7 AFFORDABLE AND CLEAN ENERGY

2020 Zambia Sustainable Development Goals National Review

Sustainable Development Goal 7 - Affordable and Clean Energy

INTRODUCTION

- The seventh Sustainable Development Goal (SDG) is Affordable and Clean Energy.
- The aim of this goal is to ensure affordable, reliable, sustainable and modern energy for all.

OVERVIEW OF SDG 7

- Energy is an important catalyst for economic growth and impacts all sectors of the economy.
- Government has embarked on policy reforms to improve the business environment for enhanced participation of the private sector in the energy sector.
- Some of the interventions for ensuring affordable and clean energy sources include:
  - Enhancing generation, transmission and distribution of electricity;
  - Enhancing strategic reserves and supply of petroleum products;
  - Promoting renewable and alternative energy; and
  - Improving electricity access to rural and peri-urban areas

Indicator 7.1.1: Proportion of population with access to electricity

The Zambian **Government has implemented infrastructure projects for power generation, transmission and distribution**.

The mining sector continues to be the major consumer of electricity generated, **taking slightly over half**. Domestic use accounts for about **30%**; all other categories use about **5%**, including the manufacturing sector.

Access to electricity for both rural and urban areas has increased, with connectivity for urban areas being estimated at **70.6%** (from 61.5% in 2013), and the corresponding connectivity for rural areas being estimated at **8.1%** (from 4.9% in 2013).

Indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology

The proportion of the population which uses clean fuels and technology as a primary source of energy for cooking is very low.

In 2018, the proportion was estimated at **8%** nationally; **18%** in urban areas and **1.5%** in rural areas respectively.

Indicator 7.1.3: Renewable energy share in the total final energy consumption

Government introduced policy and regulatory measures, fuel subsidy removal and regulatory reforms.

In response to these changes, there is a noticeable rise in private sector activity. For instance, off-grid power plants amounting to a total of **88.336 MW** were added to the power pool.

Several other power projects are under construction and will come on stream between **2019 and 2022**. This will further improve the country's electricity generation capacity.

The diversification of the energy mix improves the country's resilience to the adverse effects of climate change, which in the recent past has generated excessive negative impacts.

Indicator 7.1.4: Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

In 2017, **Zambia commenced migration to cost-reflective electricity tariffs**. Removal of subsidies and making the tariffs cost reflective were meant to attract more private investors into the energy sector.

In 2018, the Government commenced implementation of the global energy transfer **Feed-In-Tariff programme, aimed at overcoming investment barriers for private investors for small-scale renewable energy projects of up to 20MW**.

- With the commencement of this programme, there has been development of a total of **200MW**, comprising **100MW solar and 100MW small hydropower plants**.

In 2017, the Government adopted the Renewable Energy Feed in Tariff strategy, which is expected to accelerate private sector investments in small and medium-sized renewable energy projects. In response to the reforms for promoting investment in the sector, the following developments are noteworthy:

1. **1 MW** mini-hydro power plant was commissioned in 2012 in Shiwang'andu, Chinsali District of Muchinga Province;

1 MEGAWATT IN 2012

2. **60-kilowatt** solar project was completed in 2013 in Mpanta, Samfya District of Luapula Province;

60 KILOWATT IN 2013

3. **1 MW** solar plant was commissioned by the Copperbelt Energy Corporation in Riverside Kitwe District of the Copperbelt Province in 2018.;

1 MEGAWATT IN 2018

4. **54 MW** Bangweulu solar project commissioned in 2019 in Lusaka District of Lusaka Province; and

54 MEGAWATT IN 2019

5. **35 MW** Ngonye solar project completed in Lusaka District of Lusaka Province in 2019.

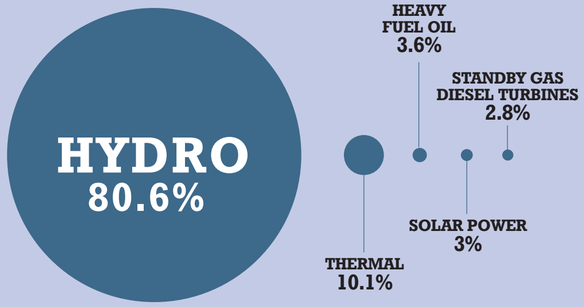
35 MEGAWATT IN 2019

- The Bangweulu and Ngonye Solar Power Plants in the Lusaka South Multi-Facility Economic Zone are the **first ever solar energy projects to feed into the national electricity grid**.
- Government, with support from the World Bank, developed a National Renewable Energy Resource Map focusing on solar and wind.
- The Resource Atlas provides information about the solar and wind resources available in Zambia for power generation and is expected to attract investments in the renewable energy sub-sector.

Electricity generation by source

1) The national electricity installed generation capacity increased from **1,767 MW in 2011** to **2,974.7 MW in 2018** representing a growth of **68%** in electricity generation capacity.

2) Electricity Generation in 2019



The country progressed towards a diversified electricity generation mix in 2019 with **hydro power** representing **80.6%**, **thermal** (coal powered) at **10.1%**, **heavy fuel oil** at **3.6%**, **solar power** at **3%** and **standby gas** and **diesel turbines** at **2.8%.**

CHALLENGES AND REQUIRED ACTIONS

1. **Adverse effects of climate change (reduced rainfall and droughts)**
   a) Scale up renewable energy generation as it is key to closing the energy gap, especially for off-grid remote communities.
   b) Scale up interventions to increase the share of renewable energy **sources across the three end users of electricity, transport and heat**.

2. **Limited sources of clean energy for cooking and heating**
   a) Scale up interventions to promote the adoption of clean energy sources at the household and community levels.
   b) Enhance strategies for attracting the private sector to participate in the generation of clean energy.
   c) Improve the operation of REA so that more rural households are enabled to access clean sources of energy.

3. **Low level of energy efficiency**
   Scale up interventions aimed at improving the use of energy, through efficient production technologies at industry level and efficient energy utilisation patterns at the household/community level.

4. **Limited sources of energy**
   a) Enhance strategies to attract investments in renewable energy sources in order to improve the generation mix and cushion the economy against energy deficits.
   b) Expedite conclusion of cost-reflective tariff study in order to guide policy.

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