# Burkina Faso

**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$_{2.5}$)
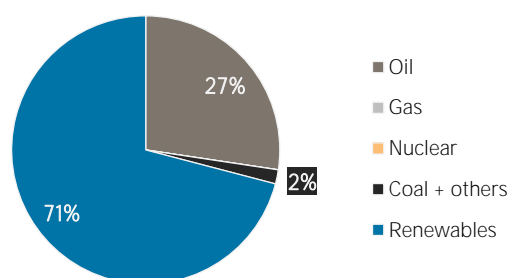Urban   Average   Rural   —WHO safe
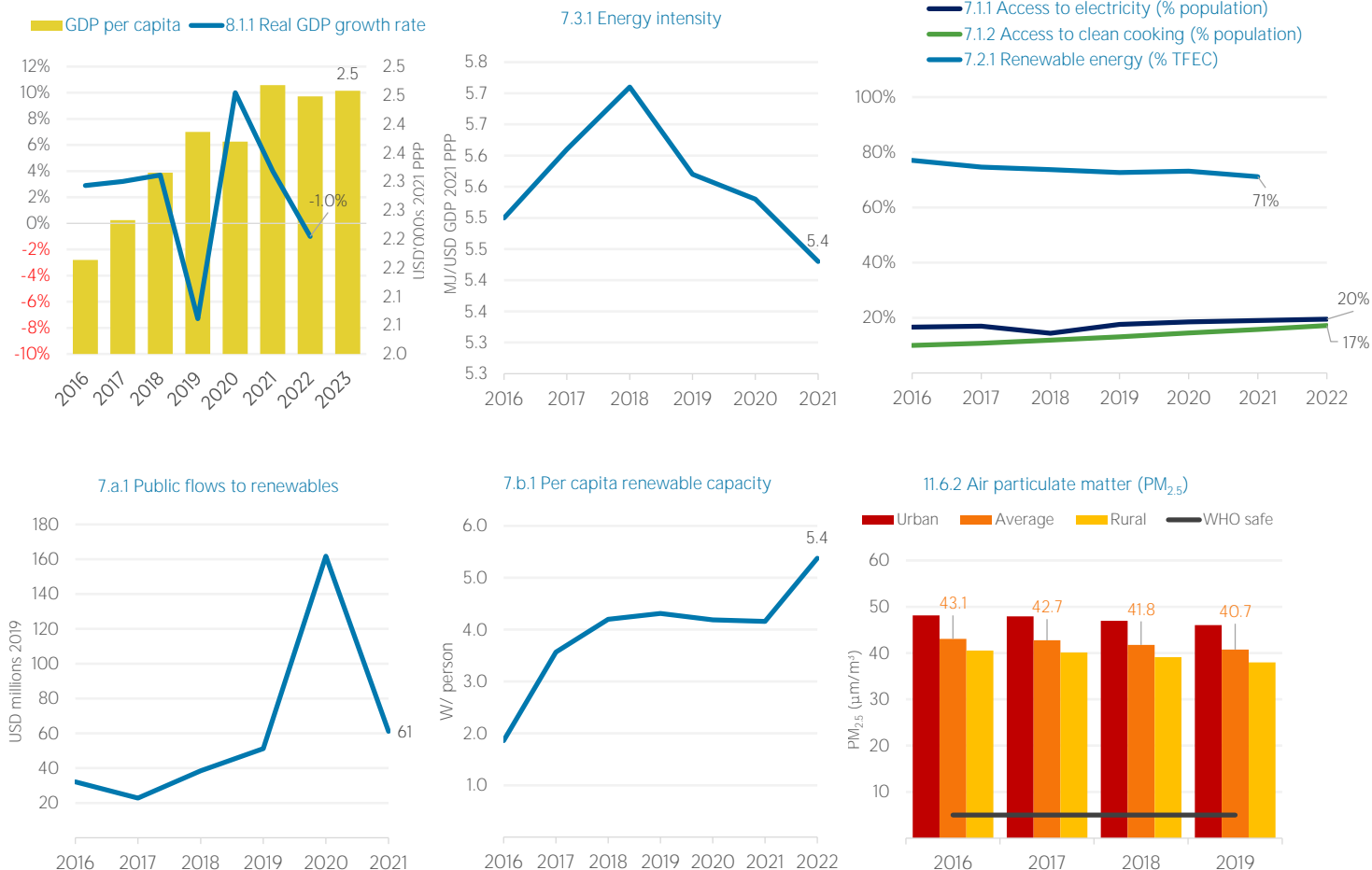
## TOTAL ENERGY SUPPLY (TES)

| Total Energy Supply (TES) | 2016 | 2021 |
|---|---|---|
| Non-renewable (TJ) | 47 987 | 76 435 |
| Renewable (TJ) | 127 886 | 186 458 |
| Total (TJ) | 175 874 | 262 893 |
| Renewable share (%) | 73 | 71 |

| Growth in TES | 2016-21 | 2020-21 |
|---|---|---|
| Non-renewable (%) | +59.3 | +16.9 |
| Renewable (%) | +45.8 | +38.5 |
| Total (%) | +49.5 | +31.4 |

| Primary energy trade | 2016 | 2021 |
|---|---|---|
| Imports (TJ) | 43 148 | 80 324 |
| Exports (TJ) | 354 | 0 |
| Net trade (TJ) | - 42 794 | - 80 324 |
| | | |
| Imports (% of supply) | 25 | 31 |
| Exports (% of production) | 0 | 0 |
| Energy self-sufficiency (%) | 73 | 71 |

**Total energy supply in 2021**


Oil
Gas
Nuclear
Coal + others
Renewables

**Renewable energy supply in 2021**


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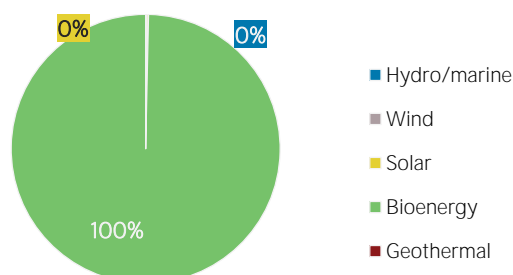
## RENEWABLE ENERGY CONSUMPTION (TFEC)

### Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy

Y-axis: Petajoules (PJ)

Values: 128 (2016), 130 (2017), 131 (2018), 133 (2019), 134 (2020), 186 (2021)
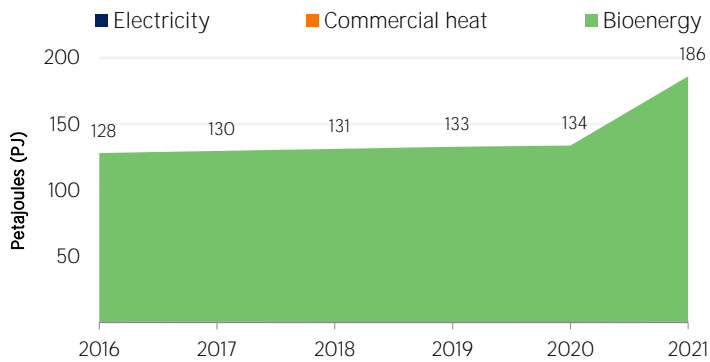
| Consumption by sector | 2016 | 2021 |
|---|---|---|
| Industry (TJ) | 830 | 1 463 |
| Transport (TJ) | 0 | 0 |
| Households (TJ) | 109 013 | 132 123 |
| Other (TJ) | 18 214 | 52 443 |

### Renewable energy consumption in 2021

Legend: ■ Geothermal ■ Solar direct

Pie chart: 100%, 1%

Pie chart: Industry, Transport, Households, Other
- 28% Other
- 71% Households
- 1%

Legend: ■ Industry ■ Transport ■ Households ■ Other
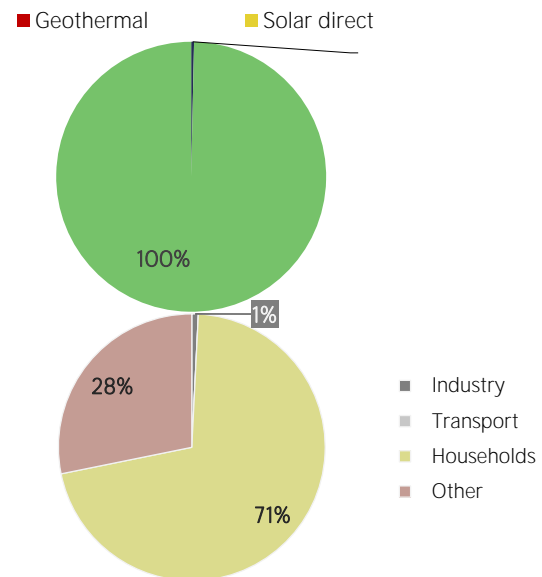
## ELECTRICITY CAPACITY

### Installed capacity trend

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

Y-axis: Gigawatts (GW), Renewable share (%)

Values: 0.3 (2016), 0.4 (2017), 0.4 (2018), 0.4 (2019), 0.4 (2020), 0.5 (2021), 0.5 (2022), 0.6 (2023)

Renewable share: 35%
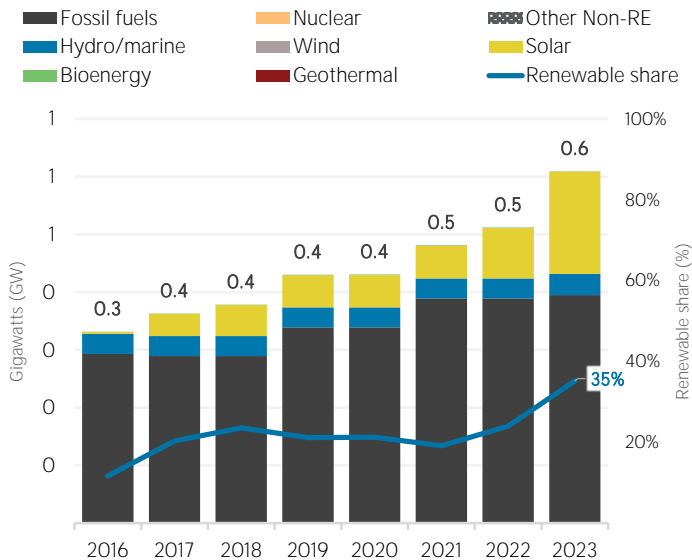
### Renewable capacity in 2023

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

Pie chart: 0%, 17% Hydro/marine, 83% Solar
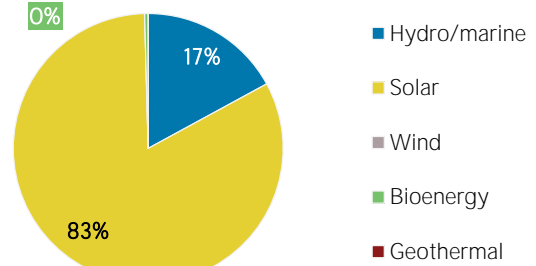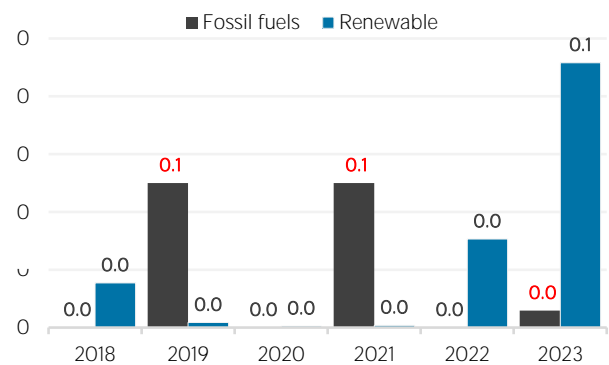
### Net capacity change in 2023 (MW)

| Non-renewable | + 6 |
|---|---|
| **Solar** | **+ 90** |
| **Bioenergy** | **0** |

| Hydro and marine | + 2 |
|---|---|
| **Wind** | **0** |
| **Geothermal** | **0** |

### Net capacity change (GW)

Legend: ■ Fossil fuels ■ Renewable

Values:
- 2018: 0.0, 0.0
- 2019: 0.1, 0.0
- 2020: 0.0, 0.0
- 2021: 0.1, 0.0
- 2022: 0.0, 0.0
- 2023: 0.0, 0.1
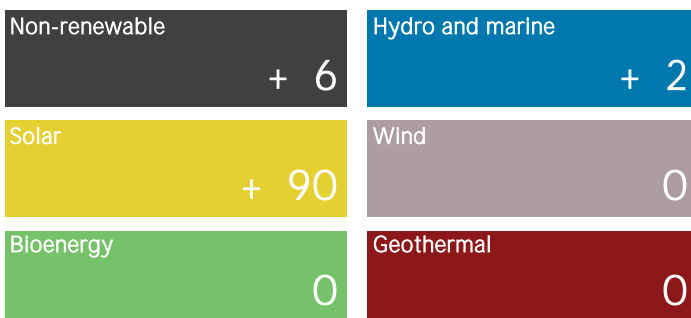
### Capacity utilisation in 2022 (%)

- Fossil fuels: 17%
- Nuclear:
- Hydro/Marine: 27%
- Solar: 15%
- Wind:
- Bioenergy: 16%
- Geothermal:
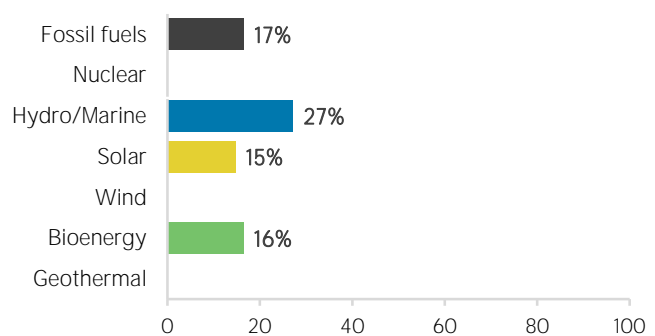
# ELECTRICITY GENERATION

| Generation in 2022 | GWh | % |
|---|---|---|
| Non-renewable | 566 | 76 |
| Renewable | 177 | 24 |
| Hydro and marine | 82 | 11 |
| Solar | 93 | 13 |
| Wind | 0 | 0 |
| Bioenergy | 1 | 0 |
| Geothermal | 0 | 0 |
| Total | 742 | 100 |

### Per capita electricity generation (kWh)
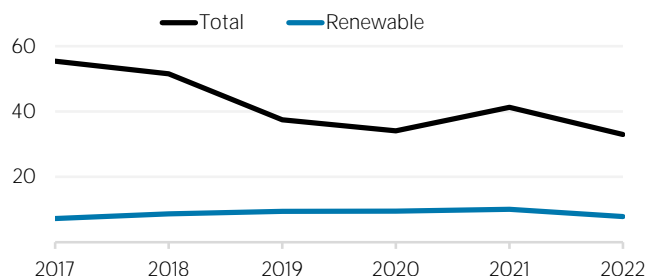


### Electricity generation trend
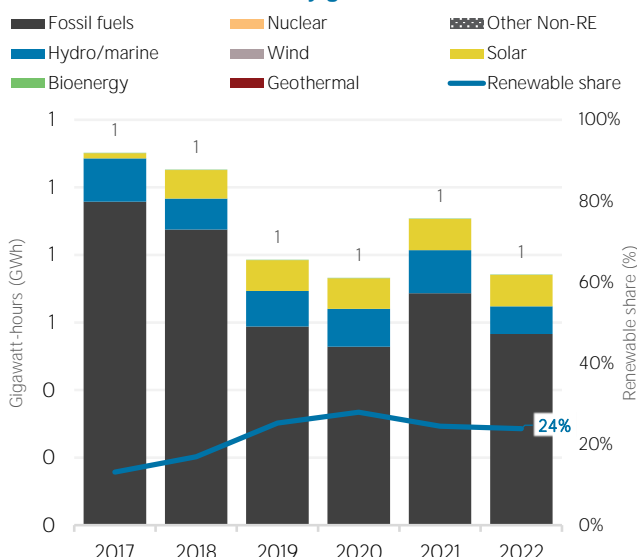


# LATEST POLICIES, PROGRAMMES AND LEGISLATION

**1** Law 053-2012 on general regulation of the electricity sub sector **2013**

**2** Sectorial Policy of Energy **2013**

**3** Lighting Africa solar lantern project in Burkina Faso **2009**

**4** Decree 2000-628 on the Letter of Energy Sector Development Policy **2000**

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# ENERGY AND EMISSIONS

### $CO_2$ emissions by sector



### Elec. & heat generation $CO_2$ emissions in
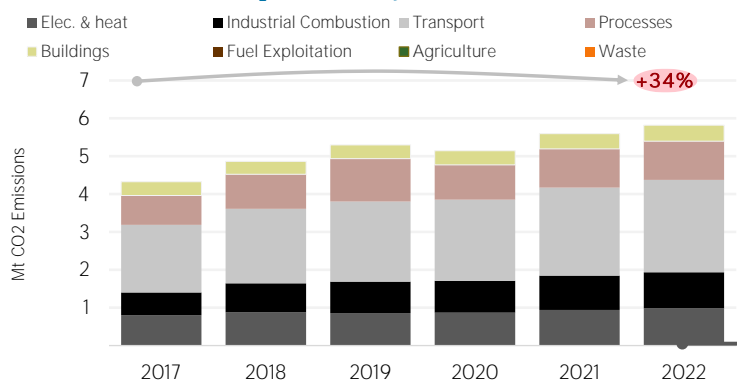


### Avoided emissions from renewable elec. & heat
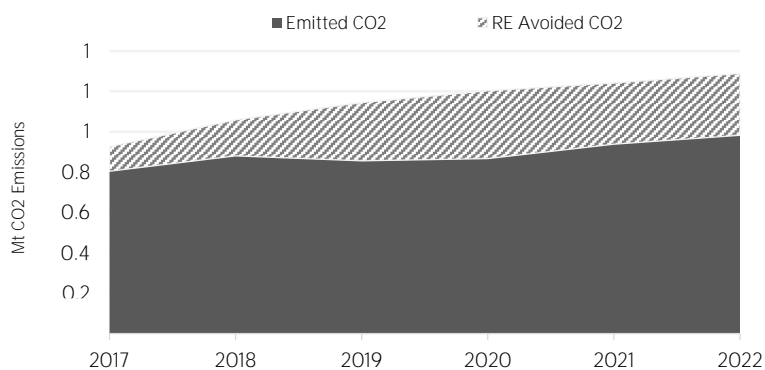


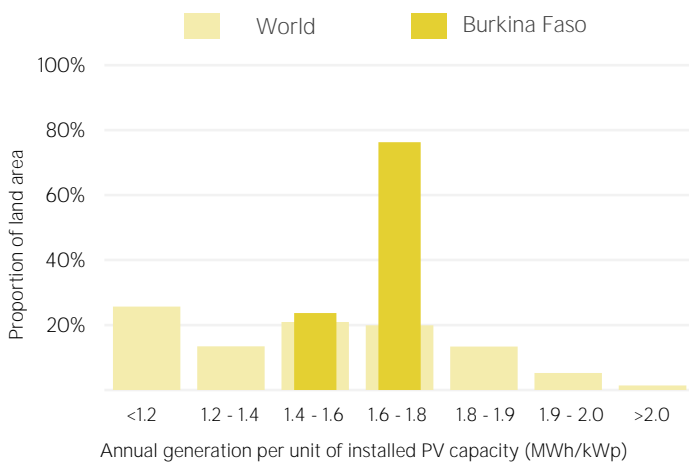*Avoided emissions based on fossil fuel mix used for power*
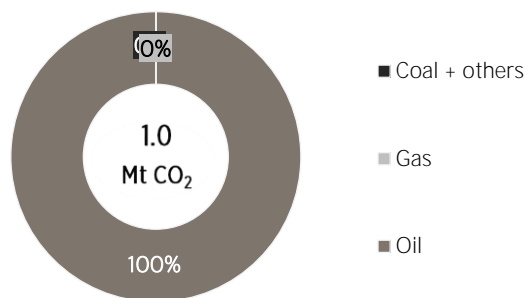
### $CO_2$ emission factor for elec. & heat generation
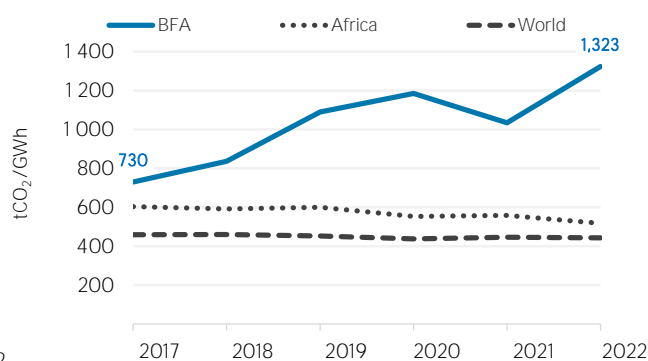


*Calculated by dividing power sector emissions by elec. + heat gen.*

## Distribution of solar potential
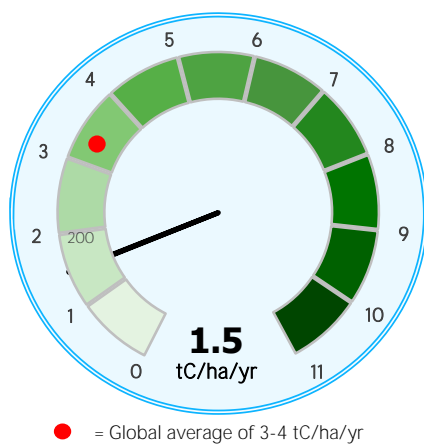
World    Burkina Faso

Proportion of land area

100%
80%
60%
40%
20%

<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

World    Burkina Faso

Proportion of land area

100%
80%
60%
40%
20%

<260 | 260-420 | 420-560 | 560-670 | 670-820 | 820-1060 | >1060

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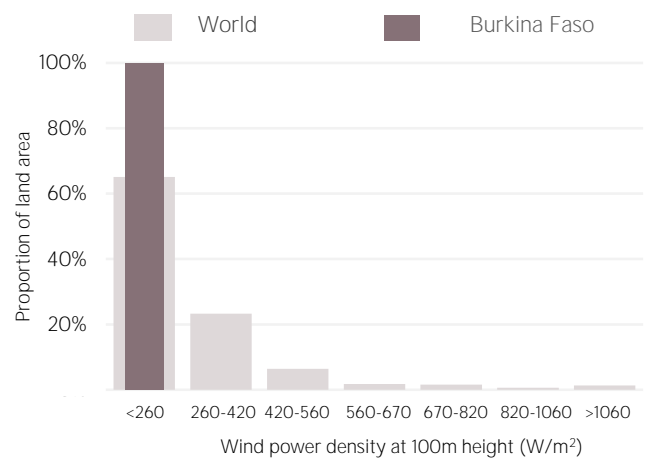
## Biomass potential: net primary production

5   6
4       7
3        8
2   200   9
1   1.5        10
0   tC/ha/yr   11

● = 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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