ELECTRICITY SUB-SECTOR

The electricity supply industry (ESI) is dominated by a government owned utility namely ZESA Holdings with its subsidiaries viz: Zimbabwe Power Company (ZPC) and Zimbabwe Electricity Transmission and Distribution Company. ZPC operates and manages five power stations while ZETDC carries out the system/network operator function, operates the transmission and distribution networks and conducts trade regionally through the Southern African Power Pool (SAPP). Some independent power producers also operate through production for own consumption or for trading.

Who Is Regulated?
ZERA regulates any person or private companies that operate an electricity undertaking which generates, transmit, distributes, or retail electricity for commercial purposes in excess of 100 kilowatts (kW).

How Are They Regulated?
ZERA issues the following licences subject to applicants satisfying the terms and conditions spelt out in the relevant Acts:

(a) **Generation licence** authorises the licensee to construct, own, operate and maintain a generation station for purposes of the generation and supply of electricity to any transmission, distribution or supply licensee who purchases electricity for resale to consumers. A holder of a generation licence includes a generating company outside Zimbabwe that is entitled under an arrangement approved by the Authority to sell power to Zimbabwean licensees or consumers.

(b) **Transmission and bulk supply licences** authorises the licensee to carry out grid construction, operation, and maintenance of transmission facilities within Zimbabwe; and to carry out the operation of an electric power network.

(c) **Distribution and retail supply licences** authorises licensee to construct, operate and maintain a distribution system and facilities including the connection of customers for the purpose of receiving a supply of electricity; the installation, maintenance and reading of meters, billing and collection.

ZIMBABWE

**Governmental framework**

The sector is primarily controlled by state-owned Zimbabwe Electricity Supply Authority Holdings (ZESA Holdings), which generates, imports and distributes all electricity in the country through its subsidiaries Zimbabwe Power Company (ZPC) and Zimbabwe Electricity Transmission and Distribution Company (ZETDC). The National Energy Policy 2012 foresees the unbundling and privatisation of what is effectually a vertically-integrated system. Initial steps have been taken towards reaching this goal, but private sector participation in electricity services is yet to be actualised.

Although the government has stated that renewable energy is crucial for energy sector development, the legal framework has thus far not actively promoted investments in this field. According to the Zimbabwe Electricity Regulatory Authority, a feed-in tariff has been developed for renewable energy plants up to 10 MW. However, the scheme has not yet been made public. Moreover, in 2014 the agency announced that a renewable energy policy would be formulated in
cooperation with the Ministry of Energy and Power Development. The policy may contain clearer targets for the expansion of renewables in the country.

**Government Institutions**

**Ministry of Energy and Power Development (MEPD)**
The Ministry of Energy and Power Development has overall responsibility for energy issues in Zimbabwe. Its mandate includes policy formulation, performance monitoring and regulation of the energy sector as well as research, development and promotion of new and renewable sources of energy. The Ministry supervises and oversees the performance of the energy utility and its subsidiaries. The current acting minister is Samuel Undenge. [http://www.energy.gov.zw/](http://www.energy.gov.zw/)

**Zimbabwe Electricity Regulatory Authority (ZERA)**
The Zimbabwe Energy Regulatory Authority (ZERA) is a statutory body established in terms of the Energy Regulatory Act 2011 read in conjunction with the Electricity Act of 2002 and the Petroleum Act of 2006. ZERA’s primary function is to regulate the energy sector. The agency seeks to create an enabling environment for competition and thus promotes an efficient electricity supply industry. The Energy Regulatory Act confers upon ZERA the authority to license any and all players in generation, transmission, distribution and supply of electricity as well as to regulate and approve tariffs. [http://www.zera.co.zw/](http://www.zera.co.zw/)

**Rural Electrification Agency (REA) and Rural Electrification Fund (REF)**
The government recognizes the fact that rural electrification is a major pillar in enhancing socio-economic development in rural communities. As a result, it established the Rural Electrification Fund (REF) in 2002 and later the Rural Electrification Agency (REA). The agency’s main focus is to spearhead rapid and equitable electrification of rural areas in Zimbabwe. To date, the rural electrification program has enabled the electrification of more than 5,000 rural institutions, farms, villages, boreholes, dam points and irrigation schemes. The National Energy Policy 2012 puts emphasis on the coordination of the electrification program, setting of realistic targets and the determination of the appropriate mix of on- and off-grid technologies by the government. [http://www.energy.gov.zw/index.php/power-development/rural-electrification-programme](http://www.energy.gov.zw/index.php/power-development/rural-electrification-programme)

**Zimbabwe Electricity Supply Authority (ZESA)**
The Zimbabwe Electricity Supply Authority (ZESA) is a state-owned and only company whose task is to generate, transmit and distribute electricity. It delegated these tasks to its subsidiaries, the energy generator Zimbabwe Power Company and the Zimbabwe Electricity Transmission and Distribution Company. Further subsidiaries are the investment branch ZESA Enterprises and the internet provider PowerTel Communications (Pvt) Ltd.
The company’s mandate includes:

- Safeguarding the government’s interests in ZESA and the Electricity Supply Industry
- Coordinating the government’s policy issues relating to the Electricity Industry
- Controlling group financial resources
- Reporting on group performances
- Managing cost efficiency and service quality to customers
- Optimization of benefits to be realized through privatization, protection and growth of shareholder value
- Promoting and underwriting prudent utility practice in the unbundling subsidiaries
- Ensure Strategic Planning and Risk Management
- Ensuring Feasibility, research and development activities
- New business development
- Regional and International Relations

http://www.zesa.co.zw/
Zimbabwe Power Company (ZPC)
The Zimbabwe Power Company (ZPC) became operational in 1999 as an investment vehicle in the generation of electricity. The organization has been authorized to construct, own, operate and maintain power generation stations for the supply of electricity.
ZPC currently operates four coal-fired power stations, Hwange, Bulawayo, Munyati and Harare thermal stations and the hydro power station Kariba. They have a total of 1,960 MW of installed capacity.
Each power station holds a generation license from the Zimbabwe Electricity Regulatory Authority. The company’s mandate is to generate electricity for the domestic market. The small thermal power stations operate as embedded generators (i.e. power stations that are directly connected to the distribution network) but are only dispatched to meet supply shortfalls.

http://www.zpc.co.zw
Zimbabwe Electricity Transmission and Distribution Company (ZETDC)
The Zimbabwe Electricity Transmission and Distribution Company (ZETDC) is a subsidiary of ZESA Holdings. ZETDC is responsible for the transmission of electricity from the power stations, the distribution of electricity as well as its retailing to end users. Its mission is to provide adequate, safe, reliable electricity and related services at competitive prices. The company combines two branches:
The Zimbabwe Electricity Distribution Company is in charge of the distribution and retail of electricity to the end user. It is responsible for the distribution asset management and carries out network planning, development, operation and maintenance. The branch also intends to widen the customer base and conducts the pricing. The Zimbabwe Electricity Transmission Company balances supply and demand and the transmission of electricity from domestic generation plants as well as electricity trading in the Southern African Power Pool.
ZETDC has been struggling financially within the last years. In February 2015, the CEO of ZPC stated that ZETDC owed the power generator more than 558 million USD. ZETDC had tried earlier to raise the electricity tariffs. These efforts, however, were rejected by the Regulatory Authority.

http://zetdc.co.zw
Zimbabwe National Water Authority (ZINWA)
The Zimbabwe National Water Authority is a wholly Government owned entity tasked with managing the country’s water resources. The Authority was created through the ZINWA Act as part of the Government’s efforts to reform the country’s water sector.

http://www.zinwa.co.zw/what-is-zinwa/
Standards Association of Zimbabwe (SAZ)
SAZ is mandated to facilitate the development and use of standards for technologies, industries, and business in Zimbabwe. As of 2015, SAZ was reportedly partnering with ZERA to setup a solar equipment testing laboratory.
http://www.saz.org.zw

Industrial Development Corporation of Zimbabwe
The Industrial Development Corporation of Zimbabwe Limited (IDCZ) is a self-financing, national Development Finance Institution (DFI) established in 1963. It is a wholly Government-owned state enterprises, however is registered in terms of Companies Act (Section 3) of Zimbabwe as a limited liability company.
http://www.idc.co.zw/

Zimbabwe Investment Authority
The Zimbabwe Investment Authority (ZIA) is the country's investment promotion body set up to promote and facilitate both foreign direct investment and local investment. ZIA is an institution born out of the merger of the Export Processing Zones Authority (EPZA) and the Zimbabwe Investment Centre (ZIC) to create a one stop shop for investment facilitation. Investors and developers can work with ZIA on issues related to investment license applications; visa, residence, and work permit considerations; and the navigation of various government agencies.
http://www.investzim.com/


Rural Electrification Fund Act, 2002
The Rural Electrification Act enabled the establishment of the Rural Electrification Fund Board, which holds and distributes money from the REF for rural electrification projects. It also paved the way for the expansion of the national electricity grid to rural government institutions, business centres and chiefs' homesteads. The Act also allows decentralised renewable energy electrification.

National Electricity Act, 2002
The National Electricity Act established the Zimbabwe Electricity Regulatory Commission (ZERC). The agency was responsible for licensing operators in the electricity sector, setting electricity tariffs, as well as the general regulation of the electricity sector. ZERC was dissolved following the establishment of ZERA in January 2012, and all of its duties were transferred to its successor.

Energy Regulatory Act, 2011
The Energy Regulatory Act led to the establishment of ZERA, whose board has the power to issue and withdraw licenses to all players in the electricity, petroleum and renewable energy sectors. It is responsible for creating a legal framework that promotes fair competition among both private and public players.

National Energy Policy, 2012
The National Energy Policy sets out a framework for measures that contribute to the development of the sector. Its objectives are to accelerate economic development, facilitate rural development, promote small and medium-sized enterprises, and ensure environmentally friendly energy development and efficient utilisation of energy resources. The policy foresees the unbundling and privatisation of ZESA. It assigns an important role to renewable energy in achieving increased electrification rates and reliable on-grid supply. The policy endeavors to leverage the strong potential of renewable energy.
renewables through the adoption of a long-term, government-led renewable energy technologies programme. It also targets the installation of an additional 1,250 MW of large hydro capacity by 2020.

In the policy document, the ministry announced the implementation of regulations for the installation of solar water heaters in all new homes, the provision of incentives for retrofitting existing water heaters and the introduction of feed-in tariffs to promote on-grid and off-grid PV applications.

Electricity (Licensing) Regulations, 2008

The Electricity Regulations provide indications for the issuance of generation, transmission and distribution licenses by ZERA, including application guidelines.

Electricity Licensing Guidelines and Requirements, 2013

The Electricity Licensing Guidelines and Requirements provide simple guidelines on the license application process, including required documentation. It applies to systems above 100kW.

Zimbabwe Grid Code, 2013

The Grid Code establishes the basic rules, procedures, requirements and standards that govern the operation, maintenance, and development of the electricity distribution systems in Zimbabwe.

Environmental Management Act, 2002

The Environmental Management Act provides for the sustainable management of natural resources and protection of the environment in accordance with global commitments. Energy is a prescribed activity under schedule 1 of the Act. Thus an Environment Impact Assessment is mandatory for all energy projects to be undertaken.

Water Act, 1998

The Water Act regulates the development and utilisation of water resources within Zimbabwe such as for inland dams with potential for hydropower generation, in addition to their primary purpose of irrigation and urban water supply.

Zimbabwe National Water Authority (ZINWA) Act, 1998

ZINWA is required to undertake and publish the results of research and hydrological and geographical surveys and to develop and maintain a database on hydrological issues of interest for the development and exploitation of water resources in Zimbabwe. Hydrological data is required for planning hydro generation systems on inland dams and perennial rivers. Provides for tariffs for water users. All hydro systems pay consumptive use tariff for water.

Investment Considerations

Laws and Regulations Governing Foreign Direct Investment

The major acts governing investment and business registration in Zimbabwe include the Companies Act, Competition Act, Zimbabwe Investment Authority Act, Labor Amendment Act of 2015, and the Deeds Registration Act. Enacted in 2007, the Indigenization and Economic Empowerment Act, requires that “indigenous Zimbabweans” (i.e. black Zimbabweans) own at least 51 percent of all enterprises valued over $500,000. Zimbabwe complies with International Financial Reporting Standards incorporating International Accounting Standards and Interpretations (IFRS).
Renewable Energy Investment Incentives
Energy investors in Zimbabwe may qualify for a tax holiday (negotiable), National Project Status, exemptions from payments of withholding tax, guaranteed dividend payments and repatriation.
Hwange Power Station

Situated in the North Western part of Zimbabwe, Hwange Power Station is the largest coal-fired power station with 920MW installed capacity which comprises of 4x120MW and 2x220MW units. It is the 14th largest thermal station in the Southern African region and is adjacent to Wankie Colliery Open Cast Mine. The station was built in two stages. The 4 x 120MW units were commissioned between 1983 and 1986 and the 2 x 220MW were commissioned in 1986 and 1987. All six units are available and the station currently generates about 40% percent of the country’s electricity needs.

Coal is delivered to the station by an overland conveyor belt which is 6 km long from Hwange Colliery Company Limited (HCCL) as well as by trucks from Makomo and Coalbrick mines. Water which is piped 44 kilometers from the Zambezi River is pumped into two 150,000 m3 reservoirs next to the station and conveyed by gravity to its point of use.

Hwange Power station operates as a base load station, with its availability averaging 80% and a plant load factor of 65%. The station designs largely represent technologies of the late 1960s and some of the equipment such as the boiler controls has had to be replaced with modern digital process controls.

Management of Hwange Power Station was transferred from ZESA to ZPC in January 2001 – the first station to be a part of the electricity sector’s restructuring exercise. As part of this exercise, work practices have been reviewed and staff training course introduced. Also to enhance operational efficiencies and to train employees, ZPC engaged a consultant for this purpose and is conducting on the job training as well as external training. This has led to a more commercial mind-set among employees and has in turn increased output from the station.

The almost 700 staff members are housed by the station and they also have access to three clinics, pre-schools, two primary schools and a secondary school, a well as a beer hall, a social club and sports facilities for the workforce and its dependents.

Harare Power Station

This Power station is located in the Workington area of the capital city along Coventry road. Station 1 commissioned in 1942 had a capacity of 21MW but was decommissioned in 1970. Station 2 had an initial capacity of 75MW when it was commissioned in 1955, but it was de-rated to 20MW due to uneconomical units. This station consists of nine chain-grate boilers and six turbo-alternators. Five boilers and three turbo-alternators have since been decommissioned.

With a capacity of 60MW, Station 3 consists of pulverized fuel-fired boilers. The station also has two large turbo-alternator machines producing 30MW each. Currently one of the turbo alternators is not in service as it is awaiting turbovisory equipment for it to return to service.

Stations 2 and 3 operate independently but they are linked electrically through four interconnector transformers. Presently, the dependable capacity for Station 2 is 20MW while Station 3 has a dependable capacity of 30MW.
Kariba South Power Station

In 1955, it was decided to dam the Zambezi River at the Kariba Gorge to supply power to Zimbabwe and Zambia. Three years later and despite many difficulties, including record breaking floods, the Zambezi River was dammed and Lake Kariba began to form.

In 1956, engineers started to mine a vast cavern that would house a power station, about 174 metres below the ground and by 1959, the first generator was commissioned. All 6 generators were in operation by 1962, with a generation capacity of 666MW. The station has since been uprated to 125MW per unit making the total installed capacity 750MW. Currently the output from the station is slightly lower than 750MW because of the opening of the flood gates which tend to lower the head.

Electricity is generated by drawing water from Lake Kariba through a short horizontal intake via a radial gate and through a vertical penstock to the turbine spiral casing. After passing through the turbine and producing power in the coupled generator, water at reduced pressure is passed through a suction cone and draft tube to the tailrace. This is discharged downstream of the dam, back into the Zambezi River.

The Zambezi River Authority (ZRA), a statutory body formed by the Zimbabwean and Zambian governments, is responsible for the allocation of water used by Zimbabwe’s Kariba South and Zambia’s Kariba North Power Stations.

Kariba South Power Station is used for frequency, tie line and automatic generation control and the station’s operational efficiency is above 90 percent. Depending on inflows into the lake, the station can generate a maximum of 5000 GW/hrs with a load factor of 80 percent.

Bulawayo Power Station

Located in the second-largest city of Zimbabwe, Bulawayo Power Station is connected to the national grid through 11kV and 33kV systems.

The plant was commissioned between 1947 and 1957 as an undertaking by the Municipality of Bulawayo. It joined the Zimbabwe Electricity Supply Authority in 1987 after the amalgamation of all the Local Authority Electricity Undertakings, the Electricity Supply Commission power station at Munyati and Hwange, and the Central African Power Corporation station at Kariba. Unbundling of business units has resulted in the plant joining Zimbabwe Power Company.

While Bulawayo Power Station initially had an installed capacity of 120MW, a refurbishment exercise in 1999 on the ageing plant gave it a new lease of life. The station capacity is now 90MW. The main materials needed for the generation of electricity are coal, water, chemicals, oil, greases and spare parts for maintenance. The station currently generates an average of 30MW.

Bulawayo Power Station continually strives to uphold ZPC’s operational corporate objectives – to achieve operational excellence by improving plant availability, reliability and efficiency, to international standards.
Munyati Power Station

Munyati Power Station is situated five kilometers off the Harare-Bulawayo Road at the 183-kilometre peg. Built in stages between 1946 and 1957, the thermal station originally had a capacity of 120MW but currently operates at a capacity of 100MW.

Coal is railed from Hwange Colliery, about 618 kilometres away. The boilers are designed to burn “washed peas” coal. Water is drawn from two sources: the Sebakwe River through a 23-kilometre long canal and the Munyati Weir through a 3-kilometre pipeline.

Munyati Power Station currently has a staff complement of 147 employees, most of whom are accommodated by the station. Because of the distance being a fair distance from other city centers has its drawbacks, the station has put in place excellent facilities for its staff, including a clinic for all employees and their dependents, a primary school for 600 pupils, a secondary school for 300 pupils, and a library.

In addition, there is a guesthouse; a sports club with facilities for most sports, including squash and bowling, a sports bar, and a beer hall.