ENERGY PROFILE

Angola

IRENA
International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS

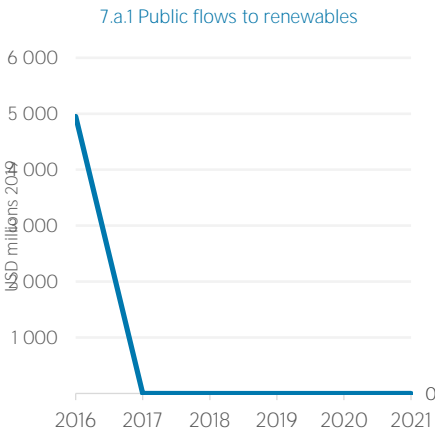GDP per capita / 8.1.1 Real GDP growth rate

7.3.1 Energy intensity

- 7.1.1 Access to electricity (% population)
- 7.1.2 Access to clean cooking (% population)
- 7.2.1 Renewable energy (% TFEC)

7.a.1 Public flows to renewables

7.b.1 Per capita renewable capacity

11.6.2 Air particulate matter (PM$_{2.5}$)
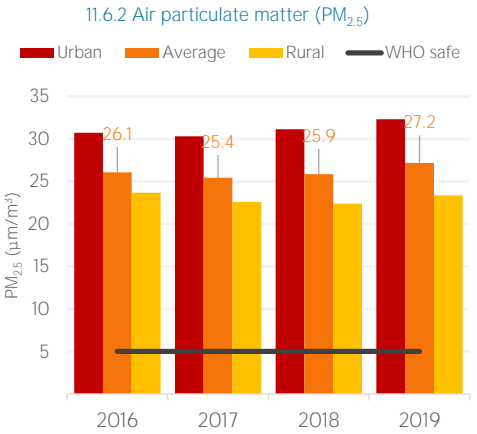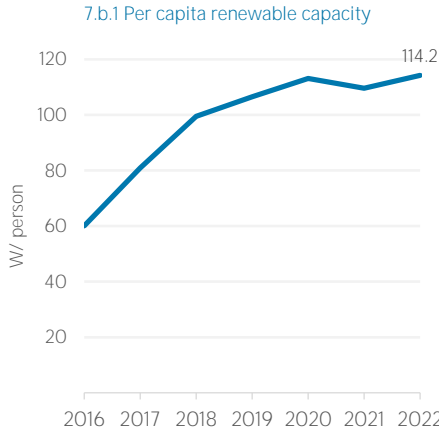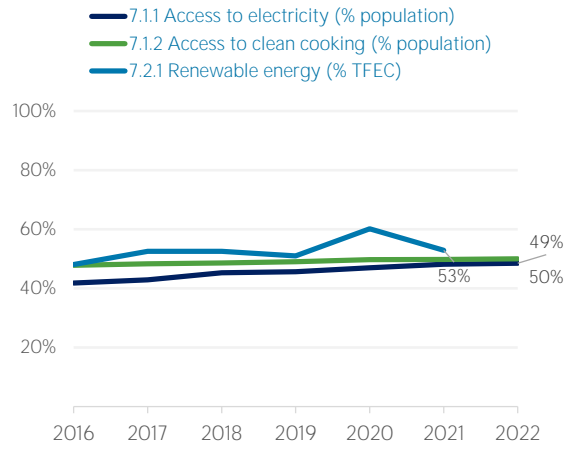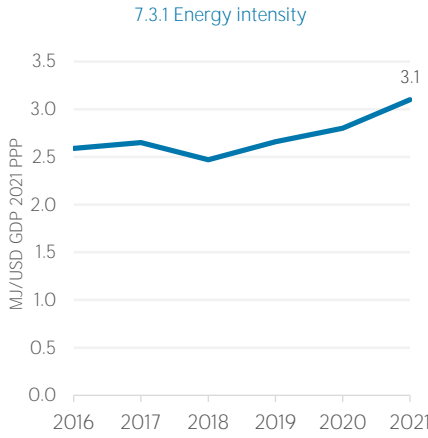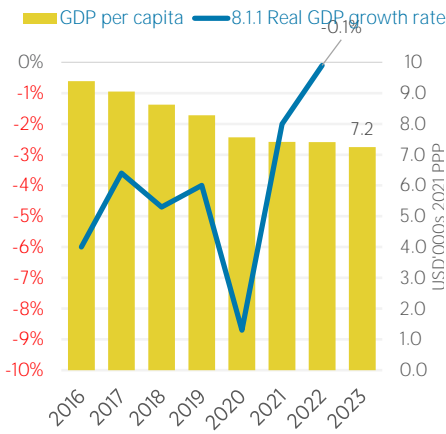
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	257 683	213 259
Renewable (TJ)	292 197	332 441
Total (TJ)	549 880	545 700
Renewable share (%)	53	61

Growth in TES	2016-21	2020-21
Non-renewable (%)	-17.2	+14.2
Renewable (%)	+13.8	+2.4
Total (%)	-0.8	+6.7

Primary energy trade	2016	2021
Imports (TJ)	154 043	125 531
Exports (TJ)	3 631 843	2 506 149
Net trade (TJ)	3 477 800	2 380 618
Imports (% of supply)	28	23
Exports (% of production)	91	85
Energy self-sufficiency (%)	729	541

Total energy supply in 2021

- Oil
- Gas
- Nuclear
- Coal + others
- Renewables
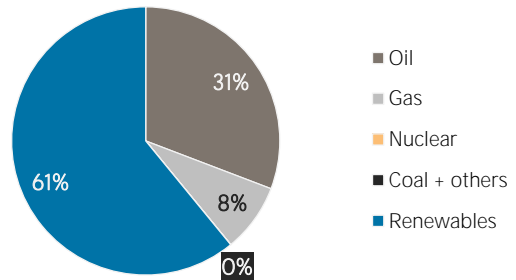
Renewable energy supply in 2021

- Hydro/marine
- Wind
- Solar
- Bioenergy
- Geothermal
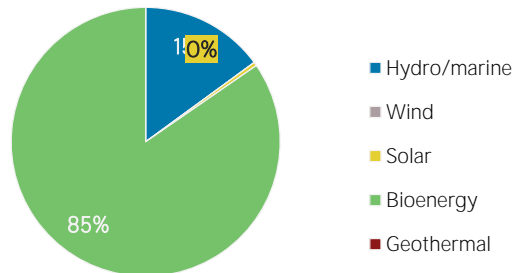
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy

Petajoules (PJ)

Values: 314 (2016), 333 (2017), 349 (2018), 361 (2019), 369 (2020), 373 (2021)
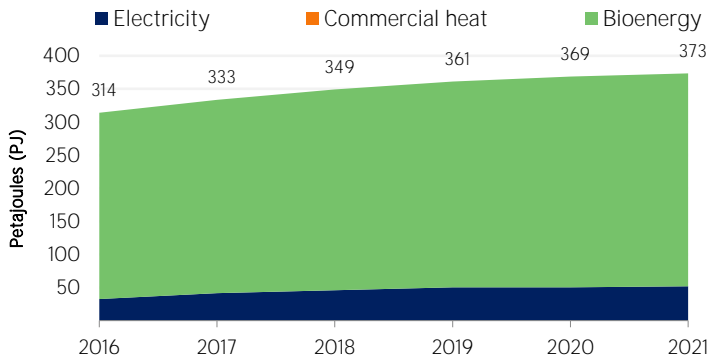
Consumption by sector	2016	2021
Industry (TJ)	16 207	22 419
Transport (TJ)	0	0
Households (TJ)	212 192	237 534
Other (TJ)	85 518	113 524

Renewable energy consumption in 2021

Legend: ■ Geothermal ■ Solar direct

Pie chart: 14%, 86%

Legend: ■ Industry ■ Transport ■ Households ■ Other

Pie chart: 6%, 30%, 64%
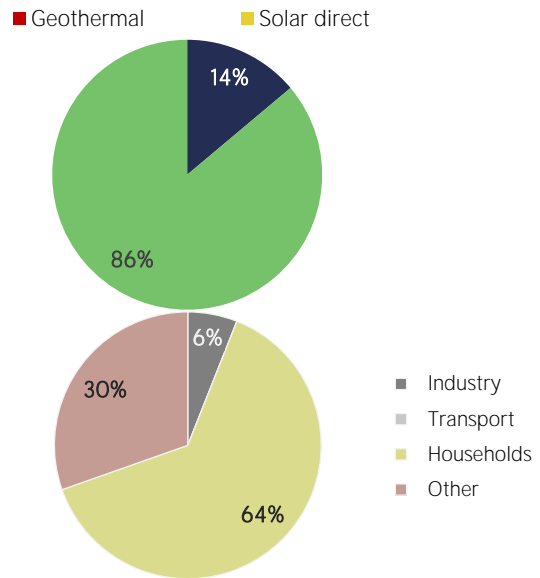
ELECTRICITY CAPACITY

Installed capacity trend

Legend: ■ Fossil fuels ■ Nuclear ■ Other Non-RE ■ Hydro/marine ■ Wind ■ Solar ■ Bioenergy ■ Geothermal — Renewable share

Gigawatts (GW) / Renewable share (%)

Values: 3.1 (2016), 4.8 (2017), 5.4 (2018), 5.8 (2019), 6.1 (2020), 6.1 (2021), 6.4 (2022), 6.4 (2023), Renewable share 63%
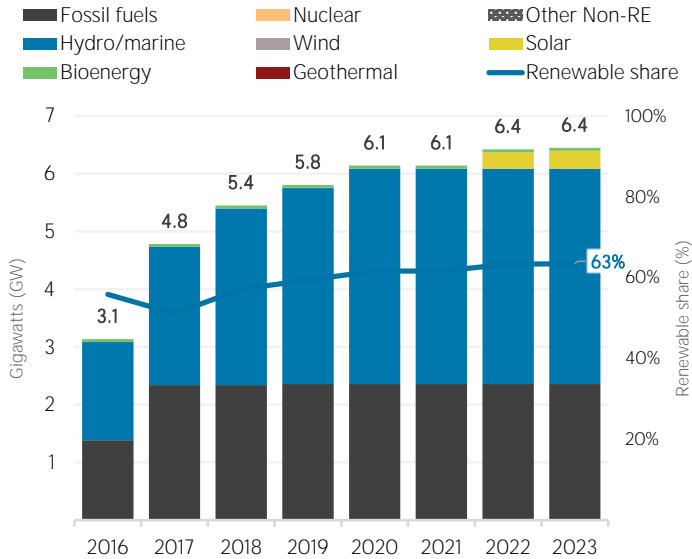
Renewable capacity in 2023

Legend: ■ Hydro/marine ■ Solar ■ Wind ■ Bioenergy ■ Geothermal

Pie chart: 91%, 8%, 1%
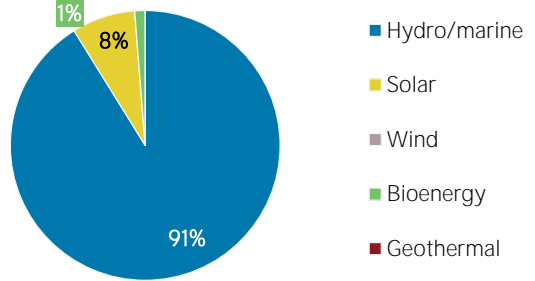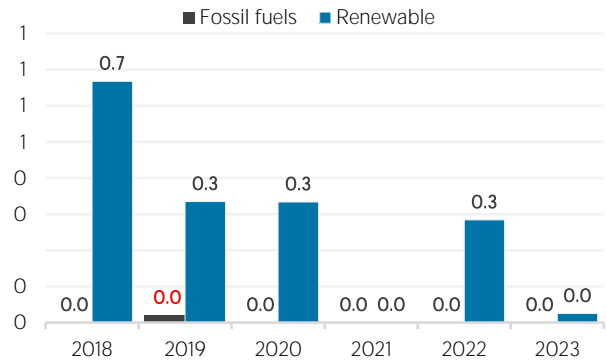
Net capacity change in 2023 (MW)

Non-renewable	0
Hydro and marine	0
Solar	+ 25
Wind	0
Bioenergy	0
Geothermal	0

Net capacity change (GW)

Legend: ■ Fossil fuels ■ Renewable

Year	Fossil fuels	Renewable
2018	0.0	0.7
2019	0.0	0.3
2020	0.0	0.3
2021	0.0	0.0
2022	0.0	0.3
2023	0.0	0.0
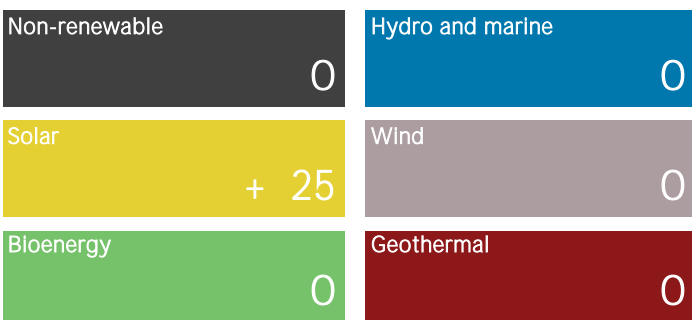
Capacity utilisation in 2022 (%)

Fossil fuels	22%
Nuclear	
Hydro/Marine	42%
Solar	32%
Wind	
Bioenergy	45%
Geothermal	
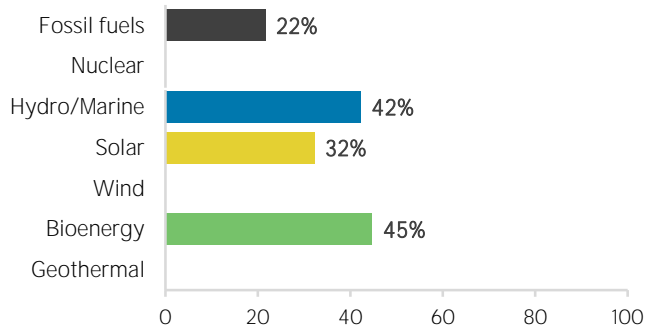
ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	4 475	24
Renewable	14 407	76
Hydro and marine	13 802	73
Solar	405	2
Wind	0	0
Bioenergy	200	1
Geothermal	0	0
Total	18 882	100

Per capita electricity generation (kWh)

Electricity generation trend
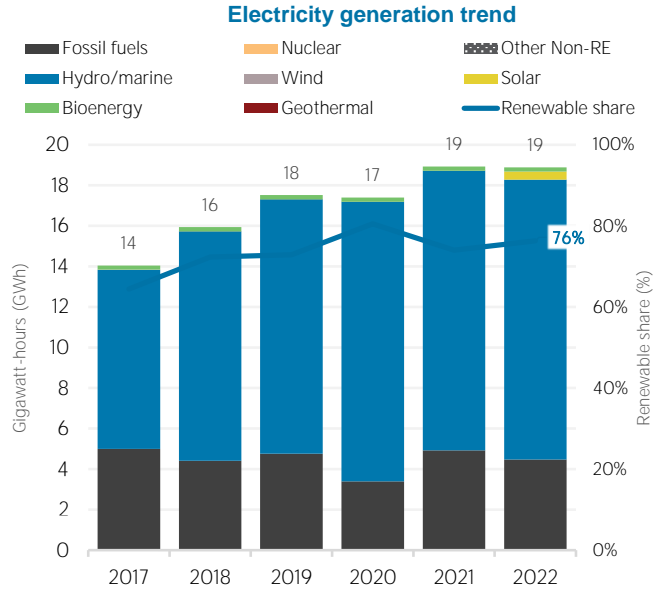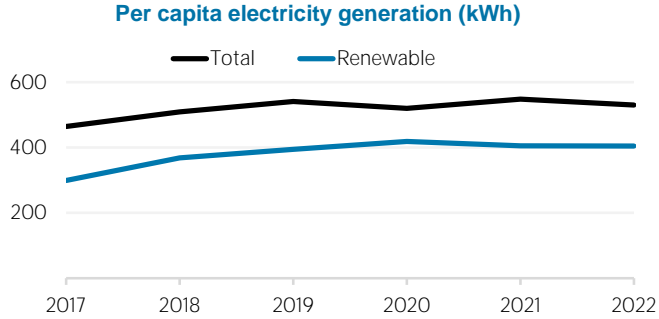
LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 Presidential Decree No. 117/20 - General Regulation on Environmental Impact Assessment and the Environmental Licensing Procedure — **2020**

2 General Electricity Act 2014 — **2015**

3 National Renewable Energy Strategy — **2015**

4 Sustainable Energy for All 2030 — **2015**

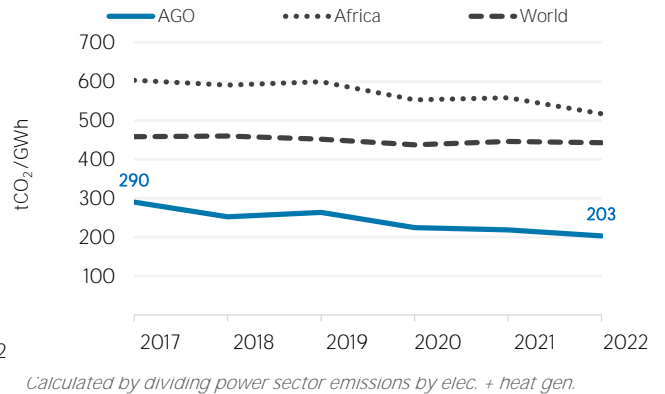**5** Regional Policy for Universal Access to Modern Energy 2014 - 2030 — **2014**
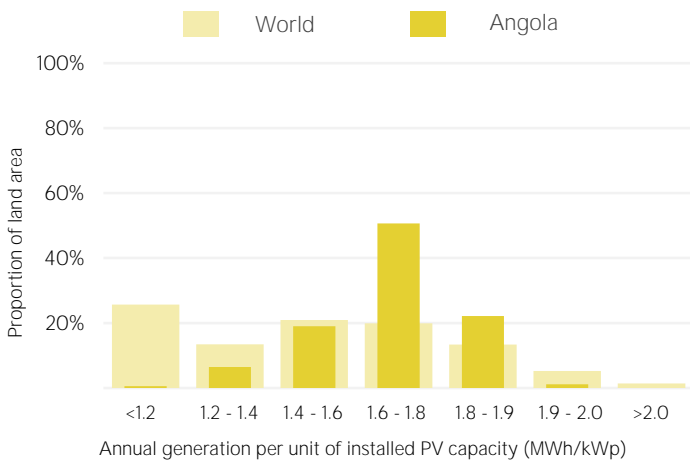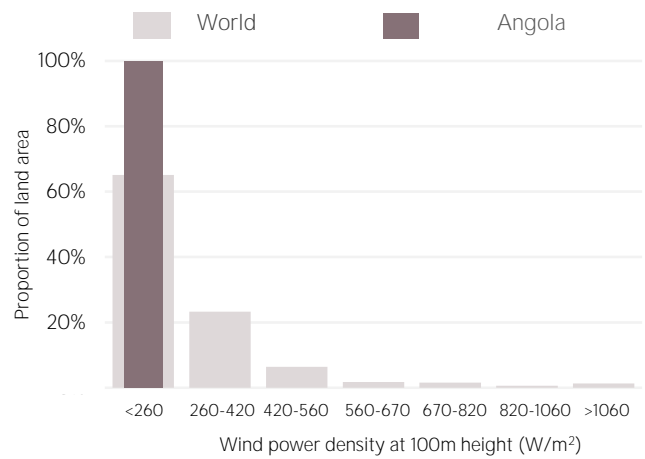
ENERGY AND EMISSIONS

CO₂ emissions by sector
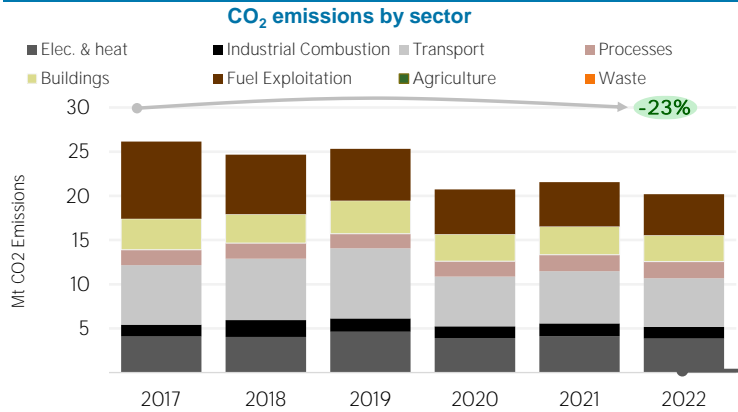
Elec. & heat generation CO₂ emissions in

Avoided emissions from renewable elec. & heat

Avoided emissions based on fossil fuel mix used for power
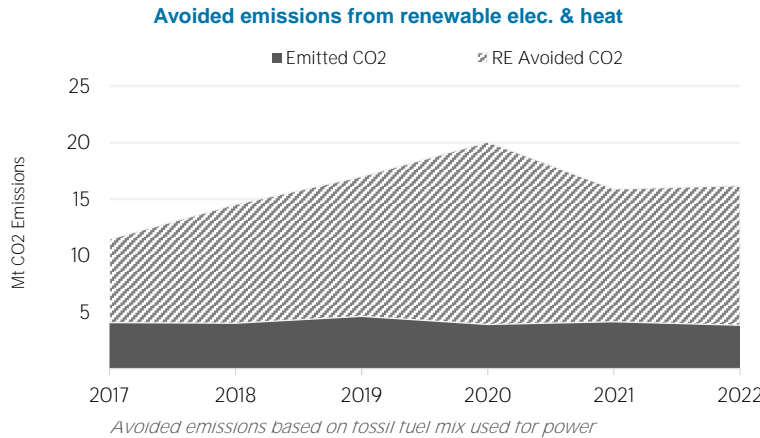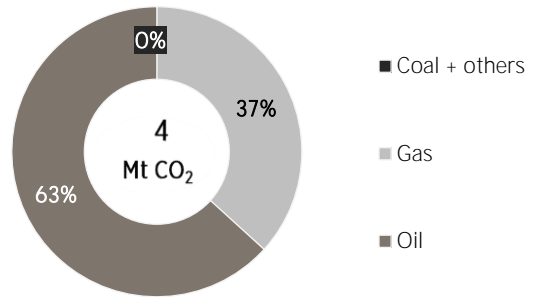
CO₂ emission factor for elec. & heat generation

Calculated by dividing power sector emissions by elec. + heat gen.

Distribution of solar potential

Proportion of land area

Annual generation per unit of installed PV capacity (MWh/kWp)

Legend: World, Angola

Distribution of wind potential

Proportion of land area

Wind power density at 100m height (W/m^2)

Legend: World, Angola

Biomass potential: net primary production

7.5 200 tC/ha/yr
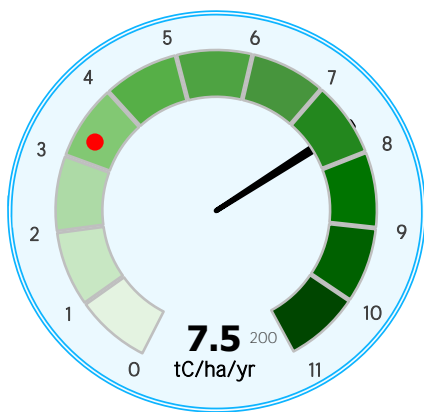
● = Global average of 3-4 tC/ha/yr

Indicators of renewable resource potential

Solar PV: Solar resource potential has been divided into seven classes, each representing a range of annual PV output per unit of capacity (kWh/kWp/yr). The bar chart shows the proportion of a country's land area in each of these classes and the global distribution of land area across the classes (for comparison).

Onshore wind: Potential wind power density (W/m^2) is shown in the seven classes used by NREL, measured at a height of 100m. The bar chart shows the distribution of the country's land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above are considered to be a good wind resource.

Biomass: Net primary production (NPP) is the amount of carbon fixed by plants and accumulated as biomass each year. It is a basic measure of biomass productivity. The chart shows the average NPP in the country (tC/ha/yr), compared to the global average NPP of 3-4 tonnes of carbon