MINISTRY OF ENERGY AND POWER DEVELOPMENT

Towards Energy Sustainability for socio-economic transformation

The Vice President of Zimbabwe Honourable General (Rtd) Dr. C.D.G.N. Chiwenga was the Guest of Honour at the 2025 International Renewable Energy Conference in April organized by Ministry of Energy and Power Development and Alpha Media Holdings

During this conference the National Energy Efficiency Policy was launched on the 9th of April 2025 by the Vice President of Zimbabwe, Honourable General Dr. C.D.G.N. Chiwenga. The policy emphasis is on the efficient use of energy resources available in the country. Further the policy was formulated to reduce bio degradable waste that will be converted to biogas and biomass. The Vice President stressed on the need to store energy that is being produced. The government has embarked on the energy projects such as wind energies. The Government is aiming 200MW of installed renewable capacity by 2030.

Launch of the National Energy Efficiency Policy at the International Renewable Energy Conference (IRECE) 2025

1.0 Introduction

The provision of reliable and sustainable energy services is undoubtedly the key driver towards and socio-economic development for any progressive economies. Thus, there is a positive correlation between economic growth and energy supply. As the country moves towards meeting vision 2030 of "an upper middle-income society" focus is being put to ensure universal access to sustainable and modern energy anchored on massive expansion of generation capacity as well as urban and rural electrification using both on and off grid energy solutions. The Ministry under the Second Republic has gone on a drive to implement strategies that achieve these aspirations through maintenance and rehabilitation of existing infrastructure and construction of new energy projects. Further, the Ministry has adopted policies that promote the participation by both individuals and private players in energy production.

Currently Zimbabwe still depends on regional utilities to augment its internal electricity generation while the bulky of the liquid petroleum products are imported except for the locally produced ethanol which is blended with petrol. There is therefore need for continued investments to ensure that the country become energy secure and become a regional hub for fuel transportation and distribution in the Southern African Region.

1.1 Current Situation Analysis

The country has an average supply capacity of 1200MW to 1400MW against peak demand of 1800MW. The power sector is currently experiencing a power supply deficit in the range of 400 – 700MW which is met by load shedding during peak demand periods. The power from regional utilities is obtained through Power Purchase Agreements (PPA) between regional utilities on a firm and non-firm basis and these include HCB of Mozambique and Eskom of South Africa comprising 100MW firm and up to 400MW non-firm capacity.

The demand for power is set to continue growing due to the anticipated growth in all sectors of the economy as we move towards vision 2030 targets.

1.2 Major sources of locally generated electricity include: -

Hwange Thermal Power Project which continues to operate with an average of four units from the 6 available with an average capacity of 430MW. Forced outages continue to affect the plant operations. The commissioning of Hwange units 7&8 had been a major improvement to the power supply.

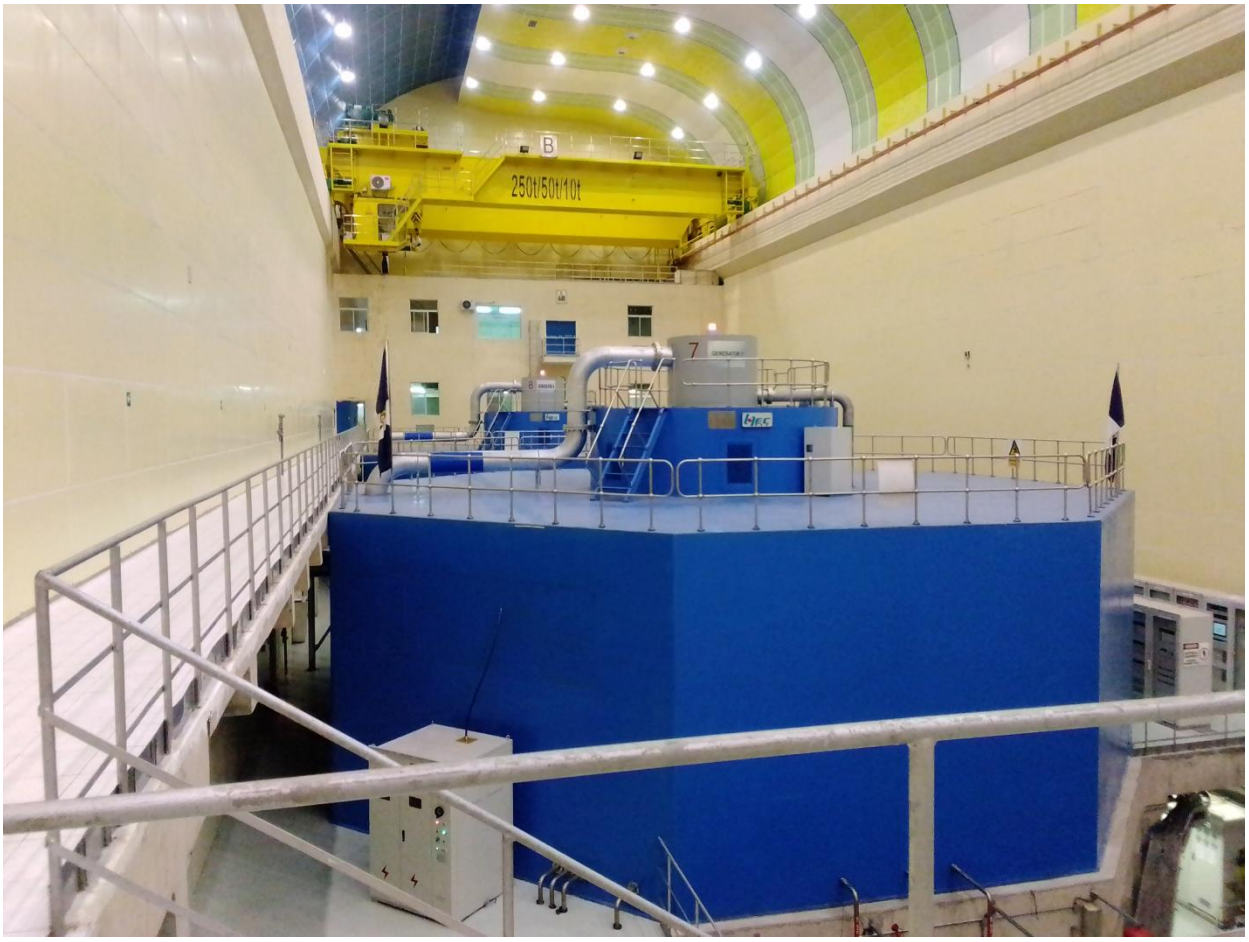
Kariba Power Station remains the country's reliable source of electricity with most of the units available at any given time. Output is usually limited due to water conservation measures.

1.3 Independent Power Producers (IPPs) have now emerged to play a significant role in the supply of electricity with a capacity of more than 100MW having been installed and is feeding into the national grid (Zimbabwe Zhongxin Electric Energy (ZZEE) 50MW, Nyangani Renewable Energy 30MW, Solar IPPs +30MW). A number of other solar projects are still ongoing and ZZEE is set to expand its capacity. The Dinson Thermal Power Plant in Manhize and Zhing Zhou in Hwange are targeting to produce 200 MW. Approximately IPPs are producing 104MW of electricity.

2.0 Major Success Projects under the Second Republic

2.1 Kariba 7&8 Extension Project

In 2018, the Government of Zimbabwe commissioned **300MW** (2x150MW each) from the Kariba Extension Project at an estimated value of **US$440 million** including development costs. The project is a peaking power plant which is meant to provide power during peak demand. The **300MW** new capacity saw Kariba becoming the largest power plant with a combined capacity of **1050MW.**



Units 7&8 at Kariba Power Station generating 300MW

2.2 Hwange7&8 Expansion Project 600MW Thermal Power

Hwange Thermal Power Station was expanded by an additional two units (7&8) which have a combined capacity of 600MW. The project was officially commissioned on the 3rd of August 2023 by His Excellency E.D Mnangagwa after ground breaking ceremony conducted on the 27th of October 2018. The project is significantly contributing towards closing the demand and supply gap through adding 600MW to the national grid.

Unit 7&8 project Commissioning by H.E. President Cde. E.D Mnangagwa

#7 & #8 Boilers

2.3 Zimbabwe Zhongxin Eletric Energy Company (ZZEE)

This is a **50MW** Thermal Power Plant which is Private Sector initiated and is located in the Hwange District. The project was commissioned in February 2022. Through private sector investments, the country is set to expand its generation capacity.

Cooling water tanks for ZZEE Power Plant

ZZEE Thermal Power Plant

Large scale Power initiatives

	Key Result Area	Project/Programme	NDS1 Target	Progress to date
1.	Development and commissioning of new energy infrastructure	Batoka gorge Hydroelectric Power Project	To commence construction by end of 2025	Project preparation activities underway
		Hwange Life extension Project	To rehabilitate all 6 Units by 2025-year end.	Project reached financial close with funding secured from Indian Exim Bank Procurement of PMC in progress.
2.	Backbone Infrastructure	USD800 million Rwanda Energy Group loan Facility	To connect: • 305 000 new connections to clear housing backlog • 250 000 new connections on housing development schemes	Loan application ongoing
3.	Plant maintenance and refurbishment of existing energy infrastructure	Transformer replacement (Afreximbank loan facility)	4000 transformers to be replaced through Imports + local manufacture.	836 transformers manufactured by Zent against a target of 5180
4.	Grid Reinforcement and Strengthening	Zimfund Projects Mutare substation reinforcement Sherwood substation rehabilitation	 To install 75MVA at Mutare substation To install 175MVA at Sherwood Substation	
	Grid Reinforcement and Strengthening (Continued)	Alaska Karoi 85 km Transmission Line + Substation (AfDB funded)	Project is under implementation	
5.	Energy Efficiency	Prepaid Metering	93 000 meters to be procured under AfreximBank loan facility	733,595 installed as of end of May from ZESA's own funding
		Smart metering	1,490 meters installed	

6.	Secure Power Imports	ZESA secured PPAs with: • Eskom 50 firm + 100MW non-firm • HCB 50 firm + 50 non-firm • EDM 50 firm +50 non-firm ZESA can participate on the DAM	PPAs are running smoothly	

3.0 Renewable Energy Projects

3.1 Solgas Solar Power Plant

The solar electricity generation plant has an installed capacity of 5MW (Phase 1) and was officially commissioned on 18 March 2022 by His Excellency the President. It was built at an estimated cost of US$12 million and feeding into the national grid.

Solgas Solar Park

3.2 Power Ventures

Power Ventures is one of the solar power plants licensed to generate 100MW of electricity. Under Phase 1 (25MW), the plant is now at an advanced stage to commission 5MW with bulk of the materials having been received and connected.

The project is located in Hwange District near Victoria Falls.

Solar modules for Power Ventures 5MW plant

3.3 Blanket Mine

The Blanket Mine Solar Power Plant which has a capacity of 12.5 MW was completed and officially commissioned by H.E President E.D Mnangagwa in 2022.

Blanket Mine 12.5 Solar Power Plant

4.0 Other ongoing Renewable Energy Projects

Following the adoption of the Renewable Energy Policy in 2019 which has a target to install renewable energy capacity of 2100MW by 2030, with 1575MW of these being solar PV, a total capacity of over 145MW from renewable sources of power was connected to the grid.

The Energy Regulator, ZERA licensed a total of 104 IPPs to date, covering solar PV, thermal, mini-hydro and gas-fired technologies. Some of the ongoing projects are at various stages of development as follows:

4.1 Grid-connected solar power plants

Project Name	Capacity	General Comments
Riverside Solar plant, Mutoko	2.5MW	Feeding power exclusively to the grid

4.2 Grid-Tied and own-consumption solar projects

These projects are critical as they provide a relief to grid by making power available for other users

Project Name	Capacity	General comments
Tanganda (Pvt) Ltd	1.8MW	• For own consumption
Kefalos	0.6MW	• For own consumption
Nottingham	1.5MW	• For own consumption
Padenga	1.2MW	• For own consumption
Schweppes	1MW	• For own consumption
NatFarm	0.2MW	• For own consumption
SAZ	0.18MW	• For own consumption
Old Mutual head office	0.6MW	• For own consumption
Econet	1 MW	• For own consumption
Blanket Mine (Pvt) Ltd, Gwanda	17.5MW	• Completed and commissioned; • Includes battery storage • Own consumption
Manhize	50MW	• For own consumption
ZIMPLATS	35MW	• For own consumption
TOTAL	**135.58MW**	

N.B: The list above is not exhaustive. Other smaller projects for own consumption and for irrigation are not listed here.

4.3 Solar projects under development

Project Name	Capacity	General Comments

PPC (Byo, and Gwanda)	30MW	○ Byo 10MW, Gwanda 20MW ○ Construction in Byo has began ○ To be completed in 2022; ○ Own consumption
Harava Solar plant, Seke	20MW	○ 6MW installed but not yet connected ○ Transmission line completed ○ Substation under construction
Richaw solar, Gwanda	5MW	○ 2.5MW installed but not yet connected
Munyati solar power plant	100MW	○ Project agreement signed ○ Project to be developed as a PPP venture
Total	**155MW**	

4.4 Solar projects completed

CentraGrid (25MW) was completed in November 2024 and its feeding into the national grid, awaiting commissioning.

4.5 Off-grid solar projects

The Ministry through REA has developed more than 420 Mini-grids distributed around the country at government schools and clinics. REA has finished constructing a 59KW mini-grid solar project at Bemba in Tsholotsho and is planning to replicate this in the rest of the eight rural provinces in the country.

The Private sector has also been developing off-grid solar projects in Rural Areas. Zoneful Energy pvt Ltd, has installed more than 50 000 solar home systems through a Pay-As-You-Go scheme. Another private company is also piloting the PAYG scheme in Gwanda district.

5.0 Mini-hydropower Generation

Nine (9) mini-hydropower plants have been constructed since 2010 in Manicaland Province. Their individual capacities range from 300kW to 15MW giving a total installed capacity of slightly over 31MW. Three mini-hydropower plants namely: Tugwi-Mukosi (15MW), Great Zimbabwe (5MW) and Tsanga A (2.71MW) were constructed as IPPs. Great Zimbabwe is now feeding 5MW into the national grid awaiting commissioning. Tugwi-Mukosi is at preparatory stage. Gwai-Shangani power plant (10MW) is under development

6.0 Electricity Access

According to ZIMSTAT 2022 electricity access is 62%, 34% from conventional electricity and 28% from renewables. In line with the Government Policy of ensuring that no place is left behind, the Ministry through the Rural Electrification Agency (REA) continues to expand rural access to electricity to promote rural development, provision of better education and health services.

Through this programme, more than 10 069 rural institutions including Primary and Secondary schools, rural health centres, government extension offices, business centres, villages and chiefs have been connected to the electricity grid and has transformed livelihood to many

communities. REF collects most of its funds from the 6% Rural Electrification Levy on electricity bills.

The Rural Electrification Agency extends the national grid to Chireya Mission in Gokwe which is a 60 bedded hospital improving the health delivery system in the country

6.1 National Statistics on The Electrification Status of Rural Institutions done by REF as at March2025

Table below shows the national statistics of rural institutions electrified directly by the Rural Electrification Fund.

NATIONAL STATISTICS ON THE ELECTRIFICATION STATUS OF RURAL INSTITUTIONS DONE BY REF AS OF MARCH 2025

Province	Primary Schools	Secondary Schools	RHC/ Clinics	Govt. Ext Offices	Chieftainships		Business Centres	Small Scale Farms	Villages	Others	Total Electrified to Date
					Grid	Solar					
Manicaland	549	283	201	78	36	0	253	78	359	180	**2017**
Mashonaland Central	412	200	128	54	32	2	158	146	55	141	**1328**

Mashonaland East	349	202	160	40	34	2	141	191	202	195	**1516**
Mashonaland West	439	183	84	45	32	4	87	231	135	70	**1310**
Masvingo	389	238	161	88	36	1	205	53	193	122	**1486**
Matabeleland North	340	153	97	68	36	7	123	30	24	81	**959**
Matabeleland South	328	128	94	56	32	0	164	22	136	89	**1049**
Midlands	291	157	115	40	43	5	151	120	194	93	**1209**
Total	3097	1544	1040	469	281	21	1282	871	1298	971	**10874**

SUMMARY OF COMPLETED PROJECTS IN THE PERIOD 1 JANUARY TO 31 MARCH 2025

Province	No. of Institutions	Scope of Works			Total Substation Capacity
		33KV Line (km)	11KV Line (km)	MV Line (km)	
Manicaland	7	1.85	-	4.51	100
Mashonaland Central	7	-	2.34	2.52	275
Mashonaland East	5	0.61	-	1.73	225
Mashonaland West	4	-	0.70	1.86	150
Masvingo	3	2.40	-	0.82	250
Matabeleland North	7	13.40	15.56	2.05	150
Matabeleland South	3	-	1.70	1.55	60
Midlands	23	2.01	14.74	7.17	470

Total	**59**	**20.27**	**35.04**	**22.21**	**1680**

Further to the above, the Agency also managed to provide mobile solar units to 439 institutions. The Rural Electrification Fund has also developed the Rural Energy Master Plan (REMP) which is set to accelerate the rural electrification programme through the use of cos-effective technologies.

7.0 Policy Development, Strategies and Regulatory Frameworks

7.1 Policy development

The following Policies were developed by the Ministry in order to give direction and guide its operations:

- National Energy Policy (NEP), 2012 currently under review
- National Renewable Energy Policy (NREP), 2019. The Policy has a compendium of incentives for RE and targets to be achieved by 2030.
- Biofuels Policy of Zimbabwe (BPZ), 2019. The policy has targets for biofuel production and use.
- Energy Efficiency Policy launched in April 2025

7.2 The following Policy is at an advanced stage of being developed:

- Electric Mobility Policy

7.3 The Following Strategies are at an advanced stage of being developed:

1. **Clean Cooking Strategy**

- The strategy gives an emphasis on clean cooking strategies such as use of liquefied petroleum gas and efficient cook stoves, for instance the tsotso stove. These reduce emissions of green-house gases (carbon dioxide from wood fuels) that deplete the ozone layer.

2. **National Electrification Strategy (NES)**

- The Strategy was developed as a roadmap to scale up electrification efforts in Zimbabwe
- The World Bank commissioned NRECA International to conduct a study on Zimbabwe's National Electrification Analysis. The study comprises three tasks:
  a. Assessing current electrification programs and gap analysis
  b. Evaluating service quality levels and low-cost technology options
  c. Scaling up electrification in Zimbabwe

3. **National Integrated Energy Resource Plan**

- The contract was signed on 22 February 2024.
- The lead consultant is IED in partnership with Artelys and Sustenergy
- Kick off meeting was done on the 8th of March 2024
- Consultant is gathering information from stakeholders
- Inception report was submitted and is under review

4. **Wind resource assessment**

- Wind contract awaits clearance from the bank to sign contract

Clean Cooking Strategy

The Ministry of Energy is planning to launch the Clean Cooking Strategy in the next International Renewable Energy Conference in 2026. The strategy basically encourages better ways of cooking, reducing the use of wood and construction pf biodigesters in rural communities.

Biogas Technology

The Ministry and REF are promoting biogas technology through 2 programmes; The Institutional programme and the Domestic programme

- Institutional Biogas Programme: More than 100 biogas digesters of sizes ranging from $25m^3$ – $200m^3$ have been constructed at institutions such as boarding schools, prisons, hospitals and farms and the gas used for cooking.
- Domestic Biogas Programme: More than 500 biogas digesters of sizes ranging from $6m^3$ – $20m^3$ have been constructed at rural homesteads to provide a clean and sustainable cooking alternative for women and the girl child

Smart cooking using Biogas

Ministry and REF are also involved in capacity building, training local builders (masons) countrywide on how to construct biogas digesters with the recent two training sessions having been conducted between May and June 2022 as follows:-

- Mashonaland Central: Mbire district with 22 builders trained and a $6m^3$ digester constructed and another in

- Matebeleland South: Matobo district with 20 builders trained and a 13m^3 digester constructed.

Trained builders are expected to privately construct digesters countrywide for a fee or are contracted by some private companies.

Biogas digester masons being trained at Katetsi Homestead, Manyere village in Seke District in Mash East in Dec 2021

Liquefied Petroleum Gas (LPG)

There has been an upsurge in the use of LPG as a clean source of cooking energy as compared to firewood and paraffin in the recent years. LPG use has increase 10-fold between 2012 and 2021 (6million tonnes in 2012 and 56million tonnes in 2021). This shows an increase in access to clean energy for Urban, Semi Urban and Rural households.

Efficient Cookstoves

The Ministry and REF promotes efficient sources of energy for the purpose of cooking such as clean cook stoves, solar cookers and biogas-based cookers. In partnership with private players, over 132 000 tsotso stoves have been distributed mainly in Mashonaland Provinces, Manicaland Province and Matabeleland North Province. The target is to reach 250 000 households by end of 2022.

Wind Energy Projects

The Ministry is working with African Development Bank (AFDB) in carrying out wind speed measurements for five (5) sites that were identified by IRENA through satellite studies in 2014. This exercise is expected to run between the period 2022 to the year 2025.

Furthermore, there are two other sites (not included in the five sites above) that were developed by Power China Engineering (Kunming) and Tatanga Energy (Pvt) Ltd. These 2 sites have shown great potential for wind energy power generation with a capacity factor of greater than 40%.

7.4 Regulations

The following regulations govern the energy sector in Zimbabwe:

- Electricity Act, 2002
- Rural Electrification Fund Act, 2002
- Petroleum Act, 2006
- Energy Regulatory Authority Act, 2011

Other **statutory instruments** that support the regulations and policies are the Inefficient Lighting Products Ban and Labelling Regulations of 2017, Net Metering Regulations of 2018 and Electricity (Solar Water Heating) Regulations of 2019 among others.

The Implementation of the **Net Metering Scheme** has resulted in the connection of 82 entities and an additional capacity of 2.4MW was connected to the grid as of May 2022.

Further there are various regulations that are being developed including Energy Management Regulation, Solar products and Installations and Electricity Public Safety Regulation.

8.0 Petroleum sector projects

As alluded before, most of the petroleum products consumed in the country are imported with the bulk of the fuel being transported through the pipeline. As an import substitution mechanism, Zimbabwe adopted ethanol blending to cut on fuel import bill and also reduce carbon emissions. Blending is up to 20% depending on availability of ethanol. Bulk of the ethanol comes from Chisumbanje and Triangle sugar estate.

8.1 Mabvuku Ethanol storage facility

This project involves the construction of 2x3000 m^3 ethanol storage facility in Mabvuku. The project is being done by the National Oil Infrastructure Company of Zimbabwe (NOIC)**. C**ommissioning of the project is expected by September 2022 and its main objectives is to ensure maintenance of consistent blending ratio through the provision of adequate ethanol in the country at all seasons. It will also reduce the import bill of petroleum products through import substitution.

Mabvuku 6 million litres ethanol storage facilities

8.2 LPG Storage Depot

- To address the low LPG storage capacity, NOIC is constructing a 2000MT LPG storage facility at Ruwa.
- The project is being implemented in phases, with the first phase of 640MT completed in 2024.
- Work has already started on the second and final phase which is expected to be completed by end of 2026.

8.3 Pipeline upgrade project

The government through NOIC's subsidiary PetroZim Line (Pvt) Ltd (PZL) has also embarked on a pipeline capacity upgrade. The project is being implemented in phases with the first phase targeting to achieve a capacity of 3 billion litres per annum and then subsequently 5 billion litres per annum. Through this project, Zimbabwe will have excess pumping capacity to be the hub of fuel transportation and distribution in the Southern African region.

9.0 Future plans

As demand increases based on the current growth driven by the mining sector, the Ministry together with private sector will continue development of the ongoing new capacity projects including hydro, solar, wind, new clean coal and gas projects – initially targeting Mozambique gas. These will include grid reinforcement and rehabilitation projects. Incentives for renewables will be enhanced with Government Implementation Agreement which will deal with the currency risk.

Government to deliberately move away from unsolicited bids for energy projects and adopt a Competitive bidding system particularly for IPPs in the renewable energy sector. This is at an advanced stage as the GIA and standard PPA get piloted and the procurement system is being finalized

Increase local assemble and innovation in the sector and develop a green hydrogen policy and strategy

Government to adopt the Energy Efficiency Policy and the industry to adopt Minimum Energy Performance Standards (MEPS), mandatory energy audits and other measures in order to improve the uptake of energy efficiency.

Develop a clean cooking stove strategy and work with local developers and companies to produce efficient biomass stoves locally – Ministry is working with local companies and champions on this.

Proceed with renewable resource feasibility studies that is Wind resource and geothermal as a way of accelerating uptake through auctions for identified sites

Proceed with the current work with development partners relating to:

- Development of an integrated resource plan building on the current REMP, National network master plan and least cost solar deployment plan which are being finalized
- Energy efficiency program design for public sector
- Protection scheme coordination on SAPP interconnection
- Review tariff methodology and regulatory accounting framework
- Lease cost Assessment of Service Quality Levels & Low-cost Technology Schemes for Electrification are ongoing.
- Draft National Electrification Analysis Report, Consultation and Dissemination and the Final National Electrification Analysis Report

9.1 SUMMARY OF KEY INTERVENTIONS

SHORT TERM

1. **Increasing internal generation capacity**

- Maintenance and rehabilitation of existing infrastructure
- Commissioning of on-going projects both public and IPPs
- Increase in net-metering customers
- Solar off grid and mini grid systems
- Competitive Procurement of 500MW solar

2. **Energy efficient and demand side management**

- Continued training of efficient management professionals and certified auditors
- Implementation of solar water heating and
- Solar water heating regulations and production
- Awareness campaigns on energy efficiency
- Use of gas instead of electricity for cooking

3. **Increase in imports**

- Additional input from SAPP members (ESKOM, HCB and EDM)
- Additional imports from ZESCO
- Allow large exporting and intensive user customers to directly from the Region
- Renewable Energy Policy implementation
- Standard PPA and GSA

MEDIUM to LONG TERM

1. **Explore the Zambezi River Basin Hydro-potential (10 gauges projects)**

- Batoka 2400MW
- Mphanda Nkuwa
- Other IPP Projects
- Implementation of Natural Gas and Coal bed methane projects
- Development and implementation of green hydro projects
- Increased capacity from IPPCs
- Green hydrogen