MAXIMIZING ZAMBIA'S RENEWABLE ENERGY POTENTIAL

Policy options towards green energy investment and generation

Access to quality, reliable and affordable energy continues to be a major constraint to Zambia's transformation into a prosperous middle-income nation.

The increasing national demand for energy places Zambia facing a significant power deficit, which has resulted in prolonged hours of load shedding and affected productivity in the economy as a whole.

ELECTRICITY DEMAND AND SUPPLY AT PEAK TIMES IN ZAMBIA

Source: Adapted by Policy Monitoring and Research Centre (PMRC) 2013 from the ZESCO Newsletter (January – April 2013)

RENEWABLE ENERGY

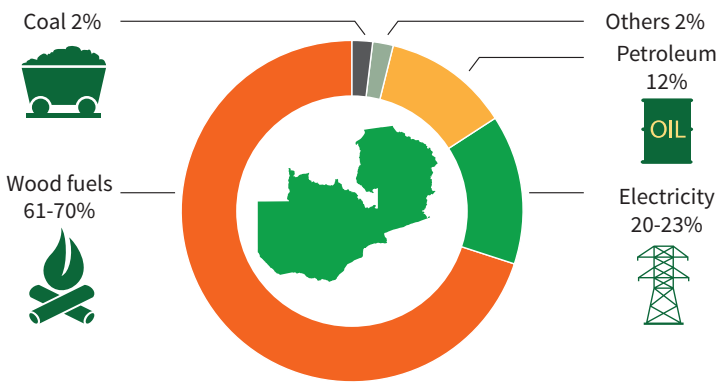
Renewable energy is energy generated from natural resources (such as sunlight, wind, rain, and geothermal heat), which are naturally replenished.

Zambia is endowed with various sources suitable for generation of renewable energy but the nation does not have a policy on Renewable Energy.

Currently, energy in the country is largely derived from hydropower and this has not adequately satisfied the increased demand.

The renewable energy sector presents a viable alternative to compliment the existing hydropower generation.

ENERGY USE IN ZAMBIA BY SOURCE



Source: Adapted by Policy Monitoring and Research Centre (PMRC) 2013 from (Ministry of Mines, Energy and Water development)

AVAILABILITY AND POTENTIAL FOR UTILISATION OF RENEWABLE ENERGY SOURCES AND TECHNOLOGIES IN ZAMBIA

Renewable Energy	Opportunities/ Use	Resource Available
Solar	Thermal (water heating) Electricity (water pumping, lighting, refrigeration)	6-8 sunshine hours on average per day.
Wind	Electricity for Mechanical use (water pumping)	Wind speeds Averaging 3-5 m/s
Biomass	Electricity generation Heating and cooking	Animal waste, Agro waste, industrial waste, sawmill waste
Biofuels	Ethanol for blending with gasoline to power vehicles and machinery	Agricultural crops: - Sugarcane, sweet sorghum, corn, Jatropha
Geothermal	Electricity generation Thermal and lighting	Hotsprings distributed across the country

Source:- Adapted by Policy Monitoring and Research Centre (PMRC) 2014, from the National Energy Policy (NEP), 2008.

HOW CAN RENEWABLE ENERGY BENEFIT ZAMBIA AND ZAMBIANS?

- Provide clean energy that is environmentally friendly
- Contribute to end load shedding
- Add additional power to the National Energy Supply to curb the power deficit
- Promote urban and rural investments

Benefits of Renewable Energy to Selected Sectors

Education
Electricity to schools and teachers houses. Rural students can study after evening hours.

Health
Electricity to hospitals and health center's. Medicines can be preserved, refrigerated and sterilized

Transport
Power streetlights and road toll gates as well as mechanical equipment for road construction.

Industrialization
Provide abundant power and electricity needed in the manufacturing and construction sector.

Agriculture
Powering agricultural equipment, machinery and tools to promote enhanced cultivation.

Local Government and Housing
Provide electricity to households and communities whilst providing clean energy options in light of climate change.

Jobs
Promoting job creation through employment of locals in the extraction, transformation and distribution of energy goods and services.

PMRC RECOMMENDATIONS

POLICY OPTIONS TO PROMOTE GREEN ENERGY INVESTMENT AND GENERATION

- **Review Legal and Regulatory environment governing Energy Sector –** The renewable energy aims and objectives outlined in The National Energy Policy and The Sixth National Development Plan (R-SNDP) should be streamlined into a "Renewable Energy Stratergic Plan" with an implementation framework and Monitoring mechanism.

- **Renewable Energy Feed in Tariff -** The Government should establish a feed-in-tariff as a policy tool for encouraging development of renewable technologies.

- **Enabling Environment for Investment -** The Government needs to create incentives and smart subsidies for the private sector and the Independent Power Producers (IPPs) participation in Renewable energy development especially in the rural areas.

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