

RENEWABLE ENERGY OPPORTUNITIES IN ANGOLA

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1. Contry Overview

Country: Angola

Capital City: Luanda

Area: 246,700Km²

Population: 25 millions (2016)

Population without
electricity: 15 millions (2016)

GDP: 114USD Billion (2018)

HDI: 0.581 (2017)

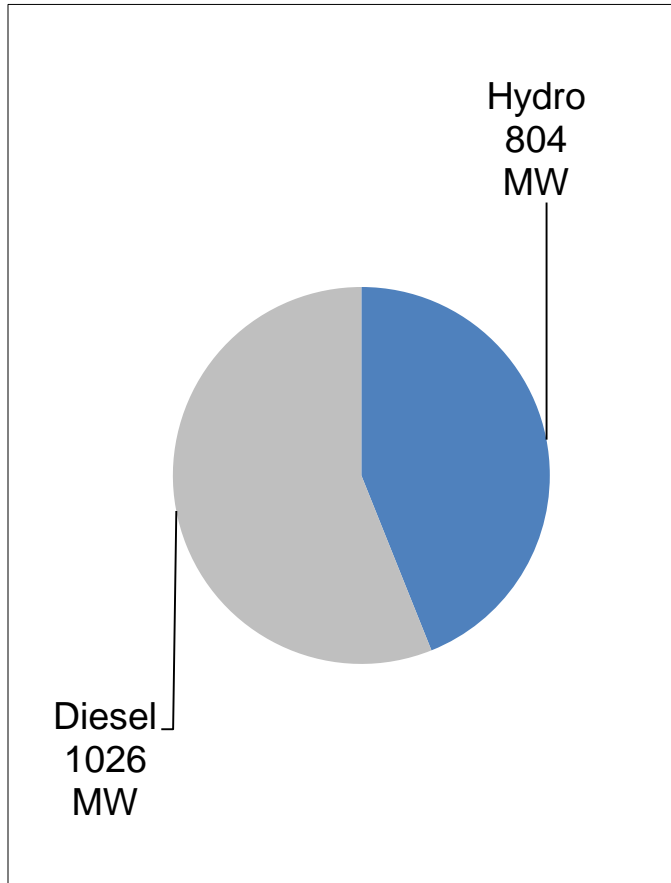
Main Country revenue: Oil



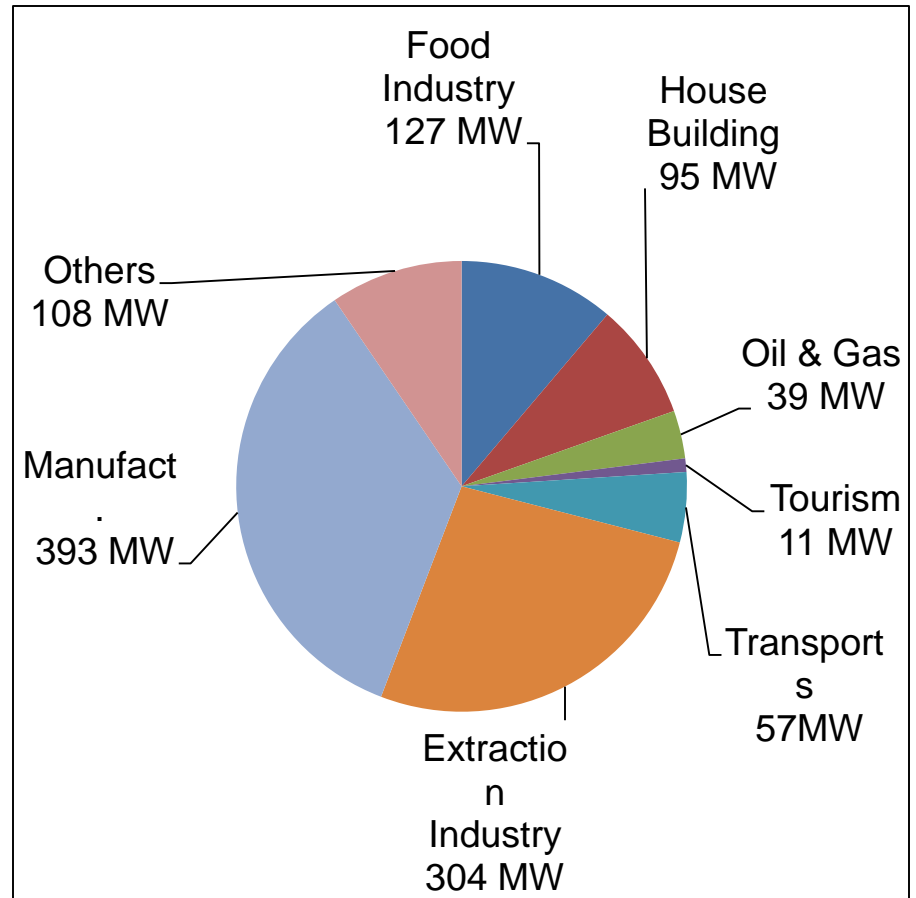
Source: WorldBank,
UNDP, Worldatlas

2. Power Sector

Available Installed Power



Estimated Power Demand in 2025



Source: MINEA, See4all

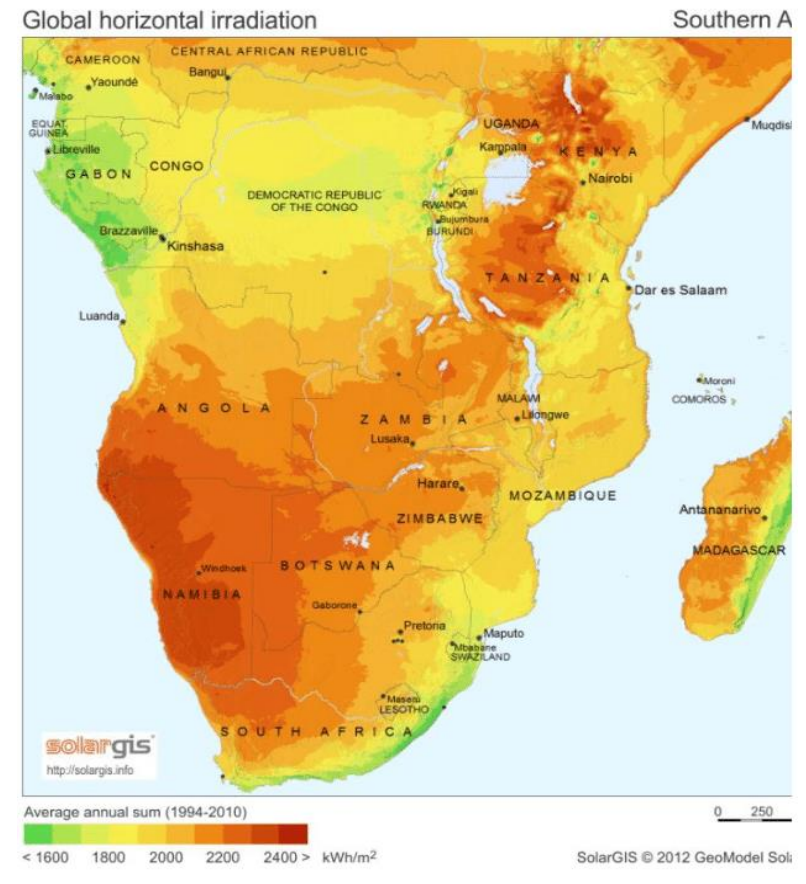
3.1. Solar Power Potential

Global Horizontal Irradiation:

- 1350 kWh/m²/year in the North
- 2070 kWh/m²/year in the Center and south

Solar pv power Installed: 334 kWp

Target 2025:
22 MW mini-grid
10 MW off-grid
78 MW on-grid



Source: MINEA, Gesto, Solargis,

3.2. Hydro Power Potential

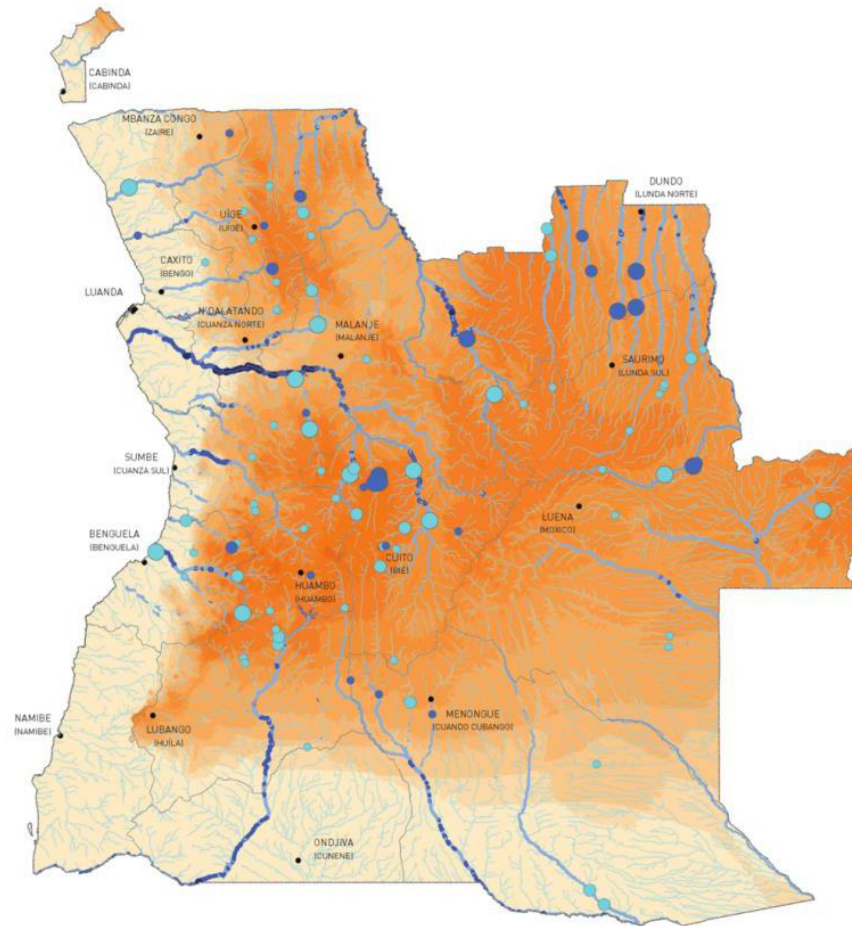
Total potential 18.2 GW

Installed available Power: 804 MW

Target for 2025:

-Small hydropower plants 861 MW

-Larger Hydropower plants 4 GW



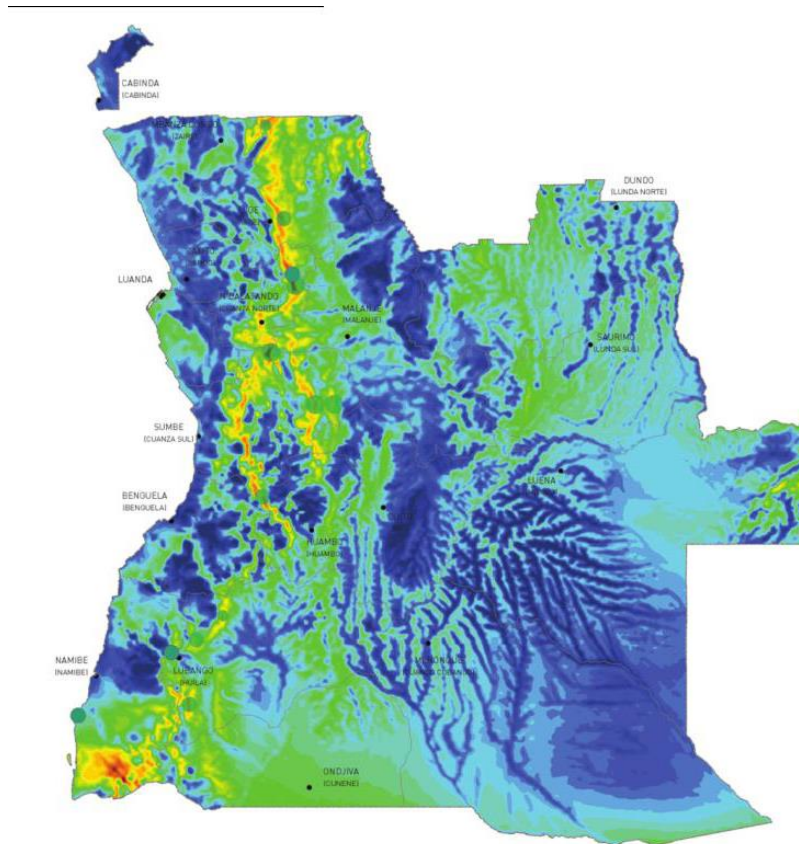
Source: See4all, MINEA.

3.3.Wind Power Potential

Angola coast line: 1600Km

Average Wind speed:
-At 80 meter is 6,5m/s

Target 2025
Wind park of 100 MW



Source: See4all, MINEA.

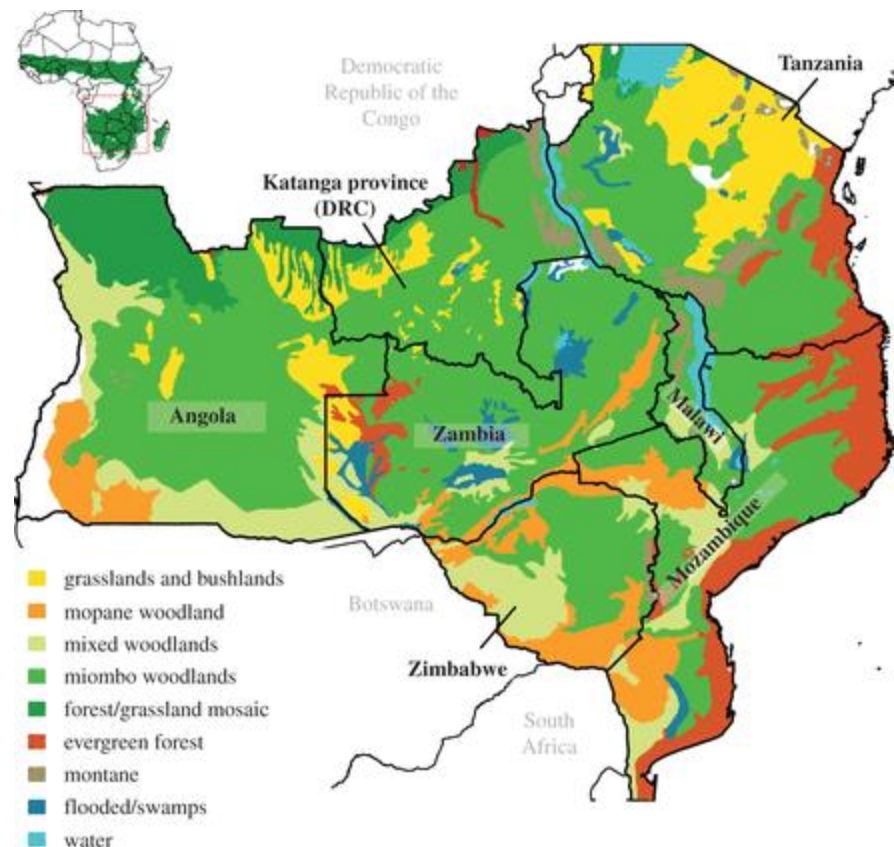
3.4. Biomass Power Potential

-Installed power

- Biocom Ethanol Power 40 MW

-Target for 2025:

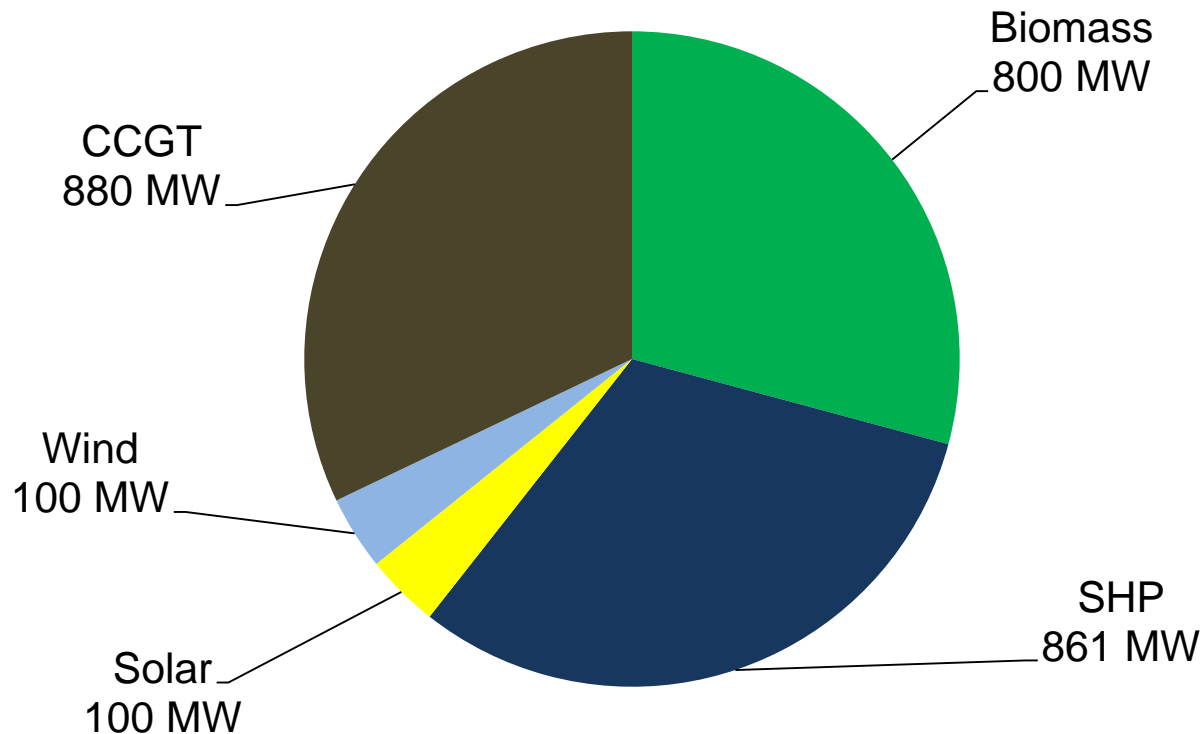
- CCGT 880 MW
- Biomass 800MW
- Ethanol 100 MW
- Municipal Solid Waste 50 MW
- forest residues and agro-food industry 10 MW



Source: See4all, MINEA, Worldatlas, Siemens Angola.

4. Renewable Energy Target 2025

National Target 2741 MW from Renewable Energy by 2025



Source: See4all, MINEA, own graph

5.Challenges

- Creation of 500 thousands jobs by 2025
- Willingness to decrease Import food: €7.5 million per day
- More commitment from the Government with tax incentives
 - Purchase Power Agreement are to be set
 - Renewable Energy Law not yet approved

Source: See4all, MINEA, World Bank

6.1 Opportunities in Education

- Creation of Research and Development labs in the leading universities
- Creation of at least one Training Centre on Renewable Energies
- 800 engineers graduate from angola universities each year

Source: See4all, MINEA.

6.2. Opportunities in Agriculture

- Available Agriculture Land: 59 million Ha (2016)
- Cultivated area: 5 million Ha (2016)
- Fertile land for Jatropha culture

Organic Fertilizer Initiative From Organic Waste (2017)

- Required Area: 10m²
- Organic fertilizer production: 48t/ month
- Created Job: 15
- Owner: Eng.Hangalo Karitoco

Source: See4all, MINEA, UNPD.

7.sources

Angolan Ministry Energy Water

www.minea.gov

Food Agriculture Organization

www.fao.org

Gesto Lda

SolarGis,

<https://solargis.com/maps-and-gis-data/download/angola/>

Sustainable Energy for All

www.see4all.org

United Nation for Development Program

<http://hdr.undp.org>

World Bank

www.worldbank.org

World Atlas

ww.worldatlas.com

Thank You