ZAMBIA DEVELOPMENT AGENCY

Investment for Prosperity

Zambia's Investment Opportunities in the Energy Sector

ZIMBABWE-ZAMBIA ENERGY PROJECTS SUMMIT

CHIMUKA NKETANI – Director Investments

2. Conducive Environment

01 Good Leadership and Transparency

02 Private Sector Driven Policies

03 Available Skilled Workforce

04 Infrastructure Availability

05 Favorable Tax regime

06 Political stability and rule of law

07 Peaceful and in Harmony with neighbors

08 100% Repatriation of Profits

Staff leader

Invest in Energy

Overview

- About 3.8GW of installed capacity
- 85% hydro
- 9.9% Coal
- 6.0 Solar/HFO
- 2.6 Diesel
- Projected increase in Demand, up to 120%

Energy regulation adjustments

- Energy Single Licensing System (ESLS) – One Stop Shop
- Open Access
- Power Purchase Agreements
- Generation capacity projection to grow from 3,705 MW to 10,013 MW by 2030 and to 23,193 MW by 2050
- Multi-year tariff Framework to improve the tariff to match the market
- Net-metering
- Streamlined regulation for projects below 5MW – no need for Feasibility study and standardized rates of US7 cents per KWH (without storage)

Huge untapped potential and fast-growing markets offer unique opportunities in Zambia's renewable energy industry

High generation potential at low production cost

- Enormous hydropower, solar and wind potential, currently largely untapped

Rapidly growing domestic and regional markets

- Growing domestic C&I market, driven by mining and manufacturing sectors
- Significant export potential, with room to fill electricity supply gap in the region

Abundance of natural resources and low cost of production give Zambia an edge in renewable energy generation

Copious natural resources are available to generate clean power

Immense hydropower resources[1]

- Home to **40% of Southern Africa's freshwater resources**, incl. Zambezi, Kafue, Luangwa and Chameshi Rivers
- **6 GW of hydropower potential**, of which ~3.6 GW are currently untapped

Solar irradiation levels amongst highest in the world

- 2,000 to 3,000 hours of sunshine annually, offering **2.3 GW potential**, of which only 76MW is installed[2]
- Irradiation levels are **5.9 kWh/m2/day**[2,3]
  - Vs. 5.4 in Mozambique, 5.6 in SA, 5.2 in DRC and 5.7 in Tanzania

Vast wind power potential

Wind potential of **up to 6 GW**[1], with several projects currently under development

- Examples include: Pensulo (130MW), Muchina (100MW), Masaiti (100MW)

Renewable energy plants can be installed at relatively low cost

Compelling tax incentives[1]

- **Duty-free import** of equipment and machinery
- **Accelerated depreciation** on capital equipment
- **0% duty and 0% VAT** on selected components of solar mini grids, solar lanterns and SHS

Accessible landscape, reducing cost of wind and solar installations

- **Large blocks of land** allow for large-scale installations, lowering cost per kWH
- **Flat landscape** facilitates installation efforts, leading to lower construction (labour) costs

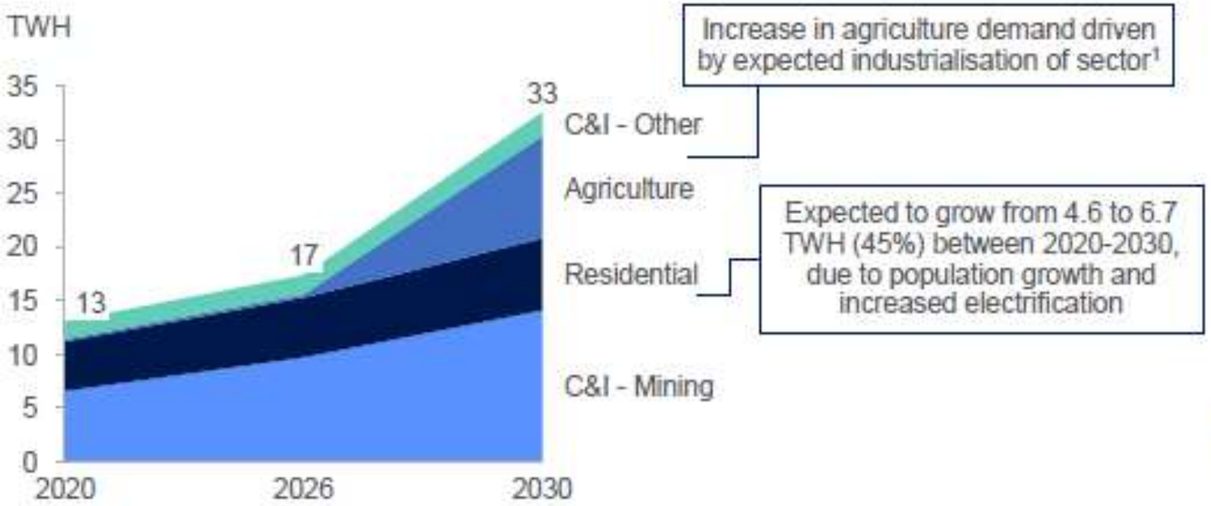
Government actively encourages private sector investment[4]

- Independent power producers allowed to **feed into the grid**
- Projects up to 20 MW procured through **REFIT policy and GET FIT programme**
- **Scaling Solar programme** implemented to enable private sector investment in solar projects

1. ZDA (2023): "Zambia trade & investment opportunities; 2. IEA (2019): "Solar Energy – Mapping the road ahead"; 3. Global Solar Atlas; 4. Ministry of Energy (2022): "Renewable Energy Strategy and Action Plan"

Domestic demand for electricity is growing rapidly, leading to additional market potential of ~$775M by 2030

Domestic demand for electricity projected to rise rapidly, mainly driven by expansion of mining and agriculture[1]



Current electricity generation is 17.7 TWH, which implies that generation needs to **increase by at least 13.8 TWH** to meet demand increase by 2030

Renewable energy sources best suited to respond to rise in demand:

- Most cost-effective, as levelised cost of energy (LCOE) for fossil fuels is up to 6x higher than LCOE for renewables[3,4]
- In line with Zambia's commitment to reduce GHG-emissions by at least 25% compared to 2010[5]

This translates into a large market potential of $775M by 2030[2]

C&I - Other	2.2 TWH	x	$0.068 / kWH	=	$150M
Agriculture	9.5 TWH	x	$0.068 / kWH	=	$650M
Residential	6.7 TWH	x	$0.044 / kWH	=	$295M
C&I - Mining	13.1 TWH	x	$0.066 / kWH	=	$865M

x

44%

56% (17.7 TWH) is already generated annually, so **44%** of demand will need to be met with new generation capacity – and more if existing plants go out of operation or need to be replaced

x

90%

Zambia plans to meet extra demand for **90%** through renewable energy sources[1]

=

$775M

If future tariff increases were included in the calculations, market size would rise beyond $960M

1. Ministry of Energy (2023): "Integrated Resource Plan for the Power Sector in Zambia"; 2. Calculations based on 2024 ZESCO-tariffs, as outlined in ZESCO's Tariff Application to the Energy Regulation Board (2022). The commercial tariff was applied to calculations for agriculture; 3. LCOE: Levelised cost of electricity; 4. IEA (2022): "Africa Energy Outlook 2022"; 5. Zambia (2021): "Updated Nationally Determined Contribution"

Some Selected Opportunities

Northwestern Energy Corporation

- Project costing US$104.7 million
- Brownfield project
- Existing feasibility study
- Requiring partners/funders

Giga Global Limited Company

Solar field with a capacity of 40 MWp AC, with 48.2 MWp DC installed

- The project will feature two 33 kV circuits for the wind farm and two for the solar farm.
- Project costing US$ 90 million
- Greenfield project

DanAon Renewable Energy Zambia Ltd

- Project costing US$23 million
- 22.5MW solar plant
- Signed PPA
- Feasibility study conducted
- Looking for Equity partners

Some Selected Opportunities

Lufubu Hydro Power

Project costing US$700 million

- Greenfield project
- Existing feasibility study
- ESIA done
- Total capacity of 163MW
- EBITDA projected at USD118.4m in year 1 of operation
- Requiring partners/funders

Mutinondo and Luchenene Hydroelectric

Solar field with a capacity of 40 MWp AC, with 48.2 MWp DC installed

- Project costing US$ 90 million
- The project will feature two 33 kV circuits for the wind farm and two for the solar farm.
- Greenfield project

Western Power Company Limited

Ngonye Falls Hydroelectric Project

- Project costing US$600 million
- PPA signed
- Study conducted

Investment Incentives

1

Fiscal Incentives

Accelerated depreciation, duty-free imports of machinery and equipment.

2

Non-Fiscal Incentives

Investment guarantees, facilitation of permits and land acquisition, and advisory services

3

Sector-Specific Incentives

Duty-free imports for petroleum exploration, electric vehicles, and energy equipment

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