



Energy Regulation in Zimbabwe

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**CAPACITY BUILDING WORKSHOP ON DEVELOPMENT OF CDM
ACTIVITIES AND NAMA FOR PUBLIC AND PRIVATE SECTOR IN
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Energy Regulatory Structure

**MINISTRY OF ENERGY
AND POWER DEVELOPMENT**



Oil Companies



ZERA's Mandate

- The Zimbabwe Energy Regulatory Authority (ZERA) is a body corporate established in terms of the Energy Regulatory Authority Act [*Chapter 13:23*] of 2011.
- Mandated to regulate the entire energy sector in Zimbabwe in a fair, transparent, efficient and cost effective manner for the benefit of the consumers and energy suppliers.
- Derives its mandate from the Energy Regulatory Authority Act [*Chapter 13:23*] of 2011 read together with the Electricity Act no 4 of 2002 [*Chapter 13:19*] and its subsequent amendments and the Petroleum Act [*Chapter 13:22*] of 2006



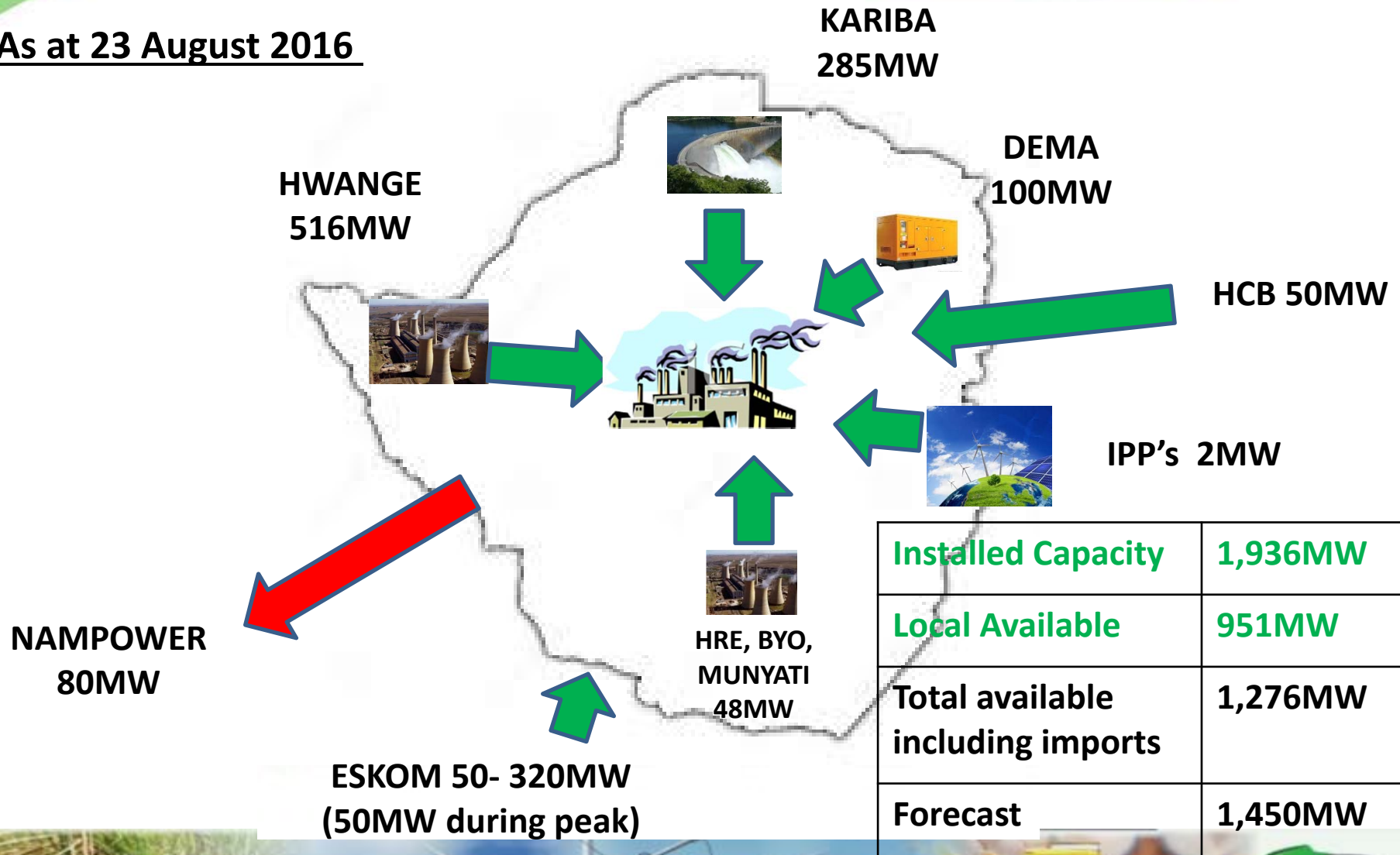
ZERA's key objectives

- To ensure security of energy supply;
- To encourage energy efficiency both at utility and consumer levels;
- **To encourage use of renewable energy and environmental protection;**
- To regulate in a fair and transparent manner;
- To encourage competition and;
- To create an effective Authority that delivers its mandate and mission.



Power Supply Status

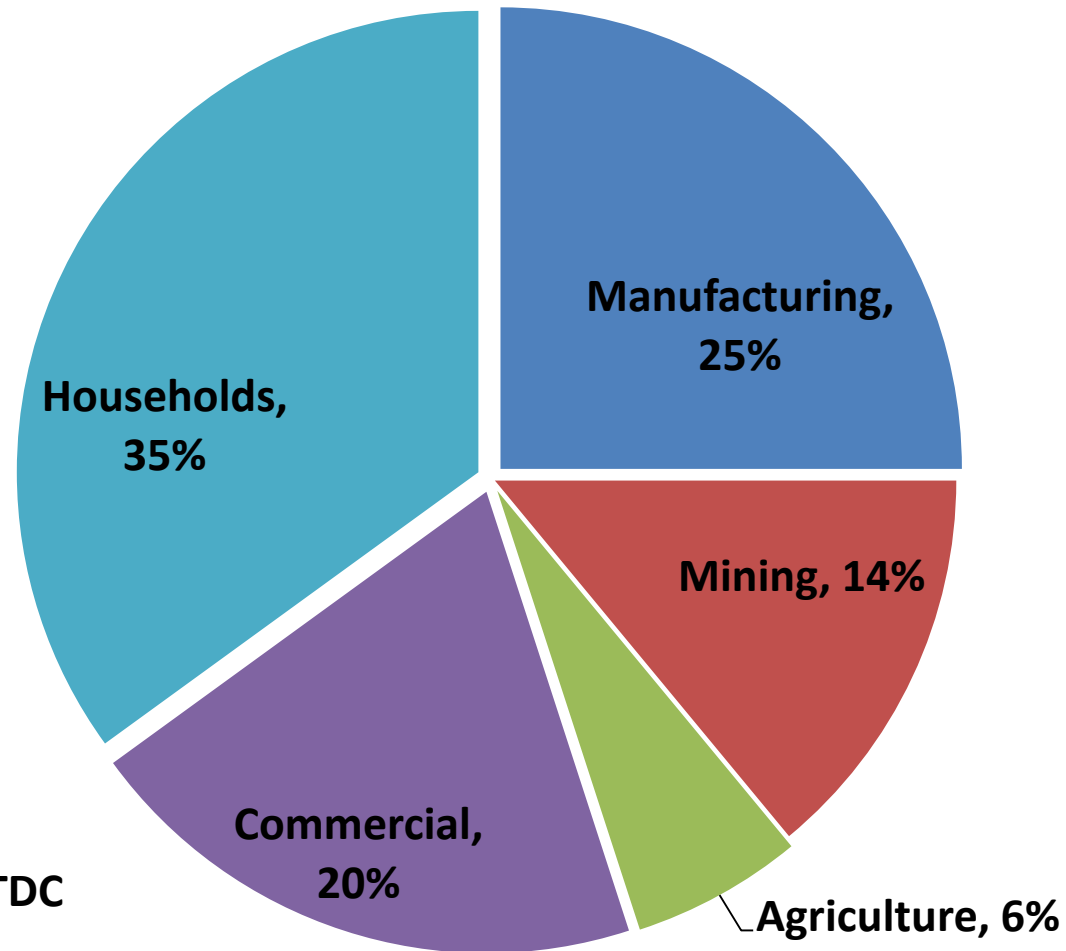
As at 23 August 2016



SHORTFALL - 174 MW



Consumption Patterns by Sector



Source: ZETDC



Projects to Address Energy Supply

State Owned Projects

Project	MW	Estimated Cost	Completion Date
Emergency Power (diesel)	200	TBA	2016
Hwange – Life Extension	160	\$500 million	2018
Hwange expansion (Financial close)	600	1,5 billion (new plant)	
Small Thermals Repowering Projects	240	\$300 million	2017-18
Kariba South Extension (construction)	300	\$533 million (EPC Cost: \$354.9 million)	2017/18
Gairezi Hydro Power Plant	30	\$110 million	2017
Solar Power Plants	300	\$600 million	2017
Peaking / Emergency Power Plant	120	\$110 million	2018



Licensed Power Projects – Private Sector

STAGE OF DEVELOPMENT	LICENCED PROJECTS
Stage 1 - Concept/ Pre-feasibility stage	Sengwa Power Station (1 200MW), Geobase Gwanda Solar (50MW), Great Zimbabwe Hydro (5MW), Manako Power (2.5MW), H T Gen (3.3MW), Yellow Africa (50MW)
Stage 2- Feasibility/Proof of bankability	Lusulu (600MW phase 1) Gairezi Power Station. Plum solar (5MW), China Africa Sunlight Energy Gwayi Power Station (600MW)
Stage 3 – Funding	Southern Energy (660MW) , (Hwange Power Station)
Stage 4- Construction	Kupinga Renewable Energy (1.6MW), (Kariba Power station - 300MW)
Stage 5 - Operational (30MW –Grid & 75MW own consumption)	Border Timbers (0.5MW), Duru (2.2MW), Nyamingura (1.1MW), Pungwe A (2.75)MW, Pungwe B (15.25) & C (2.72)MW), Hippo Valley Estates (33MW), Triangle Estates (45MW), Green Fuel (18.3MW)



ZERA RE & EE Initiatives

Energy	
Manufacturer	
Model	
More efficient	
A	
B	
C	
D	
E	
F	
G	
Less efficient	



Renewable Energy Feed In Tariff (REFIT)

- ZERA has developed the renewable energy feed in tariff (REFIT) scheme which is yet to be implemented.
- REFIT is a policy instrument that mandates power utilities operating the national grid to purchase electricity from renewable energy sources at a pre-determined price so as to stimulate investment in the renewables sector.
- The Feed in Tariffs were developed for RE technologies applicable to Zimbabwe such as Solar PV, Small Hydro, Biomass, Bagasse and Biogas.
- The REFIT is meant to promote RE projects up to a maximum capacity of 10MW



Drafted Regulations

- 1) Net metering regulations
- 2) REFIT
- 3) Solar water heating regulations
- 4) Inefficient Lighting Products Ban and Labelling regulations
- 5) Solar PV Industry regulations
- 6) Energy management regulations
- 7) Solar PV integration code
- 8) Third Party Access code



PUBLISHED SOLAR PV SYSTEM STANDARDS

STANDARDS REFERENCE	TITLE
ZWS IEC 61646	Thin film terrestrial PV Modules-Design qualification and type approval
ZWS IEC 61215	Crystalline silicon terrestrial PV Modules-Design qualification and type approval
ZWS IEC 62124	PV stand-alone systems- design verification
ZWS IEC 62509	Battery charge controllers for PV systems- performance and functioning
ZWS IEC 60904-9	PV Devices-Part 9: Solar simulator performance requirements
ZWS IEC 60364-7-712	Electrical installations in Buildings Part 7-712: Requirements for special installations or locations –Solar PV power supply systems
ZWS IEC 62109-1	Safety for power converters for use in PV Power Systems-Part 1: general requirements
ZWS IEC 62109-2	Safety for power converters for use in PV Power Systems-Part 2: particular requirements for inverters
IEC 62116	Utility interconnected PV inverters-test procedure of islanding prevention measures
IEC 61683	PV power conditioners procedures for measuring efficiency
COMESA ZW HS IEC 61427:2009	Secondary cells and batteries for photovoltaic energy systems (PVES) – General requirements and methods of test
ZWS 322:1993	Photovoltaic modules
ZWS 522:1999	Batteries for use in photovoltaic systems
ZWS 524:1998	Charge controllers for photovoltaic systems using lead-acid batteries
ZWS 536:1998	Design, sizing and installation of battery based photovoltaic systems

Other Initiatives in the pipeline

- 1) ZERA will soon be commissioning SOLAR PV SYSTEM DESIGN AND INSTALLATION TRAINING
- 2) Wind Energy Resource Assessment with a view to develop a wind atlas for Zimbabwe.
- 3) National Energy Integrated Resource Plan
- 4) Power Procurement Regulations
- 5) IPP Policy Framework



Certified Energy Management Training



ZERA sponsored a Certified Energy Management (CEM) training for 60 energy professionals in Zimbabwe in order to build local capacity in energy efficiency. We now have at least 30 Certified Energy Managers



National EE Audit 2015

- ZERA commissioned NEEA in 2015- objective was
 - to determine the country's energy intensity baseline
 - Identify potential energy saving in various all sectors of the economy
 - To come up with energy efficiency policy framework
- Results show that up to 377MW can be saved if energy efficiency measures are implemented



Potential Savings By Sector

Sector	Saving %	Electricity (GWh/y)
Agriculture	12	58.75
Commercial/ Building	16.0	247.62
Domestic	22.08	619.47
Manufacturing	18.63	380.07
Mining	7	87.05
<i>Total electricity savings</i>		1,392.96



R&D projects Funding

INSTITUTION	PROJECT	AMOUNT
Chinhoyi University of Technology	The design of a tobacco curing system using solar energy and a biomass back-up heat exchanger unit.	77,050.00
Harare Institute of Technology	Mobile Jatropha Curcas Multipurpose Processing Plant.	70,000.00
University of Zimbabwe	Solar Water Heaters for Zimbabwe. DSM,GHG-emission abatement, consumer economics and rolling out	87,120.00
Total		234,170.00



Energy Efficiency in the Home

Stoves experiments



Experiments



Induction
stove



Geyser timer switch



Ethanol stoves

Electric buckets



Energy Efficiency Experiments in Conjunction with SIRDC



ZERA EE CSR Initiatives

- LED retrofitting lighting projects at;
 - *Harare Central Children's Hospital*
 - *MOEPD Offices*
 - *ZERA Offices*
 - *Mpilo Hospital*
- Mathew Rusike, Emthunzini Wethemba (LED and solar water heating), Chinyaradzo Energy Efficiency, Siakhobvu Police Station (solar) and lighting



LPG Promotion

ZERA is also promoting the use of Liquefied Petroleum Gas (LPG) to reduce cooking load during peak hours.

ZERA has launched regulations and standards for the safe use of LPG .



Thank You

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ZERA
ZIMBABWE ENERGY REGULATORY AUTHORITY

EnergyTalk

