COUNTRY INDICATORS AND SDGS

GDP per capita ▬ 8.1.1 Real GDP growth rate

7.3.1 Energy intensity

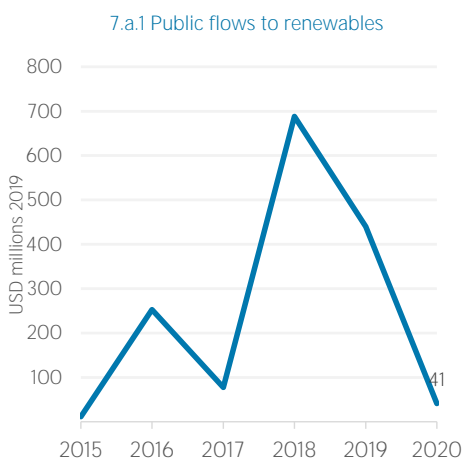▬ 7.1.1 Access to electricity (% population)
▬ 7.1.2 Access to clean cooking (% population)
▬ 7.2.1 Renewable energy (% TFEC)

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
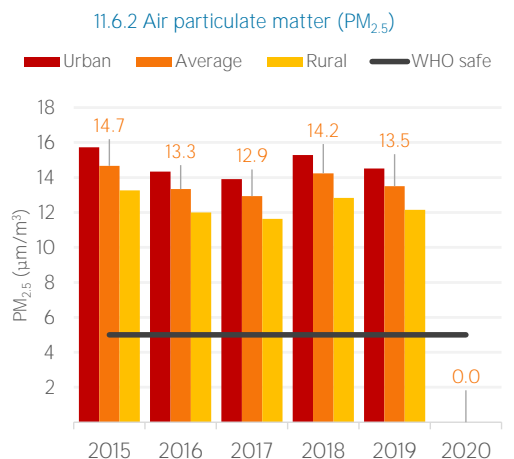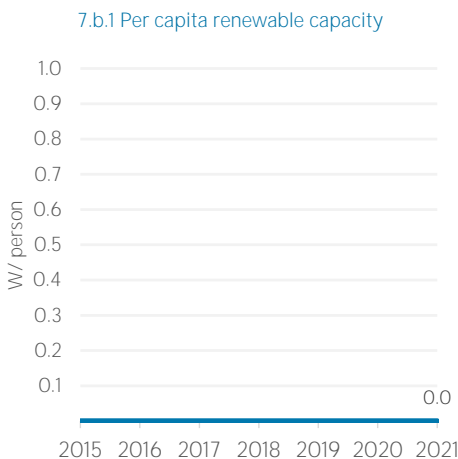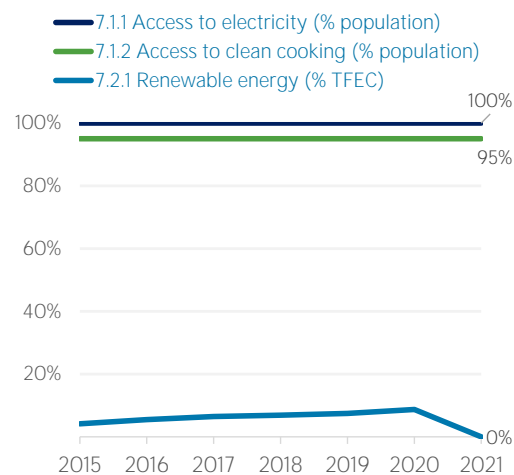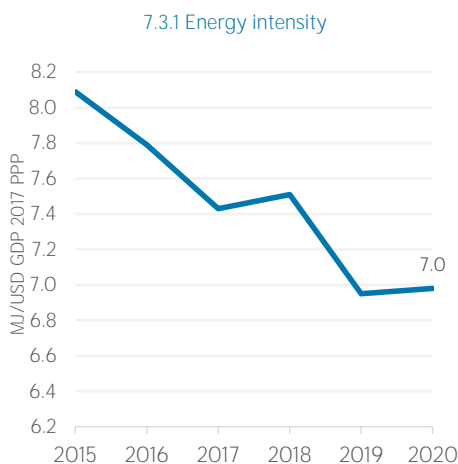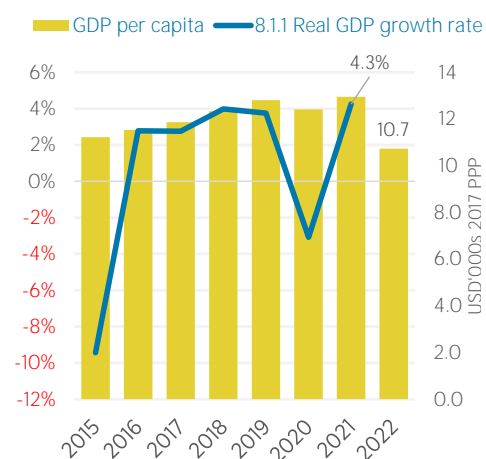
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2015	2020
Non-renewable (TJ)	3 657 331	3 254 642
Renewable (TJ)	82 295	199 354
Total (TJ)	3 739 627	3 453 996
Renewable share (%)	2	6

Growth in TES	2015-20	2019-20
Non-renewable (%)	-11.0	-8.7
Renewable (%)	+142.2	+24.3
Total (%)	-7.6	-7.3

Primary energy trade	2015	2020
Imports (TJ)	1 327 264	1 241 054
Exports (TJ)	54 064	51 984
Net trade (TJ)	-1 273 200	-1 189 070
Imports (% of supply)	35	36
Exports (% of production)	2	2
Energy self-sufficiency (%)	68	68

Total energy supply in 2020

■ Oil
■ Gas
■ Nuclear
■ Coal + others
■ Renewables
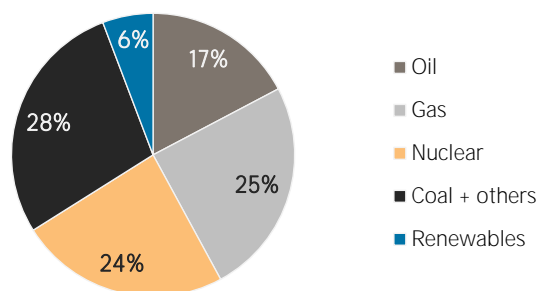
Renewable energy supply in 2020

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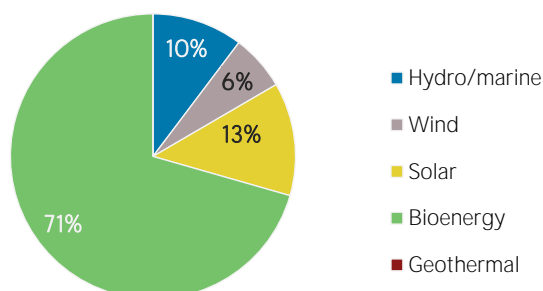
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy ■ Geothermal ■ Solar direct

Petajoules (PJ)

- 2015: 142
- 2016: 192
- 2017: 217
- 2018: 242
- 2019: 259
- 2020: 281
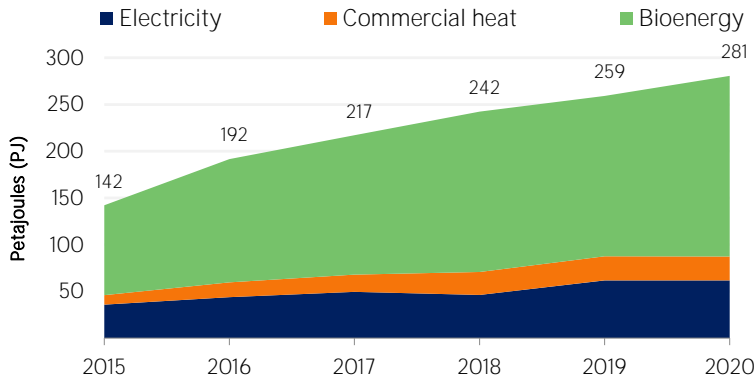
Consumption by sector	2015	2020
Industry (TJ)	20 168	40 879
Transport (TJ)	3 506	5 169
Households (TJ)	68 752	105 813
Other (TJ)	49 810	128 754

Renewable energy consumption in 2020

Pie chart (top):
- 22% (Electricity)
- 9% (Commercial heat)
- 69% (Bioenergy)

Pie chart (bottom):
- Industry: 15%
- Transport: 2%
- Households: 38%
- Other: 46%
- n.a.

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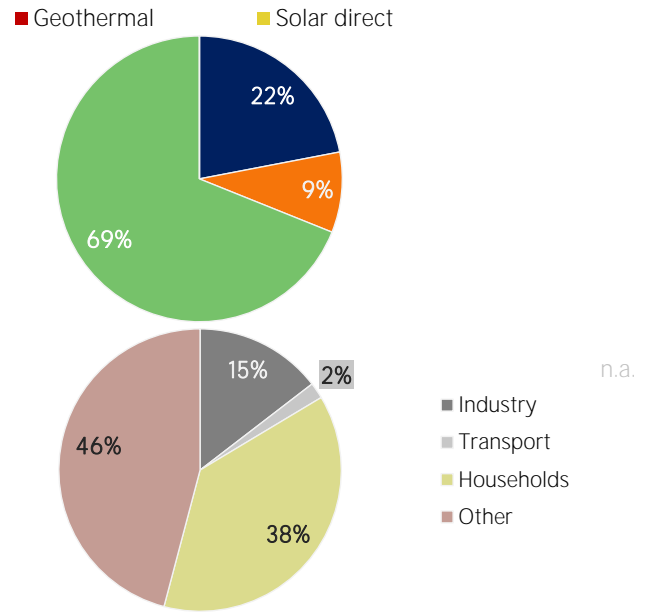
ELECTRICITY CAPACITY

Installed capacity trend

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

Gigawatts (GW) / Renewable share (%)

- 2015: 56
- 2016: 58
- 2017: 53
- 2018: 53
- 2019: 56
- 2020: 58
- 2021: 59
- 2022: 59

Renewable share (2022): 25%
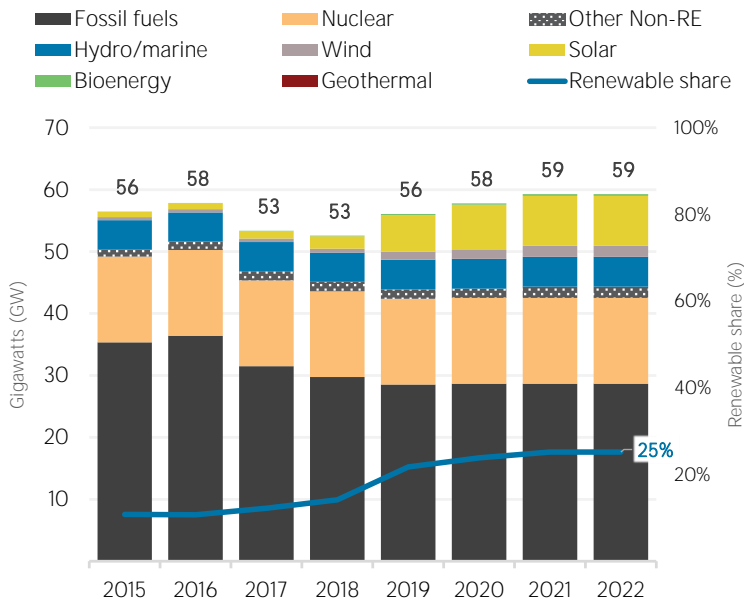
Renewable capacity in 2022

- Hydro/marine: 32%
- Solar: 54%
- Wind: 12%
- Bioenergy: 2%
- Geothermal

Legend: ■ Hydro/marine ■ Solar ■ Wind ■ Bioenergy ■ Geothermal
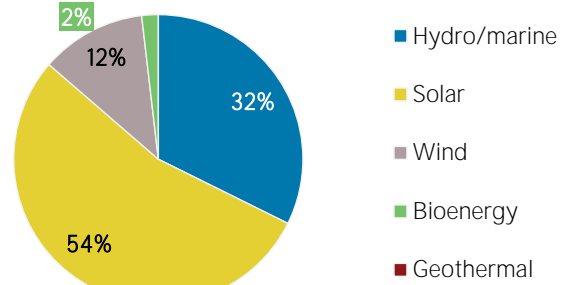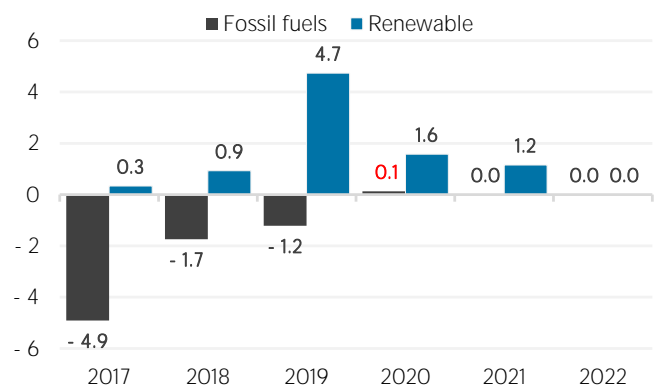
Net capacity change in 2022 (MW)

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

Net capacity change (GW)

Legend: ■ Fossil fuels ■ Renewable

Year	Fossil fuels	Renewable
2017	- 4.9	0.3
2018	- 1.7	0.9
2019	- 1.2	4.7
2020	0.1	1.6
2021	0.0	1.2
2022	0.0	0.0
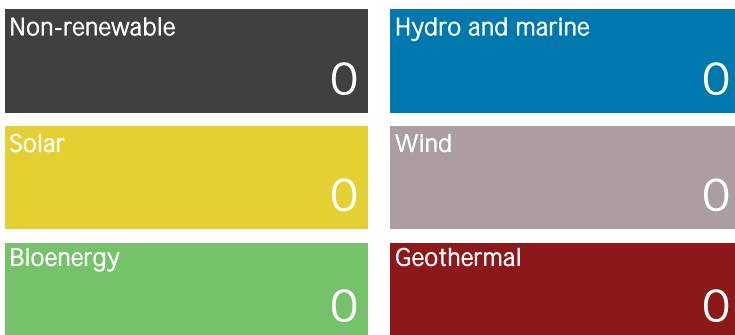
Capacity utilisation in 2021 (%)

- Fossil fuels: 22%
- Nuclear: 63%
- Hydro/Marine: 14%
- Solar: 11%
- Wind: 25%
- Bioenergy: 35%
- Geothermal: (none)
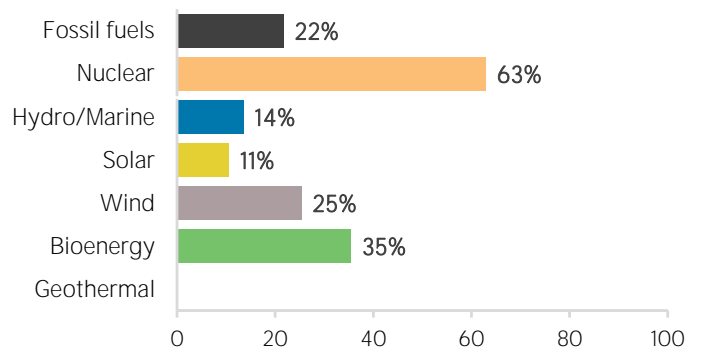
ELECTRICITY GENERATION

Generation in 2021

Generation in 2021	GWh	%
Non-renewable	132 654	89
Renewable	17 136	11
Hydro and marine	5 729	4
Solar	7 141	5
Wind	3 511	2
Bioenergy	755	1
Geothermal	0	0
Total	149 790	100

Per capita electricity generation (kWh)
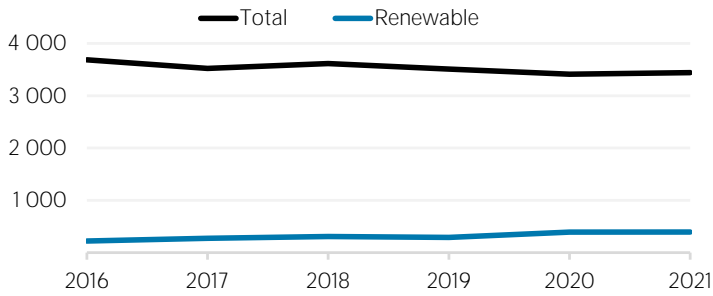
Electricity generation trend
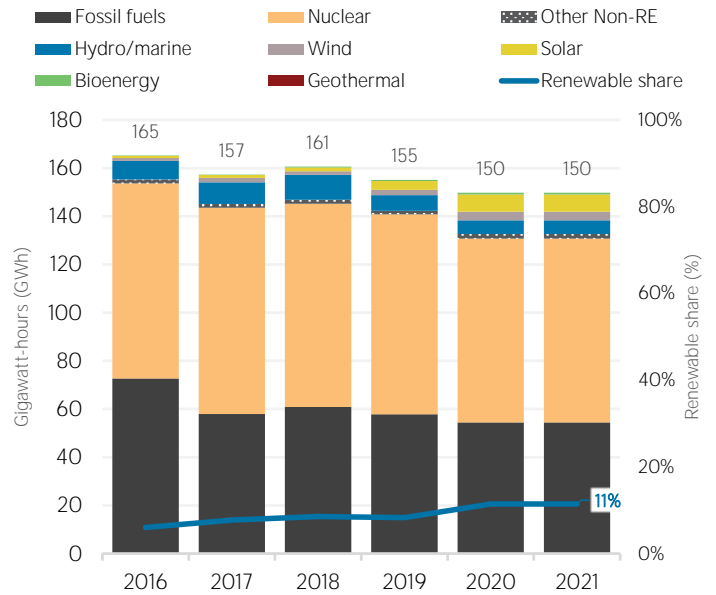

LATEST POLICIES, PROGRAMMES AND LEGISLATION

1	National energy efficiency goals for 2020	2019
2	On Energy Efficiency in Buildings, On Commercial Metering of Utility Services, and On the Energy Efficiency Fund	2019
3	Ukraine Law on renewable energy auctions (Law No. 2712-VIII)	2019
4	Bill No. 9260 (VAT exemption)	2018
5	Law on Energy Efficiency in Buildings	2018

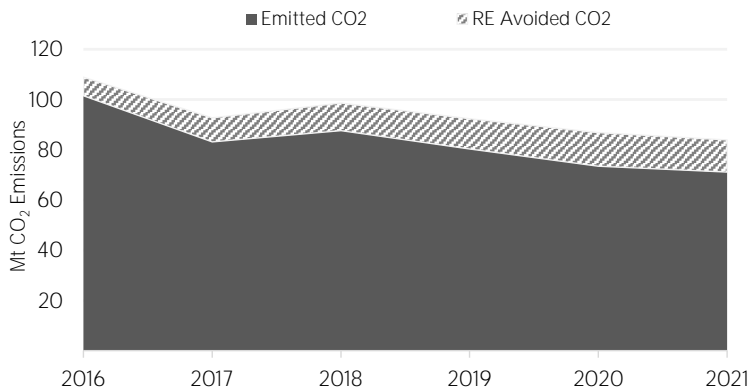# ENERGY AND EMISSIONS

Energy-related CO_2 emissions by sector
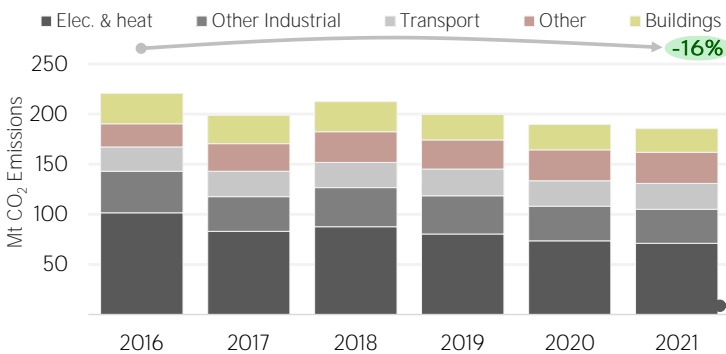
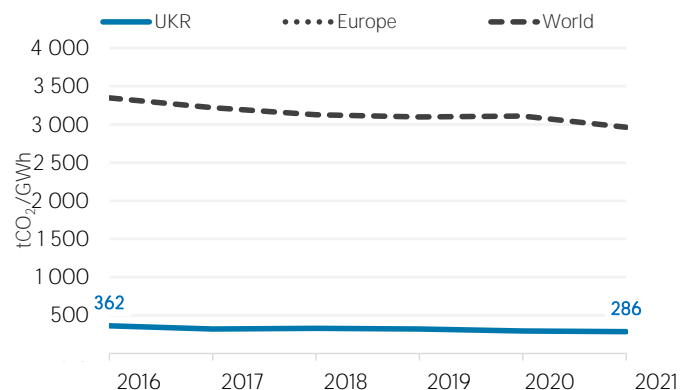## Elec. & heat generation CO_2 emissions in
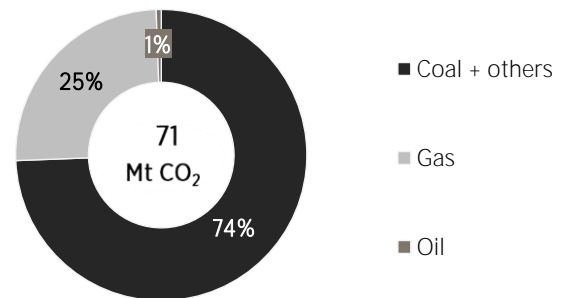
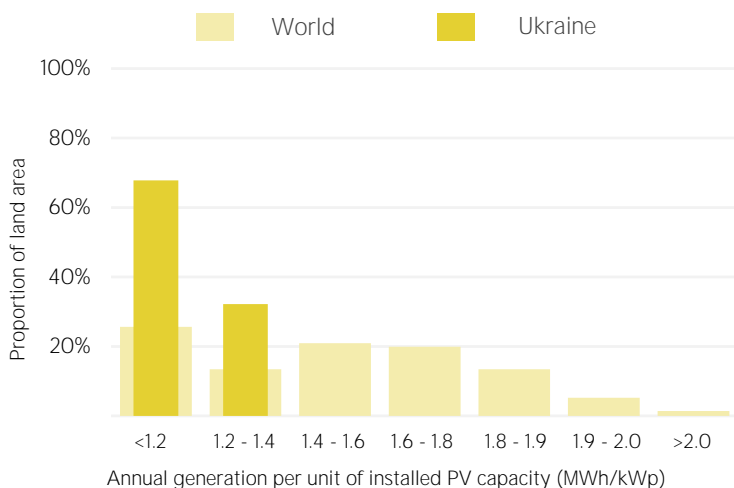## Avoided emissions from renewable elec. & heat

Avoided emissions based on fossil fuel mix used for power

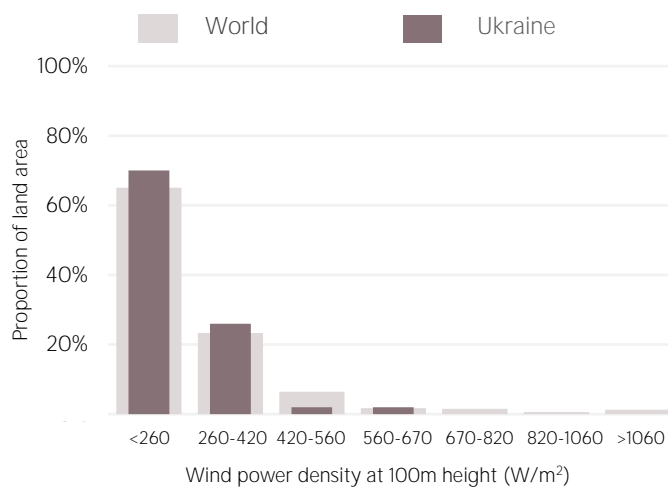## CO_2 emission factor for elec. & heat generation

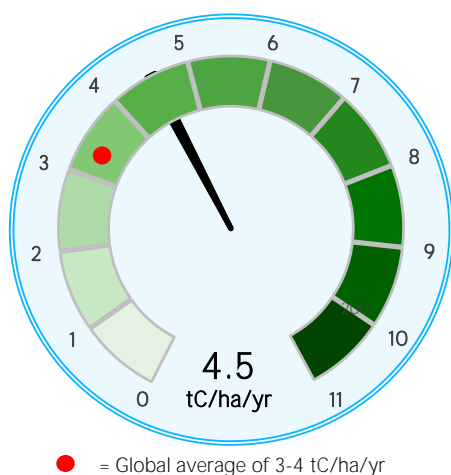*Calculated by dividing power sector emissions by elec. + heat gen.*

Distribution of solar potential

Legend: World | Ukraine

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

Annual generation per unit of installed PV capacity (MWh/kWp)
Categories: <1.2 | 1.2 - 1.4 | 1.4 - 1.6 | 1.6 - 1.8 | 1.8 - 1.9 | 1.9 - 2.0 | >2.0

Distribution of wind potential

Legend: World | Ukraine

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

Wind power density at 100m height (W/m²)
Categories: <260 | 260-420 | 420-560 | 560-670 | 670-820 | 820-1060 | >1060

Biomass potential: net primary production

4.5
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/m²) 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

IRENA
International Renewable Energy Agency

IRENA Headquarters
Masdar City
P.O. Box 236, Abu Dhabi
United Arab Emirates
www.irena.org