Eritrea

IRENA
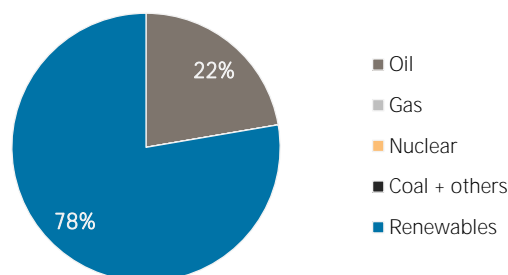International Renewable Energy Agency

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$_{2.5}$)

Urban | Average | Rural | WHO safe

TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2017	2022
Non-renewable (TJ)	8 781	9 246
Renewable (TJ)	26 414	32 195
Total (TJ)	35 195	41 441
Renewable share (%)	75	78

Growth in TES	2017-22	2021-22
Non-renewable (%)	+5.3	+5.9
Renewable (%)	+21.9	+2.2
Total (%)	+17.7	+3.0

Primary energy trade	2017	2022
Imports (TJ)	9 153	10 292
Exports (TJ)	0	0
Net trade (TJ)	- 9 153	- 10 292
Imports (% of supply)	26	25
Exports (% of production)	0	0
Energy self-sufficiency (%)	75	78

Total energy supply in 2022

- Oil
- Gas
- Nuclear
- Coal + others
- Renewables

Renewable energy supply in 2022

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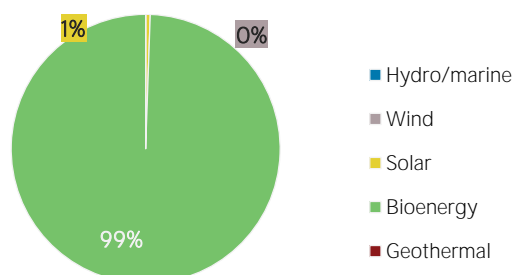
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy

Petajoules (PJ)

26 — 27 — 27 — 31 — 32 — 32

2017 2018 2019 2020 2021 2022

Renewable energy consumption in 2022

Legend: ■ Geothermal ■ Solar direct

99%
0%

35%   65%

■ Industry
■ Transport
■ Households
■ Other
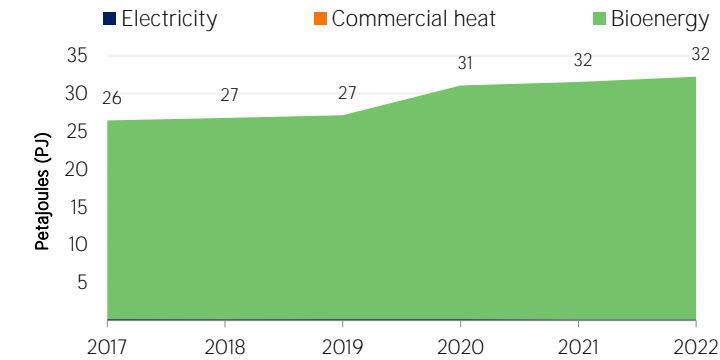
Consumption by sector	2017	2022
Industry (TJ)	45	31
Transport (TJ)	0	0
Households (TJ)	8 845	20 983
Other (TJ)	17 572	11 222
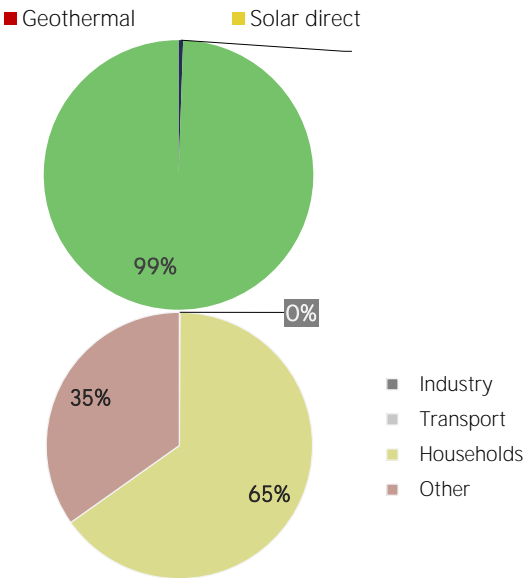
ELECTRICITY CAPACITY

Installed capacity trend

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

Gigawatts (GW) / Renewable share (%)

0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2

11%

2017 2018 2019 2020 2021 2022 2023 2024

Renewable capacity in 2024

3%
97%

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

Net capacity change (MW)

Legend: ■ Fossil fuels ■ Renewable

0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
-0.8
-0.3

2019 2020 2021 2022 2023 2024

Net capacity change in 2024 (MW)

Non-renewable	0	Hydro and marine	0
Solar	0	Wind	0
Bioenergy	0	Geothermal	0
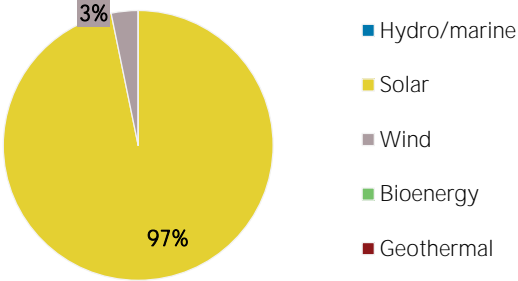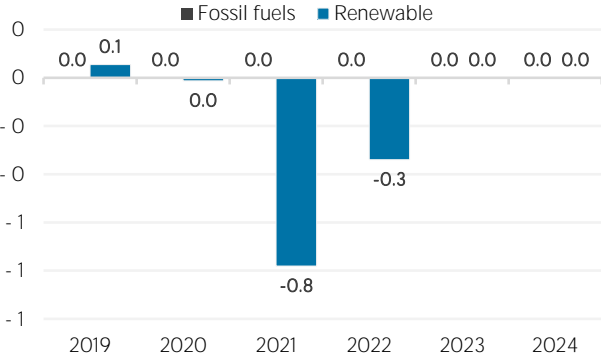
Capacity utilisation in 2023 (%)

Fossil fuels — 22%
Nuclear
Hydro/Marine
Solar — 22%
Wind — 20%
Bioenergy
Geothermal

0 20 40 60 80 100
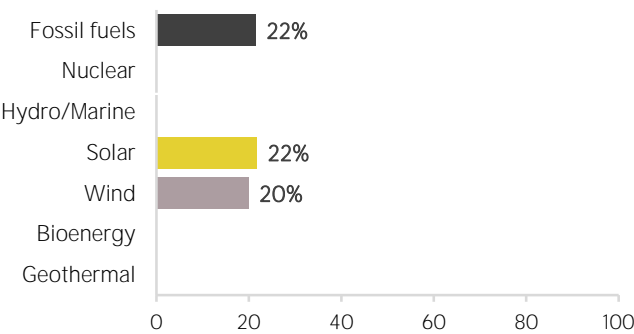
ELECTRICITY GENERATION

Generation in 2023	GWh	%
Non-renewable	389	89
Renewable	49	11
Hydro and marine	0	0
Solar	47	11
Wind	1	0
Bioenergy	0	0
Geothermal	0	0
Total	438	100

Electricity generation trend

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

Per capita electricity generation (kWh)

Legend: Total, Renewable
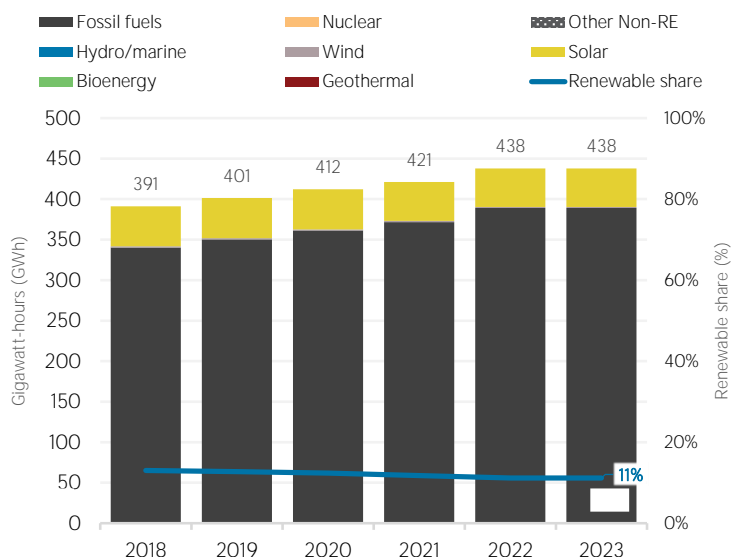
LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 First NDC of Eritrea   **2021**

2

3

4

5

ENERGY AND EMISSIONS

CO$_2$ emissions by sector

Legend: Elec. & heat, Industrial Combustion, Transport, Processes, Buildings, Fuel Exploitation, Agriculture, Waste

+2%

Elec. & heat generation CO$_2$ emissions in

0%

0.3 Mt CO$_2$

100%

Legend: Coal + others, Gas, Oil
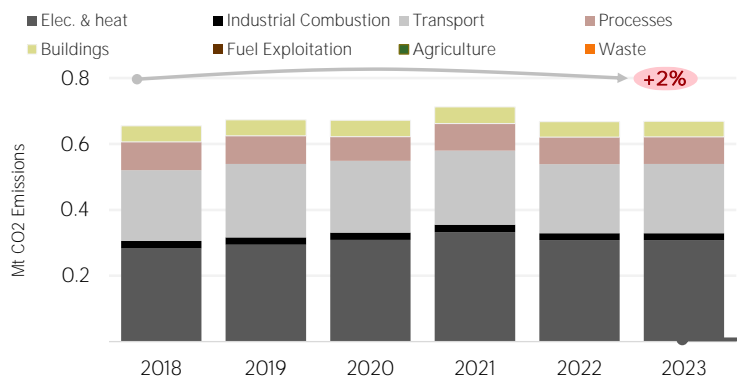
Avoided emissions from renewable elec. & heat

Legend: Emitted CO2, RE Avoided CO2
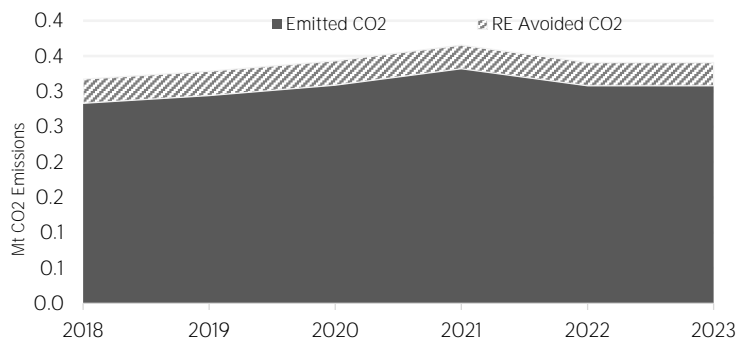
Avoided emissions based on fossil fuel mix used for power
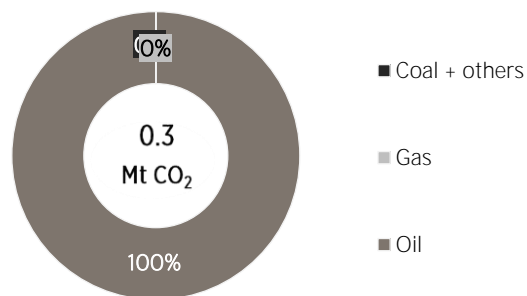
CO$_2$ emission factor for elec. & heat generation

Legend: ERI, Africa, World

724 ... 703
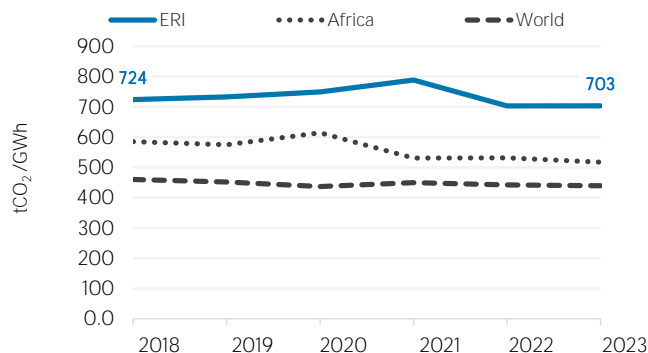
Calculated by dividing power sector emissions by elec. + heat gen.

Distribution of solar potential

Legend: World, Eritrea

Proportion of land area (y-axis): 0% to 100%

X-axis: <1.2, 1.2 - 1.4, 1.4 - 1.6, 1.6 - 1.8, 1.8 - 1.9, 1.9 - 2.0, >2.0

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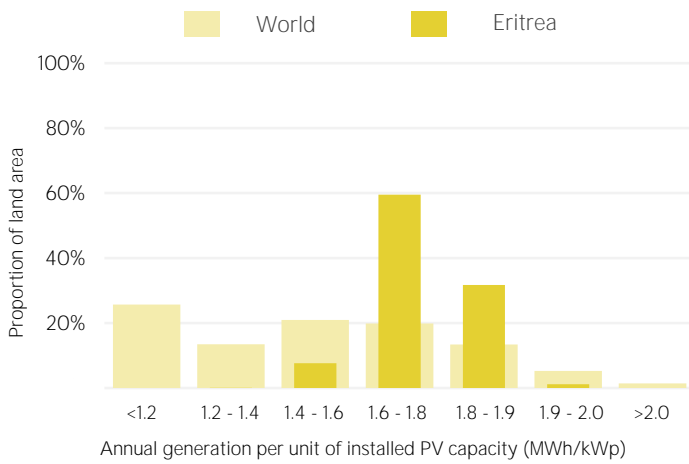
Distribution of wind potential

Legend: World, Eritrea

Proportion of land area (y-axis): 0% to 100%

X-axis: <260, 260-420, 420-560, 560-670, 670-820, 820-1060, >1060

Wind power density at 100m height (W/m^2)
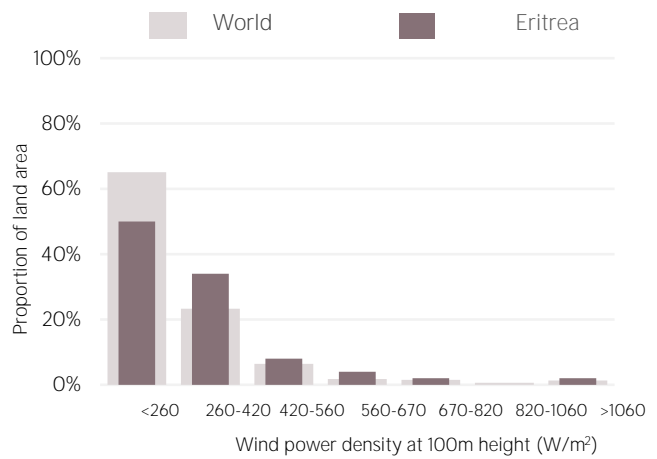
Biomass potential: net primary production

0.5 tC/ha/yr

= Global average of 3-4 tC/ha/yr
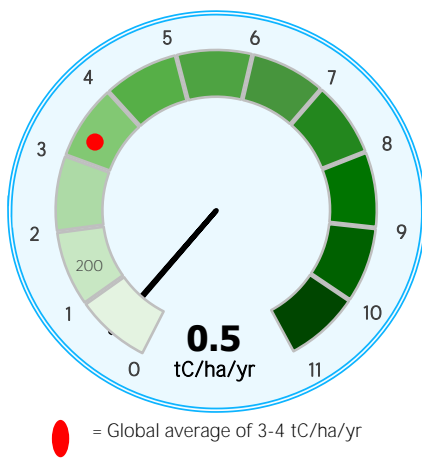
Indicators of renewable resource potential

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

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