Cambodia

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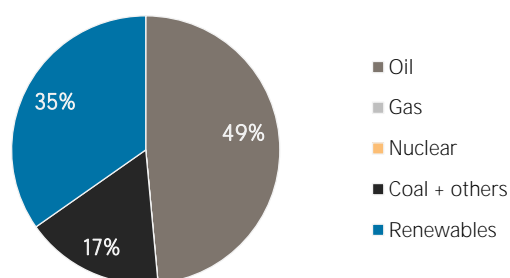
Urban — Average — Rural — WHO safe
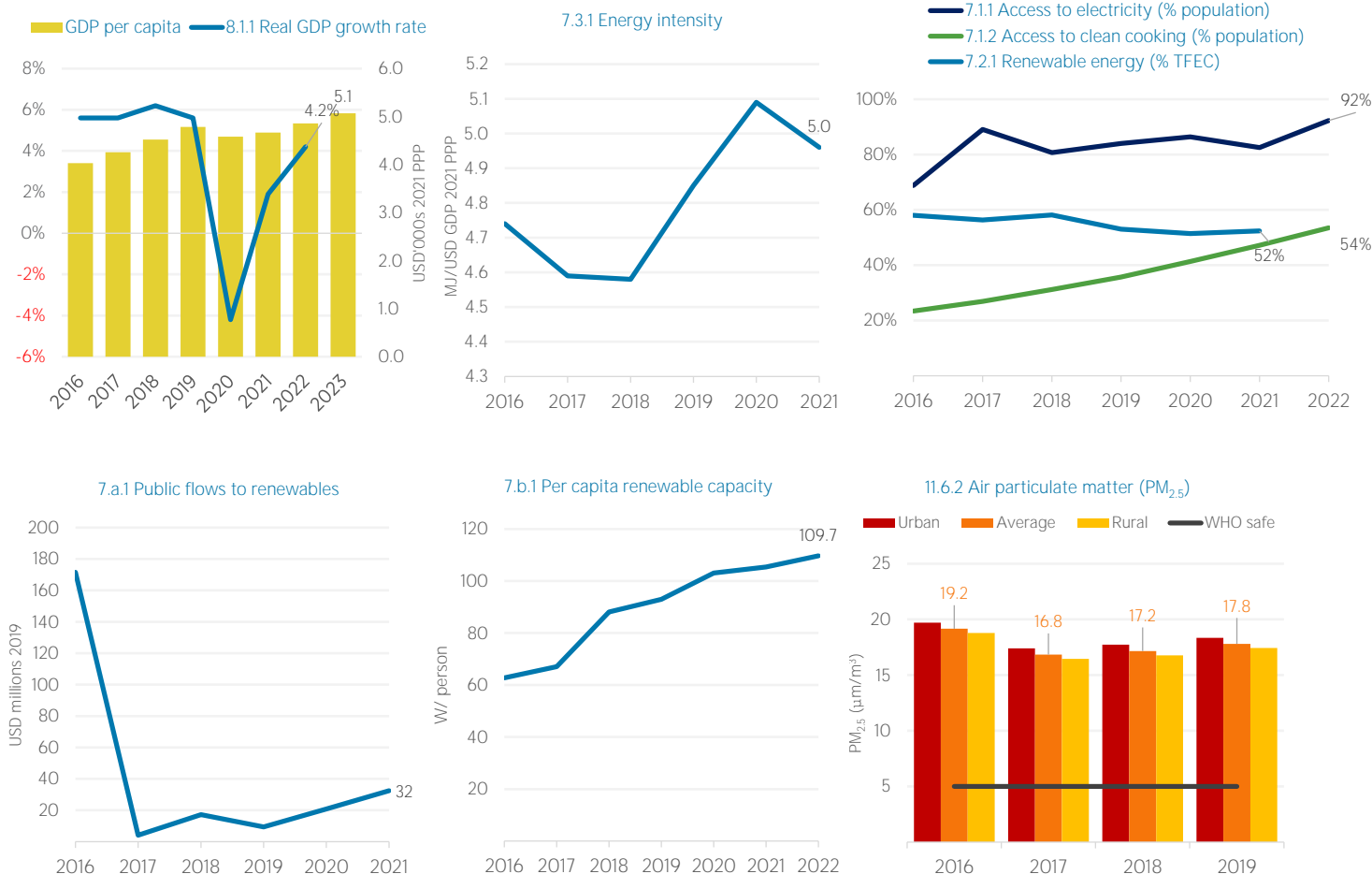
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	127 862	181 514
Renewable (TJ)	151 360	96 585
Total (TJ)	279 221	278 099
Renewable share (%)	54	35

Growth in TES	2016-21	2020-21
Non-renewable (%)	+42.0	-4.5
Renewable (%)	-36.2	-43.8
Total (%)	-0.4	-23.2

Primary energy trade	2016	2021
Imports (TJ)	133 793	188 319
Exports (TJ)	0	1 708
Net trade (TJ)	- 133 793	- 186 611
Imports (% of supply)	48	68
Exports (% of production)	0	2
Energy self-sufficiency (%)	53	33

Total energy supply in 2021

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

Renewable energy supply in 2021

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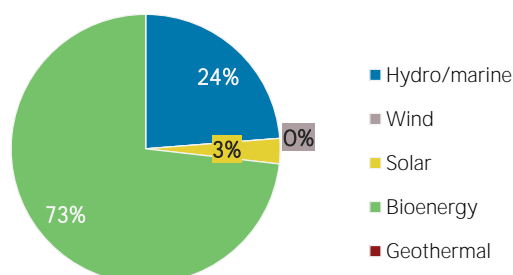
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy

Values on trend: 159 (2016), 169 (2017), 177 (2018), 177 (2019), 181 (2020), 111 (2021)
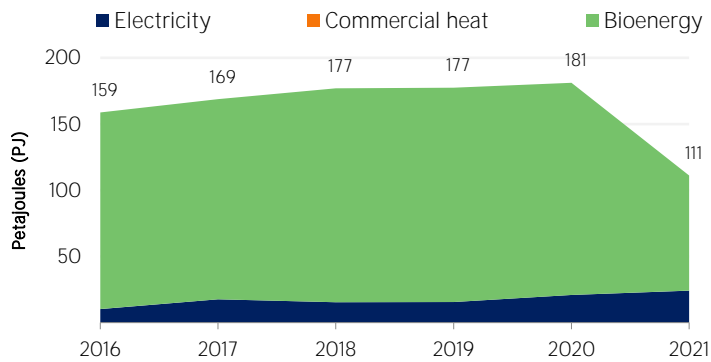
Consumption by sector	2016	2021
Industry (TJ)	42 054	14 960
Transport (TJ)	0	0
Households (TJ)	89 869	41 300
Other (TJ)	26 786	54 786

Renewable energy consumption in 2021

Legend: ■ Geothermal ■ Solar direct

Pie: 22% Electricity, 78% Bioenergy

Second pie: Industry 13%, Households 37%, Other 49%

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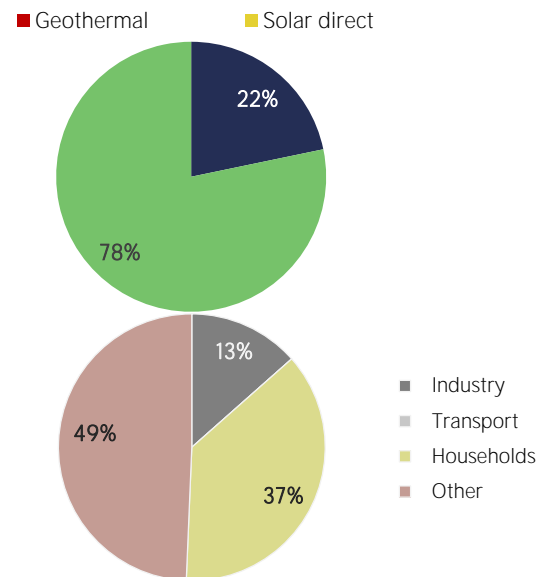
ELECTRICITY CAPACITY

Installed capacity trend

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

Values: 1.7 (2016), 1.9 (2017), 2.3 (2018), 2.5 (2019), 3.1 (2020), 3.1 (2021), 3.9 (2022), 4.0 (2023). Renewable share ~58%

Net capacity change in 2023 (MW)

Non-renewable	+ 12
Hydro and marine	**+ 115**
Solar	**+ 5**
Wind	**0**
Bioenergy	**0**
Geothermal	**0**
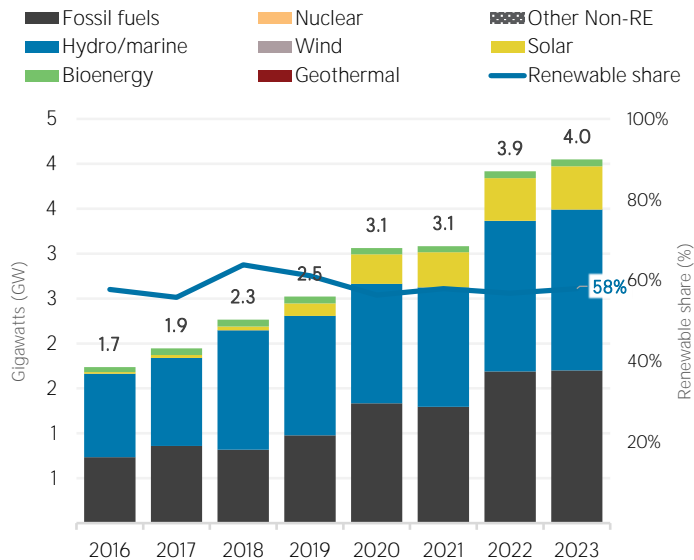
Renewable capacity in 2023

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

Pie: 76% Hydro/marine, 21% Solar, 3% Bioenergy, 0% Wind

Net capacity change (GW)

Legend: ■ Fossil fuels ■ Renewable

Values: 2018: 0.0 / 0.4; 2019: 0.2 / 0.1; 2020: 0.4 / 0.2; 2021: 0.0 / 0.1; 2022: 0.4 / 0.4; 2023: 0.0 / 0.1
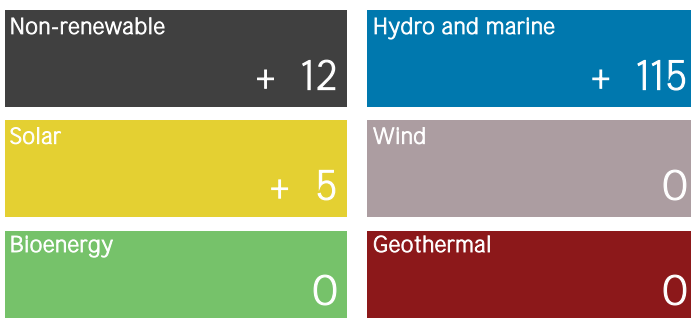
Capacity utilisation in 2022 (%)

Fossil fuels	27%
Nuclear	
Hydro/Marine	45%
Solar	20%
Wind	14%
Bioenergy	8%
Geothermal	
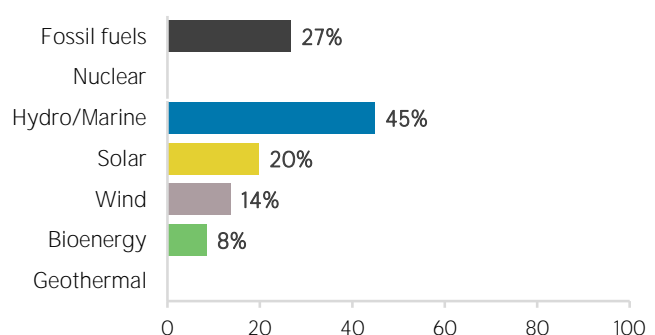
ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	3 490	34
Renewable	6 705	66
Hydro and marine	5 898	58
Solar	754	7
Wind	0	0
Bioenergy	52	1
Geothermal	0	0
Total	10 195	100

Per capita electricity generation (kWh)
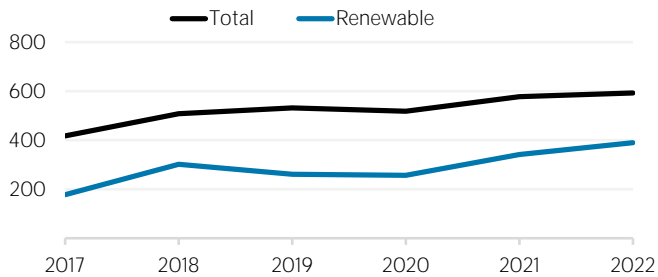
Electricity generation trend
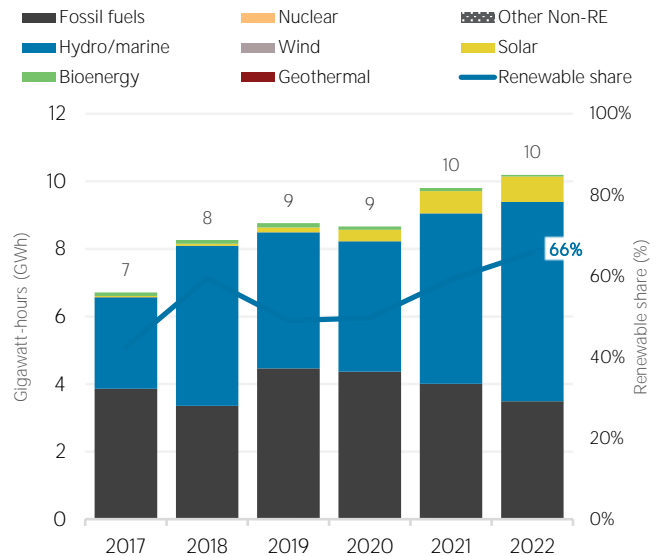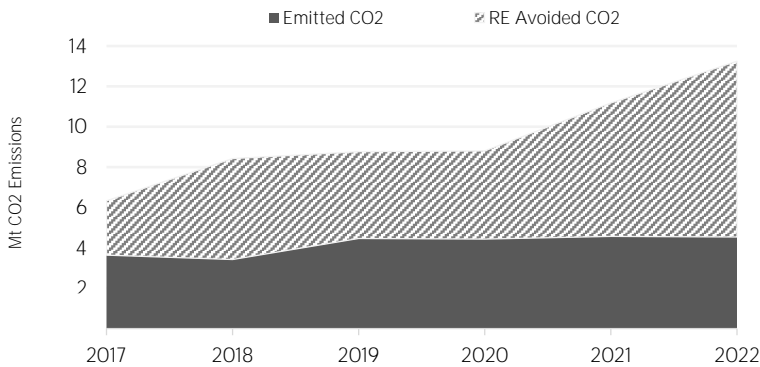

LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 2022 Electricity price stabilisation — **2022**

2 National Energy Efficiency Programme (NEEP) — **2022**

3 Rural Electrification Fund's programmes — **2004**

4

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ENERGY AND EMISSIONS

CO_2 emissions by sector

Elec. & heat generation CO_2 emissions in
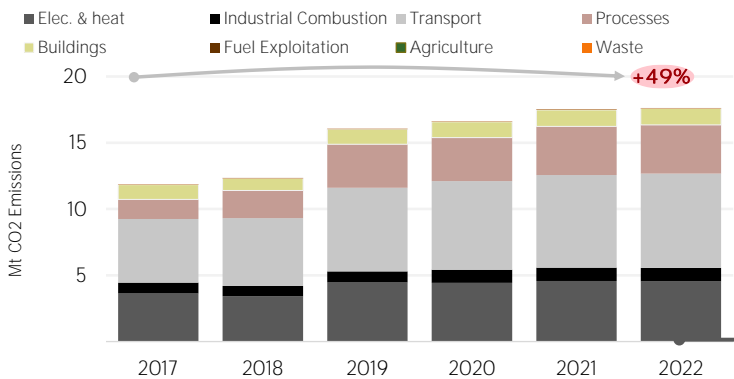
Avoided emissions from renewable elec. & heat
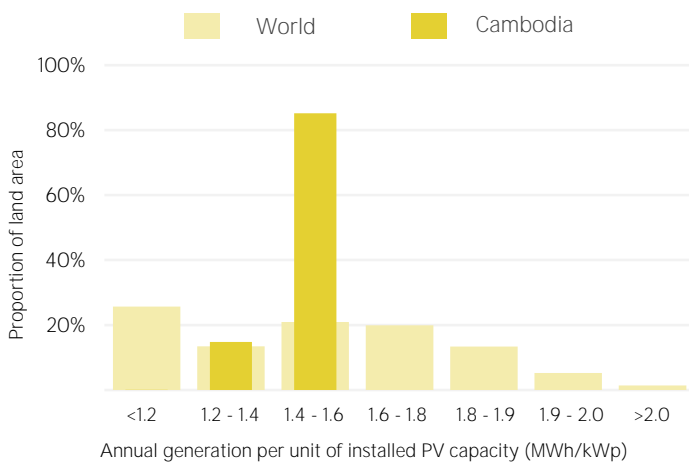

Avoided emissions based on fossil fuel mix used for power
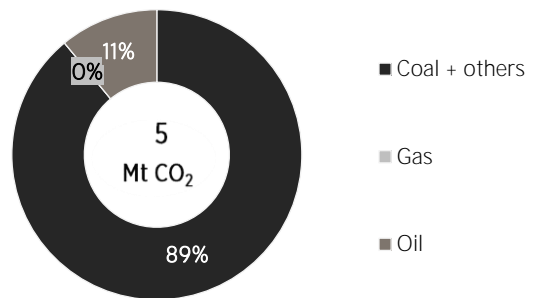
CO_2 emission factor for elec. & heat generation
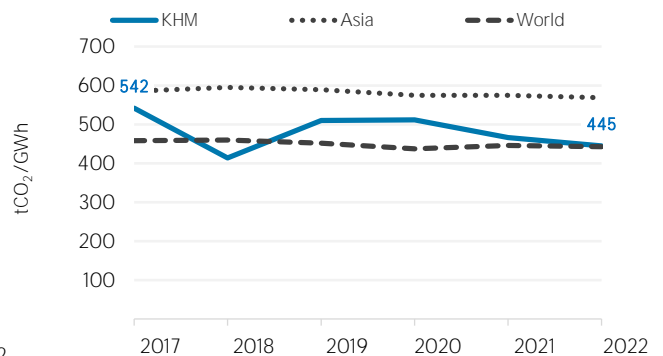
Calculated by dividing power sector emissions by elec. + heat gen.
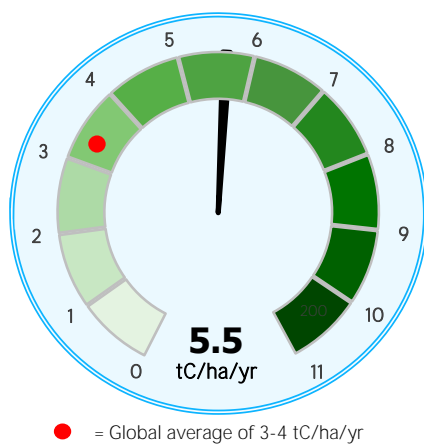
Distribution of solar potential

Legend: World, Cambodia

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, Cambodia

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

Wind power density at 100m height (W/m^2)
Categories: <260, 260-420, 420-560, 560-670, 670-820, 820-1060, >1060
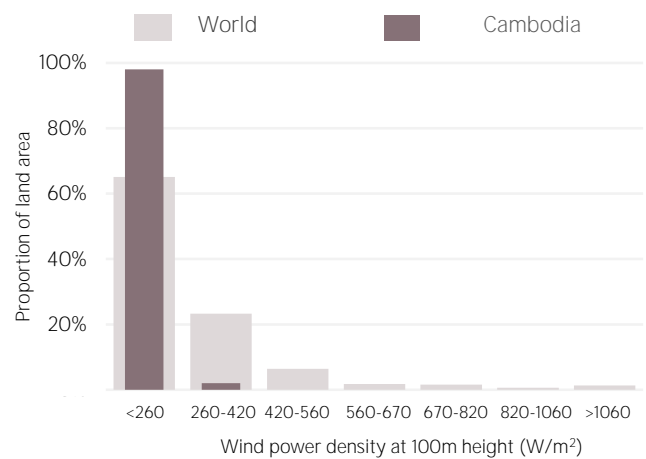
Biomass potential: net primary production

5.5
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