International Financial Reporting Standard 9 <i>Financial Instruments</i>; and</li> <li>• Economic fundamentals in Zambia and Zimbabwe together with other factors may impact on the ability of customers to pay.</li> </ul>	<ul style="list-style-type: none"> <li>• Performing a retrospective review of the provision previously raised against the subsequent write-offs.</li> <li>• Testing the collection of subsequent receipts received after year-end.</li> <li>• Performing an independent assessment of the provision taking into account the factors above.</li> </ul> <p>We found the determined provision for doubtful debts to be acceptable.</p> <p>Based on the testing undertaken, the presentation and disclosures in respect of the trade receivables balance are consistent with the requirements of IFRS Accounting Standards.</p>

### Other information

The Directors are responsible for the other information. The other information comprises the Directors' Report, Statement of Director's Responsibilities, Appendix I - Statement of Capital Expenditure Compared to Budget, Appendix II – Country Statement of income and expenditure, Appendix III - SIDA Grant and IDA Loan–Designated Account Replenishments Applications and Appendix IV - Kariba Dam Rehabilitation Project (KDRP) Funding Source and Application Analysis, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express an audit opinion or any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report the fact, We have nothing to report in this regard.

### Responsibilities of Directors for the Financial Statements

The Directors are responsible for the preparation and fair presentation of the financial statements in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board and the requirements of the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe. and for such internal control as the Directors determine is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Authority or to cease operations, or have no realistic alternative but to do so.

The Directors are responsible for overseeing the Authority's reporting process.



## Auditor's responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Directors.
- Conclude on the appropriateness of the Directors' use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Directors, we determine those matters that were of most significance in the audit of the annual financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

**Report on other legal and regulatory requirements**

The Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe. requires that in carrying out our audit we consider whether the Authority has kept proper accounting records and other records and other registers required by this Act.

In respect of the foregoing requirements, we have no matters to report.



**Deloitte & Touche**  
**Chartered Accountants**



**Alice Jere Tembo**  
**Partner**  
**PC No.: AUD/F000433**

**Date: 23<sup>rd</sup> June 2025**



## ANNUAL FINANCIAL STATEMENTS

### Statement of Income and Expenditure and other Comprehensive Income

	Notes	2024		2023	
		ZMW'000	US\$'000	ZMW'000	US\$'000
Revenue	4	395,575	14,947	421,660	20,706
Other income	5	33,767	1,275	8,427	413
Fair value gain on financial assets through profit or loss	13	1,211	43	435	21
Impairment of financial assets	20	(91,270)	(3,449)	(216,238)	(10,619)
Depreciation property, plant and equipment	8	(112,468)	(4,250)	(78,899)	(3,875)
Depreciation investment property	9	(1,043)	(39)	(802)	(39)
Amortisation of intangible assets	10	(5,528)	(209)	(4,209)	(207)
Employee benefit expense	7	(227,180)	(8,584)	(170,103)	(8,353)
Governance costs		(17,336)	(655)	(15,860)	(779)
Administration and travel costs		(145,722)	(5,506)	(107,328)	(5,270)
Other operating expenses		(30,852)	(1,166)	(22,388)	(1,099)
<b>Results from operating activities</b>		<b>(200,846)</b>	<b>(7,593)</b>	<b>(185,305)</b>	<b>(9,101)</b>
Finance income	6	68,990	2,607	97,002	4,763
Finance costs	6	(53,767)	(2,032)	(29,056)	(1,427)
Deficit for the year		<b>15,223</b>	<b>575</b>	<b>67,946</b>	<b>3,336</b>
		<b>(185,623)</b>	<b>(7,018)</b>	<b>(117,359)</b>	<b>(5,765)</b>
Other comprehensive income (loss) for the year					
Items that will be subsequently reclassified to profit or loss:					
Exchange differences on translation		417,251	-	1,400,405	-
Net Revaluation loss		(62,230)	(2,217)	-	-
<b>-Total other comprehensive income (loss)</b>		<b>169,398</b>	<b>(2,217)</b>	<b>1,283,046</b>	<b>-</b>
<b>Total comprehensive income (loss) for the year</b>		<b>169,398</b>	<b>(9,235)</b>	<b>1,283,046</b>	<b>(5,765)</b>

The notes on pages 79 to 111 are an integral part of these annual financial statements.

## Statement of Financial Position

	Notes	As at 31 December		
		2024		2023
		ZMW'000	US\$'000	ZMW'000
				US\$'000
<b>Non - current assets</b>				
Property, plant and equipment	8	7,808,626	281,059	6,338,341
Investment property	9	33,528	1,194	31,706
Intangible assets	10	9,387	334	13,974
Long term investments	11	41,897	1,492	76,763
Other receivables	14	649,970	23,151	959,406
<b>Total non current assets</b>		<b>8,543,408</b>	<b>307,230</b>	<b>7,420,190</b>
<b>Current assets</b>				
Inventory	12	5,092	181	4,768
Financial assets at fair value through profit or loss	13	27,804	990	19,555
Trade and other receivables	14	919,443	29,820	681,906
Cash and cash equivalents	15	570,795	20,331	324,346
<b>Total current assets</b>		<b>1,523,134</b>	<b>51,322</b>	<b>1,030,575</b>
<b>Total assets</b>		<b>10,066,542</b>	<b>358,552</b>	<b>8,450,765</b>
<b>Funds and liabilities</b>				
Revaluation reserve		1,888,716	67,273	1,851,326
Translation reserve		1,756,963	-	1,508,967
Revenue reserve		1,211,540	105,732	1,327,528
<b>Total reserves</b>		<b>4,857,219</b>	<b>173,005</b>	<b>4,687,821</b>
<b>Non-current liabilities and grants</b>				
Borrowings	16	1,083,334	38,587	727,165
Capital grants	18	3,496,605	124,543	2,725,994
<b>Total non current liabilities and grants</b>		<b>4,579,939</b>	<b>163,130</b>	<b>3,453,159</b>
<b>Current liabilities</b>				
Trade and other payables	17	629,384	22,417	309,785
<b>Total current liabilities</b>		<b>629,384</b>	<b>22,417</b>	<b>309,785</b>
<b>Total funds and liabilities</b>		<b>10,066,542</b>	<b>358,552</b>	<b>8,450,765</b>
				<b>328,523</b>

Statement of Financial Position (continued)

The annual financial statements on pages 73 to 111 were approved for issue by the Board of Directors on 9th June 2025 and signed on its behalf by:



Chairperson



Co – Chairperson

The notes on pages 79 to 111 are an integral part of these annual financial statements.



## Statement of changes in reserves (ZMW)

	Revaluation reserve ZMW'000	Translation reserve ZMW'000	Revenue reserve ZMW'000	Total reserves ZMW'000
<b>Balance at 1 January 2023</b>	1,348,299	675,391	1,381,085	3,404,775
Deficit for the year	-	-	(117,359)	(117,359)
<u>Other comprehensive income (loss) for the year</u>				
Exchange differences on translation	566,829	833,576	-	1,400,405
<u>Total comprehensive income (loss) for the year</u>	566,829	833,576	(117,359)	1,283,046
Amortisation of revaluation reserve	(63,802)	-	63,802	-
	503,027	833,576	(53,557)	1,283,046
<b>Balance at 1 January 2024</b>	1,851,326	1,508,967	1,327,528	4,687,821
Deficit for the year	-	-	(185,623)	(185,623)
<u>Other comprehensive income (loss) for the year</u>				
Exchange differences on translation	169,255	247,996	-	417,251
<u>Total comprehensive income (loss) for the year</u>	169,255	247,996	(185,623)	231,628
Revaluation adjustment	(62,230)			(62,230)
Amortisation of revaluation reserve	(69,635)	-	69,635	-
	37,390	247,996	(115,988)	169,398
<b>Balance at 31 December 2024</b>	<b>1,888,716</b>	<b>1,756,963</b>	<b>1,211,540</b>	<b>4,857,219</b>

## Statement of changes in reserves (US\$)

	Revaluation reserves US\$'000	Revenue reserve US\$'000	Total Reserves US\$'000
<b>Balance at 1 January 2023</b>	74,450	113,555	188,005
Deficit for the year	-	(5,765)	(5,765)
<u>Other comprehensive loss for the year</u>			
<u>Total comprehensive loss for the year</u>	-	(5,765)	(5,765)
Amortisation of revaluation reserve	(2,480)	2,480	-
Total comprehensive loss for the year	(2480)	(3,285)	(5,765)
<b>Balance at 1 January 2024</b>	71,970	110,270	182,240
Deficit for the year	-	(7,018)	(7,018)
<u>Other comprehensive loss for the year</u>			
<u>Total comprehensive loss for the year</u>	-	(7,018)	(7,018)
Revaluation adjustment	(2,217)	-	(2,217)
Amortisation of revaluation reserve	(2,480)	2,480	-
<u>Total comprehensive income loss for the year</u>	(4,697)	(4,538)	(9,235)
<b>Balance at 31 December 2024</b>	<b>67,273</b>	<b>105,732</b>	<b>173,005</b>

The notes on pages 79 to 111 are an integral part of these annual financial statements.



## Statement of cash flows

	2024		2023	
	ZMW'000	US\$'000	ZMW'000	US\$'000
<b>Cash inflow from operating activities</b>				
Operating result	(185,623)	(7,018)	(117,359)	(5,765)
Depreciation on property, plant and equipment	112,468	4,250	78,899	3,875
Depreciation on investment property	1,043	39	802	39
Amortisation of intangible assets	5,528	209	4,209	207
Impairment loss on trade and other receivables	91,270	3,449	216,238	10,619
(Gain) loss on disposal of assets	(4,610)	(174)	87	4
Interest received	(35,604)	(1,345)	(69,946)	(3,434)
Fair value gain on financial assets through profit and loss	(1,211)	(43)	(435)	(21)
Fair value write down on financial assets through profit and loss	-	-	1,005	49
Decrease (increase) in trade and other receivables	71,898	10,836	(798,800)	(2,052)
(Increase) decrease in inventories	(324)	4	(2,667)	(69)
Increase in accounts payables	319,598	10,376	198,436	5,892
Net unrealised exchange gains	32,489	1,228	9,375	460
<b>Cash generated from (used in) operations</b>	<b>406,922</b>	<b>21,811</b>	<b>(480,156)</b>	<b>9,804</b>
Interest received	35,604	1,345	69,946	3,434
<b>Net cash inflow (outflow) from operating activities</b>	<b>442,526</b>	<b>23,156</b>	<b>(410,210)</b>	<b>13,238</b>
<b>Investing activities</b>				
Purchase of property, plant and equipment	(1,088,671)	(41,136)	(620,297)	(30,460)
Purchase of intangible assets	-	-	(256)	(13)
Proceeds from disposal of property, plant and equipment	(1,640)	(62)	4	-
Proceeds from financial assets at fair value through profit and loss	5,087	192	6,363	312
Payments to purchase assets at fair value through profit and loss	(10,035)	(379)	(6,199)	(304)
<b>Net cash outflow on investing activities</b>	<b>(1,095,259)</b>	<b>(41,385)</b>	<b>(620,385)</b>	<b>(30,465)</b>

**Statement of cash flows (continued)****Financing activities**

Capital grants received

Proceeds from long-term loans

Loan repayment

**Net cash outflow on financing**

Changes in cash and cash equivalent

Effects of changes in exchange rates on cash held in foreign currencies

Cash and cash equivalents at start of year

**Cash and cash equivalents at end of year**

	2024		2023	
	ZMW'000	US\$'000	ZMW'000	US\$'000
	491,461	18,570	332,626	16,334
	122,247	11,271	125,643	6,170
	(36,918)	(1,395)	(5,939)	(292)
	<b>576,790</b>	<b>28,446</b>	<b>452,330</b>	<b>22,212</b>
	(75,943)	10,217	(578,265)	4,985
	322,392	(2,495)	758,794	(317)
	324,346	12,609	143,817	7,941
	<b>570,795</b>	<b>20,331</b>	<b>324,346</b>	<b>12,609</b>

The notes on pages 79 to 111 are an integral part of these annual financial statements.



# NOTES TO THE ANNUAL FINANCIAL STATEMENTS

## 1. General information

The Zambezi River Authority (“the Authority”) is mandated to manage the Zambezi River, which flows between Zambia and Zimbabwe, the two contracting states’ common borders. The Authority is also charged with the responsibility to maintain the Kariba Dam Complex (Kariba Complex) and construct and maintain other dams or infrastructure on the river forming the border between the two states. Its registered Head Office is:

Kariba House  
32 Cha Cha Cha Road  
P O Box 30233  
Lusaka, Zambia.

## 2. Summary of material accounting policy information

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all years presented, unless otherwise stated.

### (a) Basis of preparation

The annual financial statements of Zambezi River Authority have been prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and the requirements of the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe.

The measurement basis applied is the historical cost basis, as modified by the revaluation of buildings and financial assets at fair value through profit or loss. The annual financial statements are presented in United States Dollars (US\$), Zambia Kwacha (“ZMW” or “K”) and in Zimbabwe Gold (“ZWG”) rounded to the nearest US; Zimbabwean dollar or Kwacha.

In accordance with the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe, the annual financial statements for the period ended 31 December 2024 have been approved for issue by the Directors.

The preparation of annual financial statements in conformity with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) requires the use of certain critical accounting estimates. It also requires the Directors to exercise judgement in the process of applying the Authority’s accounting policies. The areas involving a higher degree of judgement or complexity, or where assumptions and estimates are significant to the annual financial statements, are disclosed in Note 3.

### (b) Going concern

The Directors have assessed the going concern status of the Authority paying particular attention to two key risk factors that have affected Authority operations over the years namely, drought induced low reservoir levels and the continued build-up of accounts receivable due to failure by ZESCO Limited and Kariba Hydro Power Company (“KHPC”) to fully settle monthly water sales invoices.

Despite the Authority having recorded deficits, current year US\$7.018 million (2023: US\$5.765 million) due to the aforementioned risk factors i.e. drought induced low water levels of 16 billion cubic metres of water (2023: 30 billion cubic metres) and high impairment charges on accounts receivable US\$3.449 million (2023:10.619 million), the Directors posit that the high balance of reserves of US\$ 74.794 million net of impairment charges (2023:US\$79.400 million) are sufficient to assure the Authority’s operational existence into the foreseeable future. Additionally, interventions have been put in place which include inclusion of enhanced debt collection mechanisms in the tripartite Water Purchase Agreement and continuous engagements with ZESCO Limited and KHPC, the results of which are the recorded improvements in liquidity.

**2. Summary of material accounting policy information (Continued)****(b) Going concern (continued)**

On the hydrological side, the improved rainfall performance has resulted in the projected water allocation for 2025 being pegged at 27 billion cubic metres of water up from 16 billion Cubic Metres allocated in 2024 representing a 69% increase in water available for sale.

Accordingly, the financial statements are prepared based on accounting policies applicable to a going concern. This basis presumes that funds will be available to finance full operations and that the realisation of assets and settlement of liabilities will occur in the ordinary course of the business.

**(c) Changes in accounting policy and disclosures***(i) New and amended standards adopted by the Authority*

In the current year, the Authority has applied a number of amendments to IFRS Accounting Standards issued by the International Accounting Standards Board (IASB) that are mandatorily effective for an accounting period that begins on or after 1 January 2024. Their adoption has not had any material impact on the disclosures or on the amounts reported in these financial statements.

The amendments listed below did not have any material impact on the amounts recognised in prior periods and are not expected to significantly affect the current or future period:

**Amendments to IAS 7 Statement of Cash flows and IFRS 7 financial instruments: Disclosures titled supplier finance arrangements**

The amendments add a disclosure objective to IAS 7 stating that an entity is required to disclose information about its supplier finance arrangements that enables users of financial statements to assess the effects of those arrangements on the entity's liabilities and cash flows. In addition, IFRS 7 is amended to add supplier finance arrangements as an example within the requirements to disclose information about an entity's exposure to concentration of liquidity risk.

Amendments to IAS 7 Statement of Cash flows and IFRS 7 financial instruments: Disclosures titled supplier finance arrangements

The amendments contain specific transition provisions for the first annual reporting period in which the Authority applies the amendments. Under the transitional provisions an entity is not required to disclose:

- comparative information for any reporting periods presented before the beginning of the annual reporting period in which the entity first applies those amendments.
- the information otherwise required by IAS 7:44H(b)(ii)–(iii) as at the beginning of the annual reporting period in which the entity first applies those amendments.

**Amendments to IAS 1 Classification of Liabilities as Current or Non-current**

The Authority has adopted the amendments to IAS 1, published in January 2020, for the first time in the current year.

The amendments affect only the presentation of liabilities as current or non-current in the statement of financial position and not the amount or timing of recognition of any asset, liability, income or expenses, or the information disclosed about those items.

**2. Summary of material accounting policy information (Continued)****(c) Changes in accounting policy and disclosures****(i) 2. New and amended standards adopted by the Authority (continued)****Amendments to IAS 1 Classification of Liabilities as Current or Non-current (continued)**

The amendments clarify that the classification of liabilities as current or non-current is based on rights that are in existence at the end of the reporting period, specify that classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability, explain that rights are in existence if covenants are complied with at the end of the reporting period, and introduce a definition of 'settlement' to make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services.

**Amendments to IAS 1 Presentation of Financial Statements—Non-current Liabilities with Covenants**

The Authority has adopted the amendments to IAS 1, published in November 2022, for the first time in the current year.

The amendments specify that only covenants that an entity is required to comply with on or before the end of the reporting period affect the entity's right to defer settlement of a liability for at least twelve months after the reporting date (and therefore must be considered in assessing the classification of the liability as current or non-current). Such covenants affect whether the right exists at the end of the reporting period, even if compliance with the covenant is assessed only after the reporting date (e.g. a covenant based on the entity's financial position at the reporting date that is assessed for compliance only after the reporting date).

The IASB also specifies that the right to defer settlement of a liability for at least twelve months after the reporting date is not affected if an entity only has to comply with a covenant after the reporting period. However, if the entity's right to defer settlement of a liability is subject to the entity complying with covenants within twelve months after the reporting period, an entity discloses information that enables users of financial statements to understand the risk of the liabilities becoming repayable within twelve months after the reporting period. This would include information about the covenants (including the nature of the covenants and when the entity is required to comply with them), the carrying amount of related liabilities and facts and circumstances, if any, that indicate that the entity may have difficulties complying with the covenants.

**Amendment to IFRS 16 Leases—Lease Liability in a Sale and Leaseback**

The Authority has adopted the amendments to IFRS 16 for the first time in the current year.

The amendments to IFRS 16 add subsequent measurement requirements for sale and leaseback transactions that satisfy the requirements in IFRS 15 Revenue from Contracts with Customers to be accounted for as a sale. The amendments require the seller-lessee to determine 'lease payments' or 'revised lease payments' such that the seller-lessee does not recognise a gain or loss that relates to the right of use retained by the seller-lessee, after the commencement date.

The amendments do not affect the gain or loss recognised by the seller-lessee relating to the partial or full termination of a lease. Without these new requirements, a seller-lessee may have recognised a gain on the right of use it retains solely because of a remeasurement of the lease liability (for example, following a lease modification or change in the lease term) applying the general requirements in IFRS 16. This could have been particularly the case in a leaseback that includes variable lease payments that do not depend on an index or rate.



**2 Summary of material accounting policy information (continued)****(c) Changes in accounting policy and disclosures (continued)****(i) New and amended standards adopted by the Authority (continued)****Amendment to IFRS 16 Leases—Lease Liability in a Sale and Leaseback (continued)**

As part of the amendments, the IASB amended an Illustrative Example in IFRS 16 and added a new example to illustrate the subsequent measurement of a right-of-use asset and lease liability in a sale and leaseback transaction with variable lease payments that do not depend on an index or rate. The illustrative examples also clarify that the liability that arises from a sale and leaseback transaction that qualifies as a sale applying IFRS 15 is a lease liability.

A seller-lessee applies the amendments retrospectively in accordance with IAS 8 to sale and leaseback transactions entered into after the date of initial application, which is defined as the beginning of the annual reporting period in which the entity first applied IFRS 16.

**(ii) New and amended standards not early adopted by the Authority**

At the date of authorisation of these financial statements, the Authority has not applied the following new and revised IFRS Accounting Standards that have been issued but are not yet effective.

Amendments to IAS 21	<i>Lack of Exchangeability</i>
IFRS 18	<i>Presentation and Disclosures in Financial Statements</i>
Amendments IFRS 9 and IFRS 7	<i>Amendments IFRS 9 and IFRS 7 regarding the classification and measurement of financial instruments</i>
Annual IFRS improvement Volume 11	<i>Annual Improvements to IFRS Accounting Standards — Volume 11</i>

The Directors do not expect that the adoption of the standards listed above will have a material impact on the financial statements of the Authority in future periods, except if indicated below.

**Amendments to IAS 21 The Effects of Changes in Foreign Exchange Rates titled Lack of Exchangeability**

The amendments specify how to assess whether a currency is exchangeable, and how to determine the exchange rate when it is not.

The amendments state that a currency is exchangeable into another currency when an entity is able to obtain the other currency within a time frame that allows for a normal administrative delay and through a market or exchange mechanism in which an exchange transaction would create enforceable rights and obligations.

An entity assesses whether a currency is exchangeable into another currency at a measurement date and for a specified purpose. If an entity is able to obtain no more than an insignificant amount of the other currency at the measurement date for the specified purpose, the currency is not exchangeable into the other currency.

The assessment of whether a currency is exchangeable into another currency depends on an entity's ability to obtain the other currency and not on its intention or decision to do so.

When a currency is not exchangeable into another currency at a measurement date, an entity is required to estimate the spot exchange rate at that date. An entity's objective in estimating the spot exchange rate is to reflect the rate at which an orderly exchange transaction would take place at the measurement date between market participants under prevailing economic conditions.

**2. Summary of material accounting policy information (continued)****(c) Changes in accounting policy and disclosures (continued)****(ii) New and amended standards not early adopted by the Authority (continued)****Amendments to IAS 21 The Effects of Changes in Foreign Exchange Rates titled Lack of Exchangeability (continued)**

The amendments do not specify how an entity estimates the spot exchange rate to meet that objective. An entity can use an observable exchange rate without adjustment or another estimation technique. Examples of an observable exchange rate include:

- a spot exchange rate for a purpose other than that for which an entity assesses exchangeability
- the first exchange rate at which an entity is able to obtain the other currency for the specified purpose after exchangeability of the currency is restored (first subsequent exchange rate).

An entity using another estimation technique may use any observable exchange rate—including rates from exchange transactions in markets or exchange mechanisms that do not create enforceable rights and obligations—and adjust that rate, as necessary, to meet the objective as set out above.

When an entity estimates a spot exchange rate because a currency is not exchangeable into another currency, the entity is required to disclose information that enables users of its financial statements to understand how the currency not being exchangeable into the other currency affects, or is expected to affect, the entity's financial performance, financial position and cash flows.

The amendments add a new appendix as an integral part of IAS 21. The appendix includes application guidance on the requirements introduced by the amendments. The amendments also add new Illustrative Examples accompanying IAS 21, which illustrate how an entity might apply some of the requirements in hypothetical situations based on the limited facts presented.

In addition, the IASB made consequential amendments to IFRS 1 to align with and refer to the revised IAS 21 for assessing exchangeability.

The amendments are effective for annual reporting periods beginning on or after 1 January 2025, with earlier application permitted. An entity is not permitted to apply the amendments retrospectively. Instead, an entity is required to apply the specific transition provisions included in the amendments.

The Directors of the Authority anticipate that the application of these amendments may have an impact on the Authority's financial statements in future periods.

**IFRS 18 Presentation and Disclosures in Financial Statements**

IFRS 18 replaces IAS 1, carrying forward many of the requirements in IAS 1 unchanged and complementing them with new requirements. In addition, some IAS 1 paragraphs have been moved to IAS 8 and IFRS 7. Furthermore, the IASB has made minor amendments to IAS 7 and IAS 33 Earnings per Share.

IFRS 18 introduces new requirements to:

- present specified categories and defined subtotals in the statement of profit or loss
- provide disclosures on management-defined performance measures (MPMs) in the notes to the financial statements
- improve aggregation and disaggregation

An entity is required to apply IFRS 18 for annual reporting periods beginning on or after 1 January 2027, with earlier application permitted. The amendments to IAS 7 and IAS 33, as well as the revised IAS 8 and IFRS 7, become effective when an entity applies IFRS 18. IFRS 18 requires retrospective application with specific transition provisions.

**2 Summary of material accounting policy information (continued)****(c) Changes in accounting policy and disclosures (continued)****(ii) New and amended standards not early adopted by the Authority (Continued)****Amendments IFRS 9 and IFRS 7 regarding the classification and measurement of financial instruments**

The International Accounting Standards Board (IASB) has issued 'Amendments to the Classification and Measurement of Financial Instruments (Amendments to IFRS 9 and IFRS 7) to address matters identified during the post-implementation review of the classification and measurement requirements of IFRS 9 'Financial Instruments.

The amendments clarify that a financial liability is derecognised on the 'settlement date' and introduce an accounting policy choice to derecognise financial liabilities settled using an electronic payment system before the settlement date.

The amendments to IFRS 9 and IFRS 7 are effective for accounting periods beginning on or after 1 January 2026 and the Directors do not anticipate that its adoption will result into material impact on the financial statements.

**Annual Improvements to IFRS Accounting Standards – Volume 11**

The IASB issued Annual Improvements to IFRS Accounting Standards — Volume 11

Standard	The amendment
IFRS 1 First-time Adoption of International Financial Reporting Standards	Hedge accounting by a first-time adopter. The amendment addresses a potential confusion arising from an inconsistency in wording between paragraph B6 of IFRS 1 and requirements for hedge accounting in IFRS 9 Financial Instruments.
IFRS 7 Financial Instruments: Disclosures	Gain or loss on derecognition. The amendment addresses a potential confusion in paragraph B38 of IFRS 7 arising from an obsolete reference to a paragraph that was deleted from the standard when IFRS 13 Fair Value Measurement was issued.
IFRS 7 Financial Instruments: Disclosures (implementation guidance only)	Disclosure of deferred difference between fair value and transaction price. The amendment addresses an inconsistency between paragraph 28 of IFRS 7 and its accompanying implementation guidance that arose when a consequential amendment resulting from the issuance of IFRS 13 was made to paragraph 28, but not to the corresponding paragraph in the implementation guidance.  Introduction and credit risk disclosures. The amendment addresses a potential confusion by clarifying in paragraph IG1 that the guidance does not necessarily illustrate all the requirements in the referenced paragraphs of IFRS 7 and by simplifying some explanations.
IFRS 9 Financial Instruments	Lessee derecognition of lease liabilities. The amendment addresses a potential lack of clarity in the application of the requirements in IFRS 9 to account for an extinguishment of a lessee's lease liability that arises because paragraph 2.1(b)(ii) of IFRS 9 includes a cross-reference to paragraph 3.3.1, but not also to paragraph 3.3.3 of IFRS 9.  Transaction price. The amendment addresses a potential confusion arising from a reference in Appendix A to IFRS 9 to the definition of 'transaction price' in IFRS 15 Revenue from Contracts with Customers while term 'transaction price' is used in particular paragraphs of IFRS 9 with a meaning that is not necessarily consistent with the definition of that term in IFRS 15.



**(d) Foreign currency translation***(i) Functional and presentation currency*

The Authority as a bi national institution has operations in both Zambia and Zimbabwe and the presentation currency is the respective currencies of the two Contracting States which are, the Zimbabwe Dollar ("ZWG") and, the Zambian Kwacha. The functional and reporting currency of the Authority is the United States Dollar.

Income statement items have been translated into the presentation currencies using the average exchange rate for the year as an approximation to the actual exchange rate. Assets and liabilities have been translated using the closing exchange rate. Any differences arising from this process have been recognised in other comprehensive income and accumulated in the foreign exchange reserve in equity.

*(i) Functional and presentation currency (Continued)*

Equity items have been translated at the closing exchange rate. Exchange differences arising on retranslating equity items and opening net assets have been transferred to the foreign exchange reserve within equity.

*(ii) Transactions and balances*

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuations where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents are presented in income and expenditure within 'finance income or cost'. All other foreign exchange gains and losses are presented in income or expenditure within 'other income or expenses'.

**(e) Revenue recognition**

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and services in the ordinary course of the Authority's activities.

The Authority identifies contracts with customers, the performance obligations within it, the transaction price, and its allocation to the performance obligations. Revenue is recognised when control of the product passes to the

customer and is measured based on expected consideration. It is the Authority's policy to recognise revenue from a contract when it has been approved by both parties, rights have been clearly identified, payment terms have been defined, the contract has commercial substance, and collectability has been ascertained as probable.

Collectability of customer's payments is ascertained based on the customer's historical records, guarantees provided, the customer's industry and advance payments made if any.

Water sales revenue is a product of the following:

- Water used as measured using flow meter equipment
- The agreed annual fixed charge
- The variable charge

**Disaggregation of revenue from contract with customers**

**2. Summary of material accounting policy information (continued)****(e) Revenue recognition (continued)****Disaggregation of revenue from contract with customers (continued)**

The Authority has determined that the disaggregation of revenue based on the criteria of type of products meets the revenue disaggregation disclosure requirement of IFRS 15 as it depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. See further details in note 4.

**(f) Other income**

Other income is recognised on an accruals basis in accordance with the substance of the relevant agreements.

**(g) Interest income**

Interest income is recognised using the effective interest method.

**(h) Rental income**

Rental income from properties is recognised in the income and expenditure on a straight-line basis over the term of the relevant lease agreement.

**(i) Property, plant, and equipment**

Land and buildings are recognised at fair value based on periodic, but at least triennial, valuations by external independent valuers, less subsequent depreciation for buildings. A revaluation surplus is credited to revaluation reserve. All other property, plant and equipment is stated at historical cost less accumulated depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Construction work in progress is carried at cost and is not depreciated until the asset is brought into use.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Authority and the cost of the item can be measured reliably. The carrying amount of any component accounted for as a separate asset is derecognised when replaced. All other repairs and maintenance are charged to income and expenditure during the reporting period in which they are incurred.

Increases in the carrying amounts arising on revaluation of buildings are recognised in other comprehensive income and accumulated in the revaluation reserve. To the extent that the increase reverses a decrease previously recognised in income and expenditure, the increase is first recognised in income and expenditure. Decreases that reverse previous increases of the same asset are first recognised in other comprehensive income to the extent of the remaining surplus attributable to the asset; all other decreases are charged to income and expenditure. Each year, the difference between depreciation based on the revalued carrying amount of the asset charged to income and expenditure and depreciation based on the asset's original cost is reclassified from the property, plant, and equipment revaluation surplus to revenue reserve.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost or revalued amounts to their residual values over their estimated useful lives, as follows:

Buildings	2.5%
Kariba Dam Complex	2.5%
Motor Vehicles	25%
Equipment and Machinery	10 - 20%
Furniture and Fittings	20%
Computers	25%
Intangible Assets	25%

**2) Summary of material accounting policy information (continued)****(i) Property, plant, and equipment (continued)**

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Property, plant, and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units).

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are included in income and expenditure. When revalued assets are sold, the amounts included in the revaluation reserve relating to that asset are transferred to retained earnings.

**(j) Investment property**

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the Authority is classified as investment property. Investment property also includes property that is being constructed or developed for future use as investment property.

All investment property is stated at historical cost less accumulated depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items. Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the

expenditure will flow to the Authority and the cost of the item can be measured reliably. All other repairs and maintenance costs are expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

Depreciation on investment property is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives over 40 years.

Investment properties are derecognised when they have been disposed. If an investment property becomes owner-occupied, it is reclassified as property, plant, and equipment. Its fair value at the date of reclassification becomes its cost for subsequent accounting purposes.

If an item of owner-occupied property becomes an investment property because its use has changed, any difference resulting between the carrying amount and the fair value of this item at the date of transfer is

treated in the same way as a revaluation under IAS 16. Any resulting increase in the carrying amount of the property is recognised in income statement to the extent that it reverses a previous impairment loss, with any remaining increase recognised in other comprehensive income and increase directly to equity in revaluation surplus within equity. Any resulting decrease in the carrying amount of the property is initially charged in other comprehensive income against any previously recognised revaluation surplus, with any remaining decrease charged to income and expenditure.

**(k) Intangible assets**

Intangible assets are separately identifiable non monetary assets without physical substance such as computer software. The Authority initially recognises intangible assets at cost and subsequently measures them at cost less accumulated amortisation and impairment losses save for instances where the asset has an indefinite life.

Intangible assets with an indefinite life are not amortised, however their useful life should be reviewed at each reporting period to determine whether events and circumstances continue to support an



**2 Summary of material accounting policies (continued)****(k) Intangible assets (continued)**

indefinite useful life assessment for the assets. If they do not, the change in the useful life assessment from indefinite to finite is accounted for as a change in an accounting estimate.

Intangible assets with a finite useful life are amortised on a straight line basis and in the case of software, the estimated useful life is four (4) years. Subsequent expenditure relating to intangible assets such as annual license fees is expensed to the profit and loss.

**(l) Inventories**

Inventories are stated at the lower of cost and net realisable value. Cost is determined using the average cost method. Net realisable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses.

**(m) Financial instruments**

Financial instruments comprise trade and other receivables (excluding prepayments), long term investments, financial assets at fair value through profit or loss, cash and cash equivalents, borrowings, other non-current liabilities (excluding provisions) and trade and other payables.

Financial assets and liabilities are recognised in the Authority's statement of financial position when the Authority becomes a party to the contractual provisions of the instruments.

All financial assets and liabilities are initially measured at fair value, including transaction costs except for those classified as at fair value through profit or loss which are initially measured at fair value, excluding transaction costs. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognised immediately in income and expenditure. Financial assets are recognised (derecognised) on the date the Authority commits to purchase (sell) the instruments (trade date accounting).

Financial assets and liabilities are classified as current if expected to be realised or settled within 12 months; if not, they are classified as non-current.

**(i). Offsetting financial instruments**

Offsetting of financial assets and liabilities is applied when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. The net amount is reported in the statement of financial position.

**(ii). Financial instrument classification**

The Authority classifies financial assets on initial recognition as measured at amortised cost, or fair value through profit or loss on the basis of the Authority's business model for managing the financial asset and the cash flow characteristics of the financial asset. The Authority classifies its financial instruments into the following categories:

**(iii) Amortised cost**

The asset is held within a business model with the objective to collect the contractual cash flows; and the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding.

Financial assets are not reclassified unless the Authority changes its business model. In rare circumstances where the Authority does change its business model, reclassifications are done prospectively from the date that the Authority changes its business model.

**2) Summary of material accounting policy information (continued)****(m) Financial instruments (continued)****(iii) Amortised cost (continued)**

Financial liabilities are classified as measured at amortised cost.

**(iv). Subsequent measurement**

Subsequent to initial recognition, financial instruments are measured as described below.

Financial assets at fair value through profit and loss: These financial assets are subsequently measured at fair value and changes therein (including any interest or dividend income) are recognised in income and expenditure.

**(v). Subsequent measurement (Continued)**

Financial assets at amortised cost: These financial assets are subsequently measured at amortised cost using the effective interest method, less any impairment losses. Interest income, foreign exchange gains and losses and impairments are recognised in income and expenditure. Any gain or loss on derecognition is recognised in income and expenditure.

Financial liabilities comprise trade and other payables, grants, borrowings, and other non-current liabilities (excluding provisions). All financial liabilities are subsequently measured at amortised cost using the effective interest method.

**(vi). De-recognition**

Financial assets are derecognised when the rights to receive cash flows from the assets have expired or have been transferred and the Authority has transferred substantially all risks and rewards of ownership. Financial liabilities are derecognised when the obligations specified in the contracts are discharged, cancelled, or expires.

**(iv). Substantial modification**

A substantial modification of the terms of an existing debt instrument or part of it is accounted for as an extinguishment of the original debt instrument and the recognition of a new debt instrument. Substantial modification (continued). Gains or losses arising from the modification of the terms of a debt instrument are recognised immediately in income and expenditure where the modification does not result in the derecognition of the existing instrument.

**(v). Impairment**

Under IFRS 9 the Authority calculates allowance for credit losses as expected credit losses (ECL's) for financial assets measured at amortised cost and contract assets. ECL's are a probability weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Authority expects to receive). ECLs are discounted at the original effective interest rate of the financial asset

The Authority applies the simplified approach to determine the ECL for trade receivables and contract assets. This results in calculating lifetime expected credit losses for trade receivables and contract assets. ECL for trade receivables is calculated using a provision matrix. Refer to note 22 for more detail about ECL and how this is calculated.

**2) Summary of material accounting policy information (continued)****(n) Trade receivables**

Trade receivables are amounts due from customers for services rendered in the ordinary course of business. If collection is expected in one year or less (or in the normal operating cycle of the business if longer), they are classified as current asset. If not, they are presented as non-current assets.

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method less provision for impairment.

**(o) Cash and cash equivalents**

Cash and cash equivalents include cash in hand, deposits held at call with banks, other short term highly liquid investments with original maturities of three months or less.

**(p) Borrowings**

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognised in income and expenditure over the period of the borrowings using the effective interest method. Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalised as a prepayment for liquidity services and amortised over the period of the facility to which it relates.

Borrowings are removed from the statement of financial position when the obligation specified in the contract is discharged, cancelled or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in income and expenditure as other income or finance costs.

Borrowings are classified as current liabilities unless the Authority has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale. Other borrowing costs are expensed in the period in which they are incurred.

**(q) Trade payables**

These amounts represent liabilities for goods and services provided to the Authority prior to the end of financial year which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition. Trade and other payables are presented as current liabilities unless payment is not due within 12 months after the reporting period. They are recognised initially at their fair value and subsequently measured at amortised cost using the effective interest method.

**(r) Employee benefits****(i) Retirement benefit obligations**

The Authority subscribes to defined contribution schemes for the benefit of its permanent and pensionable staff. The funds are managed by Prudential Life Assurance for the Zambian employees and Zimnat Life Assurance for the Zimbabwean employees. Both funds are overseen by a Board of Trustees composed of management and employee representative Trustees.



## 2 Summary of material accounting policy information (continued)

### (r) Employee benefits (Continued)

#### (i) Retirement benefit obligations (continued)

A defined contribution plan is a pension plan under which the Authority pays fixed contributions into a separate entity. The Authority has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods.

The Authority's contributions to the defined contribution schemes are charged to income and expenditure in the period to which they relate. The Authority has no further obligation once contributions have been paid.

The Authority and all its employees contribute to the appropriate National Social Security Funds in the two Contracting States, which are defined contribution schemes.

#### (ii) Termination benefits

Termination benefits are payable when employment is terminated by the Authority before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Authority recognises termination benefits at the earlier of the following dates: (a) when the Authority can no longer withdraw the offer of those benefits; and (b) when the entity recognises costs for a restructuring that is within the scope of IAS 37 and involves the payment of termination benefits.

In the case of an offer made to encourage voluntary redundancy, the termination benefits are measured based on the number of employees expected to accept the offer.

### (s) Grants

Grants are not recognised until there is reasonable assurance that the Authority will comply with the conditions attaching to them and that the grants will be received. Grants whose primary condition is that the Authority should purchase, or otherwise acquire non-current assets are recognised as capital grants in the statement of financial position and transferred to income and expenditure on a systematic and rational basis over the useful lives of the related assets. Other grants are recognised as deferred revenue over the periods necessary to match them with the costs for which they are intended to compensate, on a systematic basis.

Compensations for expenses or losses already incurred or for the purpose of giving immediate financial support to the Authority with no future related costs are recognised in income and expenditure in the period in which they become receivable.

### (t) Income tax

The Authority is exempted from paying taxes on capital, income, or profit under Articles 17 and 19 of the Zambezi River Authority Acts Chapters 467 and 20:23 of the Laws of Zambia and Zimbabwe respectively. As such no allowance is made for current or deferred taxes.

### 3. Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Critical estimates made include the following:

#### *Buildings*

The Authority owns land and buildings classified either as residential or commercial properties. The said properties are carried at valuation with the valuation exercise performed triannually. The valuation is conducted by professional external valuers, who apply various techniques that consider among other things:

- Location
- Value of surrounding properties
- Impact of planned investments in the area

The land and buildings were revalued in 2024 using the sales comparison approach based on recent sales of comparable properties in the area.

#### *Impairment of trade receivables*

IFRS 9 requires that credit losses on financial assets be measured and recognised using the expected credit loss (ECL) approach. Credit loss is calculated as the difference between the carrying amount of the contractual cash flows and the present value (PV) of expected future cash flows over a period of 5 years for KHPC and 6 years for ZESCO Limited.

The Authority applies the simplified approach to determine the Expected Credit Losses (ECL) for trade receivables and contract assets. ECL's are a probability weighted estimates of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Authority expects to receive). ECLs are discounted at the original effective interest rate of the financial asset.

The expected cash flows are based on the historical payment pattern of the debtors. The present values have been discounted at the opportunity cost market borrowing average rate of 15% obtaining in the two Contracting States.

**4 Revenue from contracts with customers**

	<b>2024</b>		<b>2023</b>	
	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Water sales variable charge	222,238	8,397	288,283	14,156
Water sales fixed charge	173,337	6,550	133,377	6,550
	<u>395,575</u>	<u>14,947</u>	<u>421,660</u>	<u>20,706</u>

All the revenues of the Authority are recognised at a point in time.

**a) Water sales**

The Authority uses a formula for the sale of water to ZESCO Limited ('ZESCO') and Kariba Hydro Power Company (Pvt) Limited ('KHPC') which was adopted in 1998. The formula was derived to ensure the costs associated with the operations of the Authority were covered by the fees charged to ZESCO Limited and KHPC (Pvt) Limited.

The fees chargeable are based on a tariff contained in a Tripartite Water Purchase Agreement (WPA) signed between the Authority and the two Power Utility companies. The tariff comprises a fixed and variable charge. The variable charge, is a function of the volume of water utilised for power generation measured in cubic meters. The Tripartite Water Purchase Agreement is reviewed every three years. The last review was at the end of 2021 and maintained the tariff at the 2021 level for the years 2022 to 2024.

**b) Water allocation**

During the year ended 31 December 2024, the Authority allocated a total of 16  $\text{bm}^3$  of water to be shared equally between the KHPC (Pvt) Limited and ZESCO Limited (The Power Utilities) for purposes of power generation. The Power Utilities' combined usage in the year was 17.75  $\text{bm}^3$  representing a utilisation rate of 111%. KHPC (Pvt) Limited utilised 8.42  $\text{bm}^3$  whereas, ZESCO Limited utilised 9.33  $\text{bm}^3$ . Accordingly, an overutilisation penalty of US\$ 927,357 was charged on ZESCO Limited have exceeded allocation by 16.63% as per the provisions of the Tripartite Water Purchase Agreement.

**c) Over utilisation**

When there is over utilisation of water above annual base allocation, the following penalties apply;

- Over utilisation by up to 5% of annual allocation, no penalty shall be chargeable.
- Over utilisation of up to 20% of annual allocation, extra volume shall be charged at a water tariff in US\$/ $\text{m}^3$  x 1.5.
- Over utilization by over 20% of annual allocation, extra volume shall be charged at a water tariff in US\$/ $\text{m}^3$  x 2.

**5 Other income**

	<b>2024</b>		<b>2023</b>	
	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Rent received from investment properties	2,394	90	1,824	90
Profit on disposal of property, plant, and equipment	4,610	174	4	-
Miscellaneous income	1,262	48	6,119	300
Sale of data	-	-	3	-
Toll fees	580	22	477	23
Overutilisation penalty	24,543	927	-	-
Plant hire charges	378	14	-	-
	<u>33,767</u>	<u>1,275</u>	<u>8,427</u>	<u>413</u>



**6 Finance income**

	ZMW'000	US\$'000	ZMW'000	US\$'000
<b>Finance income</b>				
Interest on overdue accounts	5,650	213	59,489	2,921
Interest on term deposits	20,174	762	6,459	317
Interest on staff housing loans	-	-	-	-
Interest on staff car loans	10,329	390	3,644	179
Interest on furniture loans	514	19	354	17
Unrealised gain exchange rate	32,323	1,222	27,056	1,329
	<u>68,990</u>	<u>2,607</u>	<u>97,002</u>	<u>4,763</u>
<b>Finance cost</b>				
Exchange loss on cash and cash equivalents	(53,767)	(2,032)	(29,056)	(1,427)
<b>Net finance income</b>	<u>15,223</u>	<u>575</u>	<u>67,946</u>	<u>3,336</u>

Interest on overdue accounts relates to interest charged on amounts owed by the two Power Utility companies the two Power Utility companies as part of the terms of the payment plans, interest is only levied on the Power Utility company that fails to abide by the said payment plan.

Interest on term deposits relates to interest earned on funds placed with various financial institutions. The funds are placed in investments while awaiting completion of procurement processes and also as a sinking fund to meet project related payments including servicing of the Kariba dam rehabilitation loans. The interest earned on the deposits in the period under review ranged from 4% and 7.5%.

Interest on employee related loans i.e. car loans and furniture loans is earned at a rate of 6% on amounts loaned out to employees.

**7 Employee benefits expense**

	ZMW'000	US\$'000	ZMW'000	US\$'000
Salaries and wages	172,305	6,511	131,658	6,465
Pension	11,446	432	9,655	474
Gratuity	12,186	460	8,890	437
Other employment costs	31,243	1,181	19,900	977
	<u>227,180</u>	<u>8,584</u>	<u>170,103</u>	<u>8,353</u>

**8 Property, plant, and equipment**

	<b>Kariba Dam Complex</b>	<b>Land and buildings</b>	<b>Motor vehicles, Furniture &amp; fittings</b>	<b>Capital work in progress</b>	<b>Total</b>
	<b>ZMW'000</b>	<b>ZMW'000</b>	<b>ZMW'000</b>	<b>ZMW'000</b>	<b>ZMW'000</b>
<b>At 1 January 2023</b>					
Cost or valuation	1,120,763	103,219	138,416	2,096,088	3,458,486
Accumulated depreciation	(431,891)	(4,709)	(122,163)	-	(558,763)
Effects of foreign exchange difference	541,449	54,947	16,019	468,815	1,081,230
<b>Net book amount</b>	<b>1,230,321</b>	<b>153,457</b>	<b>32,272</b>	<b>2,564,903</b>	<b>3,980,953</b>
Opening net book amount	1,230,321	153,457	32,272	2,564,903	3,980,953
Additions	-	-	25,840	594,457	620,297
Revaluation adjustment - Elimintaion of depreciation	-	-	(91)	-	(91)
Depreciation charge	(60,150)	(5,330)	(13,419)	-	(78,899)
Effects of foreign exchange difference	501,417	63,110	16,836	1,234,718	1,816,081
	<b>1,671,588</b>	<b>211,237</b>	<b>61,438</b>	<b>4,394,078</b>	<b>6,338,341</b>
<b>At 31 December 2023</b>					
Closing net book amount	1,120,763	103,219	164,165	2,690,545	4,078,692
Accumulated depreciation	(492,041)	(10,039)	(135,582)	-	(637,661)
Effects of foreign exchange difference	1,042,866	118,057	32,855	1,703,533	2,897,311
<b>Net book amount</b>	<b>1,671,588</b>	<b>211,237</b>	<b>61,438</b>	<b>4,394,078</b>	<b>6,338,341</b>
<b>Year ended 31 Decmber 2024</b>					
Opening net book amount	1,671,588	211,237	61,438	4,394,078	6,338,341
Additions	-	-	20,021	1,068,650	1,088,671
Transfers from WIP	1,528,379	2,195	4,236	(1,534,666)	144
Scrapping/Disposal – cost	-	(460)	-	-	(460)
Revaluation adjustment-Cost	-	(78,258)	-	-	(78,258)
Revaluation – Elimination of Depreciation	-	19,597	-	-	19,597
Depreciation charge	(84,103)	(6,983)	(21,382)	-	(112,468)
Effects of foreign exchange difference	240,685	15,428	5,793	291,152	553,058
<b>Closing net book amount</b>	<b>3,356,549</b>	<b>162,756</b>	<b>70,106</b>	<b>4,219,214</b>	<b>7,808,626</b>
Cost or valuation	2,649,142	26,696	188,423	2,224,529	5,088,790
Accumulated depreciation	(576,144)	2,575	(156,964)	-	(730,533)
Effects of foreign Exchange differences	1,283,551	133,485	38,648	1,994,685	3,450,369
<b>Net book amount</b>	<b>3,356,549</b>	<b>162,756</b>	<b>70,107</b>	<b>4,219,214</b>	<b>7,808,626</b>

**8 Property, plant, and equipment (continued)**

	<b>Kariba Dam Complex</b>	<b>Land and buildings</b>	<b>Motor vehicles &amp; Furniture &amp; fittings</b>	<b>Capital work in progress</b>	<b>Total</b>
	<b>US\$'000</b>	<b>US\$'000</b>	<b>US\$'000</b>	<b>US\$'000</b>	<b>US\$'000</b>
<b>As at 1 January 2023</b>					
Cost or valuation	101,152	8,736	11,460	141,629	262,977
Accumulated depreciation	(33,216)	(262)	(9,678)	-	(43,156)
Net book amount	67,936	8,474	1,782	141,629	219,821
<b>Year ended 31 December 2023</b>					
Opening net book amount	67,936	8,474	1,782	141,629	219,822
Additions	-	-	1,269	29,191	30,460
Scrapping/Disposal	-	-	(4)	-	(4)
Depreciation charge	(2,954)	(262)	(659)	-	(3,875)
Closing net book amount	64,982	8,212	2,388	170,820	246,402
<b>At 31 December 2023</b>					
Cost or valuation	101,152	8,736	12,725	170,820	293,433
Accumulated depreciation	(36,170)	(524)	(10,337)	-	(47,031)
Net book amount	64,982	8,212	2,388	170,820	246,402
<b>Year ended 31 December 2024</b>					
Opening net book amount	64,982	8,212	2,388	170,820	246,402
Additions	-	-	757	40,379	41,136
Transfers from WIP	57,750	83	160	(57,988)	5
Scrapping/Disposal – cost	-	(17)	-	-	(17)
Scrapping adjustment	-	-	-	-	-
Revaluation adjustment-Cost	-	(2,957)	-	-	(2,957)
Revaluation – Elimination of Depreciation	-	740	-	-	740
Depreciation charge	(3,178)	(264)	(808)	-	(4,250)
Closing net book amount	119,554	5,797	2,497	153,211	281,059
<b>At 31 December 2024</b>					
Cost or valuation	158,902	5,845	13,642	153,211	331,600
Accumulated depreciation	(39,348)	(48)	(11,145)	-	(50,541)
Net book amount	119,554	5,797	2,497	153,211	281,059

The Authorities' head office building and residential properties were revalued as at 31 December 2024 by respective Government Valuation Department independent professionally qualified valuers, who hold recognised relevant professional qualifications and have recent experience in the locations and segments of the properties valued. Valuations were based on Open Market Value approach based on current prices of similar properties. The key inputs under this approach are the price per square metre from current year sales of comparable lots of property in the area (location and size). It is the Authority's accounting policy to revalue properties after every three years.

**8 Property, plant, and equipment (continued)**

If head office building and other residential properties were stated on the historical cost basis, the amounts would be as follows:

	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Cost	136,977	5,325	136,977	5,325
Accumulated Depreciation	(33,373)	(1,261)	(29,879)	(1,129)
<b>Net book value</b>	<b>103,604</b>	<b>4,064</b>	<b>107,098</b>	<b>4,196</b>

**9 Investment property**

	<b>ZMW'000</b>	<b>US\$'000</b>
<b>At 1 January 2023</b>		
Cost	23,036	1,272
Accumulated depreciation	(802)	(39)
Effects of foreign exchange difference	9,472	-
<b>Net book amount</b>	<b>31,706</b>	<b>1,233</b>
<b>Year ended 31 December 2023</b>		
Opening net book amount	15,727	1,581
Depreciation charge	(5,108)	(348)
Effects of foreign exchange difference	21,087	-
<b>Net book amount</b>	<b>31,706</b>	<b>1,233</b>
<b>At 1 January 2024</b>		
Opening net book amount	31,706	1,233
Depreciation charge	(1,043)	(39)
Effects of foreign exchange difference	2,865	-
<b>Closing net book amount</b>	<b>33,528</b>	<b>1,194</b>
<b>At 31 December 2024</b>		
Cost	15,727	1,581
Accumulated depreciation	(6,151)	(387)
Effects of foreign exchange difference	23,952	-
<b>Net book amount</b>	<b>33,528</b>	<b>1,194</b>

The investment property is carried at cost because their fair values cannot be reliably determined on a continuing basis. Comparable market transactions are infrequent and alternative reliable estimates of fair value are unreliable. This is due to the location of the investment properties.



**10 Intangible assets****At 1 January 2023**

	<b>ZMW'000</b>	<b>US\$'000</b>
Opening balances		
Cost	<b>16,301</b>	<b>974</b>
Depreciation charge	(4,045)	(237)
Effects of foreign exchange difference	1,097	-
Closing net book amount	<b>13,353</b>	<b>737</b>

**At 31 December 2023**

Net book amount	13,353	737
Additions	256	13
Amortisation Charge	(4,209)	(207)
Effects of foreign exchange difference	4,575	-
<b>Net book amount</b>	<b>13,974</b>	<b>543</b>

**At 1 January 2024**

Cost	13,975	543
Accumulated Amortisation	(5,528)	(209)
Effects of foreign exchange difference	940	-
<b>Net book amount</b>	<b>9,387</b>	<b>334</b>

**At 31 December 2024**

Cost	13,609	750
Accumulated Amortisation	(9,737)	(416)
Effects of foreign exchange difference	5,515	-
<b>Net book amount</b>	<b>9,387</b>	<b>334</b>

**11 Long term investments****2024****2023**

	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
At start of year	76,763	2,984	54,040	2,984
Reclassified to short term investment	(41,886)	(1,492)	-	-
Effects of exchange differences	7,020	-	22,719	-
Gross carrying amount	41,897	1,492	76,763	2,984
At end of year	<b>41,897</b>	<b>1,492</b>	<b>76,763</b>	<b>2,984</b>

Long term investments are composed of Zero-Coupon Treasury Bills which were issued to the Authority in exchange for funds deposited (Blocked Funds) with the Reserve Bank of Zimbabwe totalling US\$ 2,983,800. The treasury bills have tenures ranging between 3 – 5 years with the earliest and latest tranches maturing in July 2025 and August 2027 respectively. The US\$1.492 million of the treasury bills set to mature in July 2025 have been reclassified to short term investments.

**12 Inventory****2024****2023**

	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Consumable stores	<b>5,092</b>	<b>181</b>	<b>4,768</b>	<b>185</b>

Inventory comprises stock of consumables and other items held for use in the business.

**13 Financial assets at fair value through profit or loss**

	2024		2023	
	ZMW'000	US\$'000	ZMW'000	US\$'000
At start of the year	19,555	760	14,438	797
Additions	10,035	379	6,199	304
Fair value gain	1,211	43	435	21
Write off	-	-	(1,005)	(49)
Withdrawals	(2,689)	(192)	(6,363)	(312)
Effect of exchange rate differences	(307)	-	5,851	-
	<b>27,804</b>	<b>990</b>	<b>19,555</b>	<b>760</b>

Financial assets held at fair value through profit or loss represent funds invested with African Life Financial Services Zambia Limited (AFLIFE) and Zimnat Asset Management Company (ZIMNAT). The funds are held as sinking funds set up to meet gratuity obligations for employees on fixed term contracts. The schemes recorded fair value gains of US\$ 30,253.64 (2023: US\$ 14,188.39) and US\$12,883.31 (2023: US\$ 7,178.98) respectively. In the year under review, a sum of US\$ 192,205.10 (2023: US\$ 278,286.25) was withdrawn from AFLIFE to settle gratuity obligations that fell due. There were no withdrawals under the ZIMNAT fund, (2023: US\$ 32,152.00).

**14 Trade and other receivables**

	ZMW'000	US\$'000	ZMW'000	US\$'000
ZESCO Limited	1,321,432	45,848	1,210,730	47,067
Kariba Hydro Power Company (KHPC)	1,208,953	41,351	1,107,673	43,061
Trade receivables	2,530,385	87,199	2,318,403	90,128
Less: Provision for impairment losses	(1,111,543)	(39,591)	(932,080)	(36,235)
	<b>1,418,840</b>	<b>47,608</b>	<b>1,386,323</b>	<b>53,893</b>
Prepayments	23,553	839	34,510	1,342
Ring fenced funds – Ministry of Finance and Economic Development	59,527	2,120	149,218	5,801
Rental debtors	2,350	84	2,015	78
Sundry receivables	4,826	172	2,167	85
Staff debtors	60,317	2,148	67,079	2,608
	<b>150,573</b>	<b>5,363</b>	<b>254,989</b>	<b>9,914</b>
	<b>1,569,413</b>	<b>52,971</b>	<b>1,641,312</b>	<b>63,807</b>
Less: Long-term receivables				
Trade Receivables	(629,103)	(22,408)	(935,741)	(36,377)
House hold furnishing loans	(316)	(11)	(1,353)	(53)
Staff car loans	(20,551)	(732)	(22,312)	(867)
	<b>(649,970)</b>	<b>(23,151)</b>	<b>(959,406)</b>	<b>(37,297)</b>
	<b>919,443</b>	<b>29,820</b>	<b>681,906</b>	<b>26,510</b>

Ringfenced refers to Authority funds held in Zimbabwe Dollars against which the Government of the Republic of Zimbabwe made a commitment to release United States Dollar equivalents on a one-to-one basis following the redenomination of funds previously held as United States to Zimbabwe Dollars. In the year 2024, the Authority received US\$ 3,680,600 (2023 : 4,399,997) against the said funds bringing the amount outstanding to US\$ 2,120,253 (2022: US\$ 5,800,853).

**14 Trade and other receivables (continued)***(i) Classification as trade and other receivables*

Trade receivables are amounts due from Utilities for water sales arising in the ordinary course of business. Trade and other receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. If collection of the amounts is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets. Trade receivables are generally due for settlement within 45 days and therefore are all classified as current. The Authority's other accounting policies for trade and other receivables are outlined below:

*(ii) Other receivables*

These amounts generally arise from transactions outside the usual operating activities of the Authority. Interest is not charged on these amounts and neither is collateral normally obtained.

*(iii) Staff debtors*

These relates to car, household furnishing and housing loans which carry interest rates of 6%, 6% and 10% per annum respectively. As at year end, these have been fair valued using the market related interest rates for similar loans.

*(iv) Fair values of trade and other receivables*

Due to the short-term nature of the current receivables, their carrying amount is considered to be the same as their fair value.

<b>15 Cash and cash equivalents</b>	<b>2024</b>		<b>2023</b>	
	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Cash at bank and in hand	98,424	3,506	103,635	4,029
Short term investments	472,371	16,825	220,711	8,580
	<b>570,795</b>	<b>20,331</b>	<b>324,346</b>	<b>12,609</b>

In the statement of cash flows, cash and cash equivalents include cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less.

Cash flow information: Net debt reconciliation

Below is the tabular presentation of the movements in the Authority's net debt movement reconciliation. In the year under review, US\$7,093,801 (2023 : US\$3,720,718) was drawn from the International Development Association ("IDA"), World Bank US\$ 75 million loan facility while US\$ 4,177,099 (2023:US\$ 2,449,091) was drawn from the ("ADF") US\$ 39 million loan facility.

**15 Cash and cash equivalent (continued)**

		<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
Cash and cash equivalents	15	570,795	20,331	324,346	12,609
Liquid investments (i)	13	27,804	990	19,555	760
Borrowings repayable after one year	16	(1,083,334)	(38,587)	(727,165)	(28,269)
Net debt		<u>(484,735)</u>	<u>(17,266)</u>	<u>(383,264)</u>	<u>(14,900)</u>
Cash and liquid investments	15,13	598,599	21,321	343,901	13,368
Gross debt – fixed interest rates	16	(1,083,334)	(38,587)	(727,165)	(28,269)
Net debt		<u>(484,735)</u>	<u>(17,265)</u>	<u>(383,264)</u>	<u>(14,900)</u>

<b>ZMW'000</b>	<b>Cash and cash equivalent</b>	<b>Liquid investments</b>	<b>Borrowings within 1 year</b>
Net debt as at 1 January 2023	143,817	14,438	(399,529)
Cash flows	80,314	6,199	(125,643)
Redemptions	-	(6,363)	5,939
Foreign exchange adjustments	-	(570)	(6,724)
Other noncash movements	100,215	5,851	(201,208)
<b>Net debt as at 31 December 2023</b>	<u>324,346</u>	<u>19,555</u>	<u>(727,165)</u>
Cash flows	203,333	10,645	(298,288)
Redemptions	-	(5,396)	36,918
Other noncash movements	-	1,211	(011,699)
Foreign exchange adjustments	43,116	1,790	(83,101)
<b>Net debt as at 31 December 2024</b>	<u>570,795</u>	<u>27,804</u>	<u>(1,083,334)</u>

<b>US\$'000</b>	<b>Cash and cash equivalent</b>	<b>Liquid investments</b>	<b>Borrowings within 1 year</b>
<b>Net debt as at 1 January 2023</b>	7,941	797	(22,061)
Cash flows	4,668	304	(6,170)
(Redemptions) Repayments	-	(312)	292
Other non cash movements	-	(28)	(330)
<b>Net debt as at 31 December 2023</b>	<u>12,609</u>	<u>760</u>	<u>(28,269)</u>
Cash flows	7,722	379	(11,271)
(Redemptions) Repayments	-	(192)	1,395
Other non cash movements	-	43	(442)
<b>Net debt as at 31 December 2024</b>	<u>20,331</u>	<u>990</u>	<u>(38,587)</u>

Liquid investments comprise current investments that are held at fair value through profit or loss.



**16. Borrowings**Government of the Republic of Zambia

	2024		2023	
	ZMW'000	US\$'000	ZMW'000	US\$'000
At start of year	727,165	28,269	399,529	22,061
Draw downs				
-World Bank IDA	187,740	7,094	75,769	3,721
-AFDB loan	110,548	4,177	49,874	2,449
Interest charged	11,699	442	6,724	330
Loan repayment	(36,918)	(1,395)	(5,939)	(292)
Effects of exchange differences	83,100	-	201,208	-
At end of year	<b>1,083,334</b>	<b>38,587</b>	<b>727,165</b>	<b>28,269</b>

The Authority has two (2) on-lent loan facilities from the Government of Republic of Zambia for the Kariba Dam Rehabilitation Project (KDRP). The loans are from The African Development Bank's (ADF) Loan and The World Bank's International Development Agency (IDA) Loan. These are briefly explained below:

- (i). **The African Development Bank (AfDB)** – On 20 February 2015, the AfDB availed a loan facility, ADF Loan, number 2100150032548 through the Government of Republic of Zambia to finance specified components of the of the project. Disbursements from this instrument are all through DIRECT payments only.

The amount availed under facility was UAC 25.20 million (equivalent to US\$39,000,000 at the time of agreement signature).

In 2024, a total of US\$4,177,100 was disbursed towards the following activities:

- Spillway Works – US\$3,484,905;
- Technical Services & Supervision Consultancy – US\$467,180;
- Panel of Experts – US\$217,435;
- Additional Instruments – US\$7,580.

The Cumulative disbursement from the Instrument as at 31<sup>st</sup> December 2024 stood at US\$18,838,637.

- (ii). **The World Bank (International Development Agency)** – On 20 February 2015, the World Bank through International Development Agency (IDA) availed a loan facility through the Government of Republic of Zambia to finance specified components of the of the project. The instrument IDA Loan - Instrument number 55630 Loan facility was to maximum of US\$75,000,000 (XDR 50,600,000) towards specified components of the project.

The Loan is accessed through direct payment and designated account (DA), where disbursements of amounts above US\$50,000 are done using the former method while those lower than this threshold disbursed through the latter. The Designated Account was opened in 2022 with Standard Chartered Bank Zambia with a float of US\$200,000 for the IDA loan.

**16 Borrowings (Continued)**

In the 2024 financial year, a total of US\$7,093,801 was disbursed directly from the IDA Loan towards the payments of Spillway refurbishment works towards the following activities:

- Spillway Works – US\$4,464,652;
- Technical Services & Supervision Consultancy – US\$848,008;
- DA Replenishment - US\$ 1,781,140;

The list of IDA Replenishments is shown on the Appendix III.

The Cumulative Disbursed Total from the IDA Loan as at 31 December 2024, stood at US\$28,485,429.

**Accruals**

At the close of the year, the following obligations were not settled but incurred in the 2024 financial year;

No	Activity	Cost (US\$)
1	Technical Services & Supervision Consultancy	243,988
2	Individual Consultants	13,944
3	Hydropower Sustainability	22,849
4	Spillway Refurbishment	1,000,334
5	Plunge Pool	4,305,558
6	Panel of Experts	15,482
	<b>Total</b>	<b>5,602,155</b>

**17 Trade and other payables**

	2024		2023	
	ZMW'000	US\$'000	ZMW'000	US\$'000
Trade creditors	355,138	12,649	44,586	1,733
Accruals	174,915	6,230	175,593	6,826
Sundry creditors	831	30	315	12
Statutory liabilities	13,343	475	13,351	519
Employee benefits	85,157	3,033	75,940	2,951
<b>Total</b>	<b>629,384</b>	<b>22,417</b>	<b>309,785</b>	<b>12,041</b>

The carrying amounts of trade and other payables are considered to be the same as their fair values, due to their short-term nature.

**18 Capital Grants (Continued)****(b) Movements in grants**

	<b>2024</b>		<b>2023</b>	
	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
<b>Movements in capital grants</b>				
At start of year	2,725,994	105,973	1,623,368	89,639
Received during the year:				
· African Development Bank	77,331	2,922	33,010	1,621
· European Union	374,549	14,152	278,932	13,697
· Swedish International Development Agency (Sida)	39,581	1,496	20,684	1,016
Effect of exchange rate losses	279,150	-	770,000	-
At end of year	<b>3,496,605</b>	<b>124,543</b>	<b>2,725,994</b>	<b>105,973</b>

**(c) Amortisation of grants**

All the projects currently being funded by grants are yet to be completed and are still being carried in work in progress and as such not being amortised to the statement of income and expenditure yet.

**19 Financial instruments by category**

	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
<b>Financial assets at amortised cost</b>				
Trade and other receivables (excluding pre-payments)	1,592,966	52,132	1,606,802	62,466
Cash and cash equivalents	570,795	20,331	324,346	12,609
Long term investments	41,897	1,492	76,763	2,984
	<b>2,205,658</b>	<b>73,955</b>	<b>2,007,911</b>	<b>78,059</b>
<b>Financial assets at fair value through profit or loss</b>				
	<b>27,804</b>	<b>990</b>	<b>19,555</b>	<b>760</b>
<b>Other Financial liabilities at amortised cost</b>				
<b>Financial liabilities</b>				
Borrowings	1,083,334	38,587	727,165	28,269
Trade and other payables (excluding statutory liabilities)	616,041	21,941	296,435	11,522
	<b>1,693,375</b>	<b>60,528</b>	<b>1,023,600</b>	<b>39,791</b>

## 20 Financial risk management objectives and policies

The Authority's activities expose it to a variety of financial risks: market risk (including foreign exchange risk and interest rate risk), credit risk and liquidity risk. The Authority's overall risk management programme focuses on the assessment of the liquidity positions of key customers and the unpredictability of financial markets and seeks to minimise potential adverse effects on its financial performance and position.

Financial risk management is carried out by the finance department under policies approved by the Board of Directors. The policies are embedded in the overall enterprise risk management policy of the Authority.

### **Market risk**

#### (i) Foreign exchange risk

The Authority primarily generates its revenue in United States Dollar but does from time to time meet some of its obligations in Zambian Kwacha, the Zimbabwe Dollar and, other major convertible currencies through payments for goods and services needed for the day to day operations. Foreign exchange risk arises when future recognised assets or liabilities are denominated in a currency that is not the entity's functional currency. Management's policy to manage foreign exchange risk is to hold foreign currency bank accounts which act as a natural hedge for meeting foreign currency denominated expenses.

At 31 December 2024, if the either the Zambian Kwacha or the Zimbabwe Dollar had weakened/strengthened by 4% against the United States Dollar with all other variables held constant, operating surplus and accumulated reserves for the Authority would have been ZMW 0.00756 million (2023: ZMW 0.00179 million ) higher or lower than the 2024 result.

#### ii) Interest rate risk

The Authority's interest rate risk arises from long-term borrowings contracted for the Kariba dam rehabilitation project. Borrowings issued at concessional fixed interest rates, but with a clause for default penalties expose the Authority's to cash flow interest rate risk. Management manages this risk by ensuring sufficient liquidity to meet loan obligations when they fall due. As at 31 December 2024, an increase/decrease of 200 (2023: 200) basis points on US\$ did not have a material impact on the operating surplus and accumulated reserves.

### **Credit risk**

Credit risk arises from cash and cash equivalents and deposits held with banks and financial institutions, as well as credit exposure to customers, including outstanding receivables.

#### *Risk management*

The Authority assesses the credit quality of each customer, taking into account its financial position, past experience, and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the Board. The utilisation of credit limits is regularly monitored. The compliance with credit limits by customers is regularly monitored by line management.

For cash and cash equivalent balances, the Authority's exposure and credit ratings of counterparties are regularly monitored, and the aggregate value of transactions spread amongst approved financial institutions. The Authority actively seeks to limit the amount of credit exposure to any one financial institution and credit exposure is controlled by counterparty limits that are reviewed and approved by the Treasury. For banks and financial institutions, only independently rated parties with a minimum rating of 'A' for International and regional banks with a local presence are accepted.

The Authority has significant concentrations of credit risk as it has two main customers which are ZESCO Limited and KHPC. The continued increase in the receivables balances with the Utilities is a clear indication that the credit risk is now at the fore of the financial risks that the Authority has struggled to bring under control. This has had spill over effects on the liquidity situation that has deteriorated as a consequence.



**20 Financial risk management objectives and policies (continued)****Credit risk (continued)***Impairment of financial assets*

The Authority's financial assets that are subject to the expected credit loss model are trade and other receivables and Long term investments. Cash and cash equivalents is also subject to impairment requirements of IFRS 9 but the identified impairment loss was immaterial.

Due to the nature of the Authority's debtors, it has applied the IFRS 9 general approach in calculating its expected credit loss. The debtors are in default due to the Authority's debtors payment policy. There has been delays in receiving payments from the Authority's only two main debtors and historically the Authority has not suffered any losses on non payment of debt.

IFRS 9 requires that credit losses on financial assets be measured and recognised using the expected credit loss (ECL) approach. Credit loss is calculated as the difference between the carrying amount of the contractual cash flows and the present value (PV) of expected future cash flows over a period of 5 years for KHPC and 6 years for ZESCO Limited. The expected cash flows are based on the historical payment pattern of the debtors. The present values have been discounted at the opportunity cost market borrowing rate of 15%.

On that basis, the loss allowance as at 31 December 2024 was determined as follows for trade receivables:

**KHPC Limited Impairment****Year ended 31 December 2024**

<b>ZMW'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance	-	-	-	-	-	-	1,160,957
Expected cashflows	59,983	75,462	46,438	110,291	122,909	257,882	672,944
Loss rate/deferred component	0.87	0.76	0.66	0.57	0.50	0.43	277,048
Discounted cashflows	52,159	57,060	30,534	63,059	61,122	111,506	375,414
Impairment	7,824	18,402	15,904	47,232	61,787	146,376	<b>574,577</b>

<b>US\$'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance	-	-	-	-	-	-	41,351
Expected cashflows	2,136	2,688	1,654	3,928	4,377	9,184	23,969
Loss rate/deferred component	0.87	0.76	0.66	0.57	0.50	0.43	9,868
Discounted cashflows	1,858	2,032	1,088	2,246	2,176	3,971	13,372
Impairment	278	656	566	1,682	2,201	5,213	<b>20,466</b>

**20 Financial risk management objectives and policies (continued)****Credit risk (continued)****Impairment of financial assets (continued)****KHPC Limited Impairment****Year ended 31 December 2023**

<b>ZMW'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total</b>
Outstanding balance						1,107,673
Expected cashflows	68,676	86,399	53,168	126,275	773,155	1,107,673
Loss rate	0.88	0.78	0.68	0.60	0.53	
Discounted cashflows	60,507	67,068	36,363	76,091	410,503	650,531
Impairment loss	8,162	19,331	16,805	50,184	362,653	<b>457,142</b>

<b>US\$'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total</b>
Outstanding balance						43,061
Expected cashflows	2,670	3,359	2,067	4,909	30,056	43,061
Loss rate	0.88	0.78	0.68	0.60	0.53	
Discounted cashflows	2,352	2,607	1,414	2,958	15,958	25,289
Impairment loss	318	752	653	1,951	14,098	<b>17,772</b>

**ZESCO Limited Impairment****Year ended 31 December 2024**

<b>ZMW'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance							1,241,378
Expected cashflows	109,510	122,909	164,350	244,079	245,874	255,658	1,148,913
Loss rate/deferred component	0.87	0.76	0.66	0.57	0.50	0.43	40,271
Discounted cashflows	95,227	92,937	108,063	139,553	122,243	119,893	671,374
Impairment Loss	14,283	29,972	56,287	104,526	123,631	135,765	<b>517,810</b>

<b>US\$'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance							45,848
Expected cashflows	4,045	4,539	6,070	9,015	9,081	9,683	42,433
Loss rate/deferred component	0.87	0.76	0.66	0.57	0.50	0.43	1,487
Discounted cashflows	3,517	3,432	3,991	5,154	4,515	4,186	24,796
Impairment Loss	528	1,107	2,079	3,861	4,566	5,497	<b>19,124</b>

**ZESCO Limited Impairment****Year ended 31 December 2023**

<b>ZMW'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance							1,210,730
Expected cashflows	189,201	106,807	119,874	160,292	238,053	396,503	1,210,730
Loss rate	0.88	0.78	0.68	0.60	0.53	0.47	
Discounted cashflows	166,697	82,910	81,986	96,589	91,062	216,564	735,808
Impairment loss	22,504	23,897	37,888	63,703	80,458	246,472	<b>472,922</b>

**20 Financial risk management objectives and policies (continued)****Credit risk (continued)****Impairment of financial assets (continued)****ZESCO Limited Impairment****Year ended 31 December 2023**

<b>US\$'000</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Total</b>
Outstanding balance							47,067
Expected cashflows	7,355	4,152	4,660	6,231	9,254	15,415	47,067
Loss rate	0.88	0.78	0.68	0.60	.53	0.47	
Discounted cashflows	6,480	3,223	3,187	3,755	3,540	8,420	28,605
Impairment loss	875	929	1,473	2,473	3,128	9,581	<b>18,462</b>

The closing allowances for the trade and other receivables as at 31 December 2024 reconcile to the opening loss allowance as follows:

	<b>ZMW'000</b>	<b>USD'000</b>	<b>ZMW'000</b>	<b>USD'000</b>
31 December calculated under IFRS 9	932,080	36,235	467,309	25,804
Receivables write - off	(2,463)	(93)	(3,837)	(188)
Impairment loss allowance recognised in profit or loss during the year	91,270	3,449	216,238	10,619
Effect of Exchange differences	90,656	-	252,370	-
<b>Total</b>	<b>1,111,543</b>	<b>39,591</b>	<b>932,080</b>	<b>36,235</b>

Trade receivables are written off when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include, amongst others, the failure of a debtor to engage in a repayment plan with the Authority, and a failure to make contractual payments for a period of greater than 120 days past due. Impairment losses on trade receivables are presented as net impairment losses within operating profit. Subsequent recoveries of amounts previously written off are credited against the same line item.

Staff debtors are ordinarily not expected to pose a significant recovery risk as they are usually recovered through the payroll. In the unlikely event of loss, the impairment provisioning will follow the same procedures applied to trade and other debtors.

**Liquidity Risk**

Liquidity risk is the risk that the Authority will not be able to meet its financial obligations as they fall due. Prudent liquidity management includes maintaining sufficient cash balances, and the availability of funding from an adequate amount of committed credit facilities.

The table below analyses the Authority's financial liabilities that will be settled on a net basis into the relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date. The amounts disclosed in the table below are the contractual undiscounted cashflows:

**20 Financial risk management objectives and policies (continued)**Liquidity risk (continued)

<b>ZMW'000</b>	<b>Less than 1 year</b>	<b>Between 1 and 2 years</b>	<b>Between 2 and 5 years</b>	<b>Over 5 years</b>	<b>Total</b>
At 31 December 2024:					
- Borrowings	50,466	98,612	147,222	787,034	1,083,334
- trade and other payables	543,395	85,988	-	-	629,383
	<u>593,861</u>	<u>184,600</u>	<u>147,222</u>	<u>787,034</u>	<u>1,712,717</u>
At 31 December 2023:					
- Borrowings	9,659	70,675	139,417	1,325,752	1,545,503
- trade and other payables	63,213	46,492	-	-	109,705
	<u>72,872</u>	<u>117,167</u>	<u>139,417</u>	<u>1,325,752</u>	<u>1,655,208</u>
<b>US\$'000</b>	<b>Less than 1 year</b>	<b>Between 1 and 2 years</b>	<b>Between 2 and 5 years</b>	<b>Over 5 years</b>	<b>Total</b>
At 31 December 2024:					
- Borrowings	1,798	3,512	5,244	28,033	38,587
- trade and other payables	19,355	3,063	-	-	22,418
	<u>21,153</u>	<u>6,575</u>	<u>5,244</u>	<u>28,033</u>	<u>61,005</u>
At 31 December 2023					
- Borrowings	1,394	2,966	4,346	19,563	28,269
- trade and other payables	7,246	4,276	-	-	11,522
	<u>8,640</u>	<u>7,242</u>	<u>4,346</u>	<u>19,563</u>	<u>39,791</u>

Note : Trade and other payables exclude statutory payables

**21 Fair value estimation**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value of financial assets and liabilities traded in active markets (such as publicly traded equity) are based on quoted market prices at the close of trading on the reporting date.

The carrying amounts of all financial assets and liabilities at the reporting date approximate their fair values. The following table presents the Authority's assets that are measured at fair value:



**22 Capital management**

The Authority's objectives when managing capital are to safeguard the Authority's ability to continue as a going concern. Adequacy of the capital of the Authority is maintained by the Authority on a regular basis. As and when required the Authority will through the respective Ministries responsible for Finance, source for funding in the form of loans and grants.

**23 Contingent liabilities**

The Authority has some cases in the courts of law, most of which have already been decided in the Authority's favour and are only back in the courts on appeal by the plaintiffs. No contingent liabilities have been provided for as management believe that these are remote.

**24 Related party transactions**

The Authority was constituted by the *Zambezi River Authority Acts Chapters 467 and 20:23* of the Laws of Zambia and Zimbabwe and, is a common enterprise between the Governments of the Republics of Zambia and Zimbabwe. Control of the entity is on a 50/50 basis with decisions being made by consensus.

Oversight of the Authority is vested in the Council of Ministers (CoM). Internal supervision of its management and control of the affairs of the Authority, however, is vested in the Board and the key executive officers.

The Authority's key management is made up of the Executive Management which includes the Chief Executive and four Directors.

The following transactions were carried out with related parties:

	<b>2024</b>		<b>2023</b>	
	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
<b>Directors compensation</b>				
Director's fees and allowances	3,686	139	3,072	151
Other expenses	9,696	366	8,375	411
	<b>13,382</b>	<b>505</b>	<b>11,447</b>	<b>562</b>
<b>Key management compensation</b>				
Salaries and other benefits	16,956	641	13,047	641
Pension contribution	5,893	223	4,535	223
	<b>22,849</b>	<b>864</b>	<b>17,582</b>	<b>864</b>
<b>Loans to key management</b>				
At start of year	5,162	278	5,162	278
Additions	977	48	977	48
Repayments	(2,118)	(104)	(2,118)	(104)
	1,681	-	1,681	-
At end of year	<b>5,702</b>	<b>222</b>	<b>5,702</b>	<b>222</b>
<b>Amounts advanced and amounts owed to Zambezi Valley Development Fund (ZVDF)</b>				
ZVDF Receivable	652	23	598	23
ZVDF Payable	(523)	(19)	(672)	(26)
Net position at year end	<b>129</b>	<b>4</b>	<b>(74)</b>	<b>(3)</b>



**24 Related party transactions (continued)**

	<b>2024</b>		<b>2023</b>	
<b>Water sales revenue</b>	<b>ZMW'000</b>	<b>US\$'000</b>	<b>ZMW'000</b>	<b>US\$'000</b>
ZESCO	203,399	7,685	211,375	10,380
KHPC	192,176	7,262	210,286	10,326
	<b>395,575</b>	<b>14,946</b>	<b>421,661</b>	<b>20,706</b>
<b>Outstanding receivable balances from water sales</b>				
ZESCO	1,321,432	45,848	1,210,730	47,067
KHPC	1,208,953	41,351	1,107,673	43,061
	<b>2,448,145</b>	<b>87,199</b>	<b>2,318,403</b>	<b>90,128</b>

## APPENDICES

### Appendix I - Statement of Capital Expenditure Compared to Budget

Year ended 31 December 2024	Spent ZMW'000	Budget ZMW'000	Balance ZMW'000
Kariba dam structure	-	31,444	31,444
CWIP- Kariba dam rehabilitation	1,071,599	1,358,891	287,292
CWIP- Batoka Hydro Electric Scheme	2,449	51,939	49,490
Devil's Gorge	-	23,303	23,303
Floating solar PV	-	5,615	5,615
Land & Buildings	-	7,552	7,552
Furniture, fittings, plant and equipment	-	25,942	25,942
Motor vehicles	10,954	1,685	(9,269)
Information communication technology infrastructure	3,669	21,057	17,388
<b>Total</b>	<b>1,088,671</b>	<b>1,527,428</b>	<b>438,757</b>

Year ended 31 December 2024	Spent US\$'000	Budget US\$'000	Balance US\$'000
Kariba dam structure	-	1,120	1,120
CWIP- Kariba dam rehabilitation	40,292	48,402	8,110
CWIP- Batoka Hydro Electric Scheme	87	1,850	1,763
Devil's Gorge	-	830	830
Floating Solar PV	-	200	200
Land & Buildings	-	269	269
Furniture, fittings, plant & equipment	390	924	534
Motor vehicles	131	60	(71)
Information communication technology infrastructure	242	750	508
<b>Total</b>	<b>41,142</b>	<b>54,405</b>	<b>13,263</b>

The budget was approved by the Council of Ministers on 15 December 2023.



Chairperson



Co-Chairperson



Deloitte & Touche



Alice Jere Tembo  
Partner signing on behalf of firm  
AUD/F000433

### Auditors Certificate

In accordance with Article 15(6)6 of the Zambezi River Authority Act 1987, we certify that the comparative statement shown above is correct.

**Appendix II – Country Statement of income and expenditure**

Amounts are Stated in ZMW'000	Year ended 31 December 2024		
	Zambia	Zimbabwe	Consolidated
Revenue	203,399	192,176	395,575
Finance income	42,734	26,256	68,990
Fair value gain on financial assets	801	331	1,132
Gain on disposal of property, plant and equipment	3,531	1,078	4,609
Other income	26,524	2,633	29,157
<b>Segment income</b>	<b>276,989</b>	<b>222,475</b>	<b>499,464</b>
<b>Segment costs</b>			
Board expenses	10,970	6,366	17,336
Repairs and maintenance	12,866	8,039	20,905
Employee benefit expense	119,590	107,592	227,182
Finance costs	48,229	5,538	53,767
Other administration expenses	178,839	187,057	365,896
	<b>370,494</b>	<b>314,592</b>	<b>685,086</b>
<b>Net Surplus</b>	<b>(93,505)</b>	<b>(92,118)</b>	<b>(185,623)</b>

Amounts are Stated in US\$'000	Year ended 31 December 2024		
	Zambia	Zimbabwe	Consolidated
Revenue	7,685	7,261	14,946
Finance income	1,615	992	2,607
Fair value gain on financial assets	30	13	43
Gain on Disposal of Property, plant and equipment	133	41	174
Other income	1,002	99	1,101
<b>Segment income</b>	<b>10,464</b>	<b>8,406</b>	<b>18,871</b>
<b>Segment costs</b>			
Board expenses	415	241	656
Repairs and maintenance	486	304	790
Employee benefit expense	4,519	4,065	8,584
Finance costs	1,822	209	2,031
Other administration expenses	6,757	7,071	13,828
	<b>13,998</b>	<b>11,891</b>	<b>25,889</b>
<b>Net surplus</b>	<b>(3,534)</b>	<b>(3,484)</b>	<b>(7,018)</b>



**Appendix III : SIDA Grant & IDA Loan – Designated Account Replenishments Applications**

WB Ref. No.	Date	Amount (US\$)
105	21 February 2024	115,231
108	14 May 2024	45,757
110	11 June 2024	52,410
111	12 August 2024	63,010
113	17 September 2024	38,182
116	25 November 2024	70,390
<b>Total</b>		<b>384,980</b>

**IDA Loan – Designated Account Replenishments Applications**

WB Ref. No.	Date	Amount (US\$)
240	12 February 2024	188,188
246	16 May 2024	192,923
245	27 March 2024	148,778
250	7 June 2024	199,397
257	12 August 2024	199,767
258	16 August 2026	109,105
264	13 September 2024	157,891
266	5 November 2024	86,838
267	14 November 2024	150,641
273	5 December 2024	187,258
280	13 December 2024	160,354
<b>Total</b>		<b>1,781,140</b>

Appendix IV Kariba Dam Rehabilitation Project (KDRP) Funding Source and Application Analysis

Dec-24	Institutional Support										Dam Break & Other studies					Plunge Pool Reshaping Contract	Spillway Rehabilitation	Spillway Rehabilitation Works Phase II	KDRP Total
	Panel of Experts (PoE)	Technical Services & Supervisory Consultancy	5 Yearly Inspection	Gender Based Violence	Individual Consultants	PIU Salaries	Additional Instrumentation	Capacity Building	ZVDF Performance assessment	Bank Charges	EHSS Audit	Hydropower Sustainability	Early Warning System	Project Equipment	Environmental & Social Impact Assessment	Dam Break	LIDAR Survey	US\$'k	US\$'k
Disbursements for the Year (2024)	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k	US\$'k
International Development Association Loan (55630)) - Loan	-	848	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
International Development Association Loan (55630)) – Loan (Designated Account)	233	270	-	-	222	455	8	4	-	8	-	-	34	13	-	-	-	450	665
Swedish International Fund Grant - Grant (TF19029) (Designated Account)	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-	384,919.69	77
Swedish International Fund Grant - Grant (TF19029)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,110	-
The Africa Development Fund (ADF Loan)	217	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	286	4,170
The Africa Development Fund (ADF Grant)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,059	2,283
The Africa Development Fund (TSF Grant)	-	639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	639
European Union Funding ( ZM/ FED/031-570) - Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,152
Accrued	15	244	-	-	14	-	-	-	23	-	-	-	-	-	-	-	-	728	272
Total Disbursements for the Year 2024	466	2,463	-	-	236	455	8	4	46	8	-	46	34	13	-	-	-	11,729	1,525



[illegible]









***Water! Today, Tomorrow***

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