Croatia

IRENA
International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS

GDP per capita ■ — **8.1.1 Real GDP growth rate**

42.6
3.6%

7.3.1 Energy intensity

2.3

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

100%
100%
31%

7.a.1 Public flows to renewables

0

7.b.1 Per capita renewable capacity

1,021.5

11.6.2 Air particulate matter (PM$_{2.5}$)

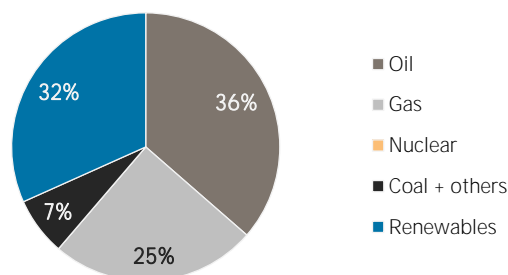■ Urban ■ Average ■ Rural — WHO safe

18.2 19.0 15.3
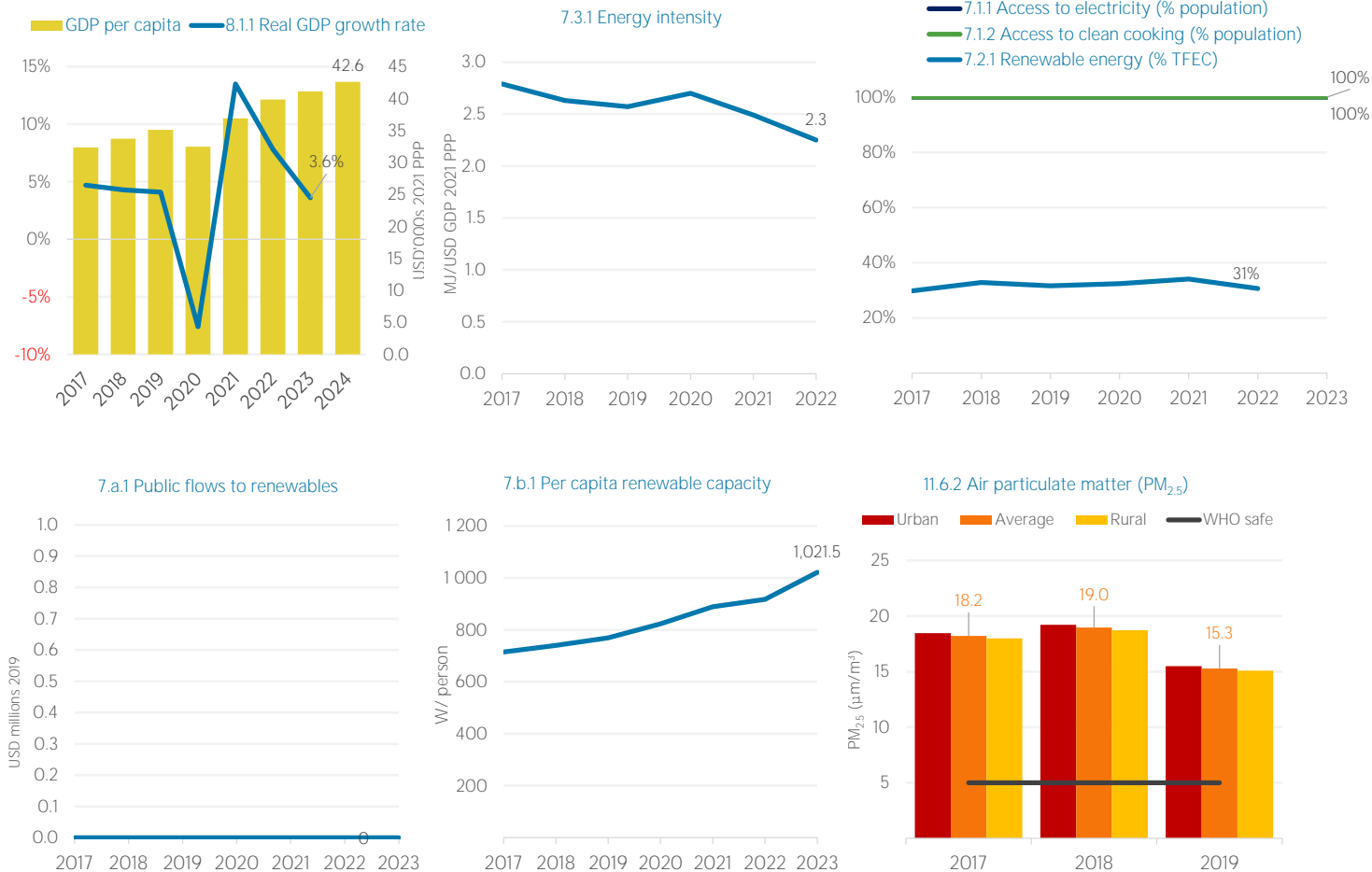
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2017	2022
Non-renewable (TJ)	269 902	245 276
Renewable (TJ)	103 327	113 852
Total (TJ)	373 229	359 128
Renewable share (%)	28	32

Growth in TES	2017-22	2021-22
Non-renewable (%)	-9.1	+0.0
Renewable (%)	+10.2	+4.1
Total (%)	-3.8	+1.3

Primary energy trade	2017	2022
Imports (TJ)	343 743	371 140
Exports (TJ)	146 443	154 914
Net trade (TJ)	- 197 300	- 216 226
Imports (% of supply)	92	103
Exports (% of production)	79	94
Energy self-sufficiency (%)	50	46

Total energy supply in 2022

32% 36% 7% 25%

■ Oil
■ Gas
■ Nuclear
■ Coal + others
■ Renewables

Renewable energy supply in 2022

1% 28% 9% 60% 1%

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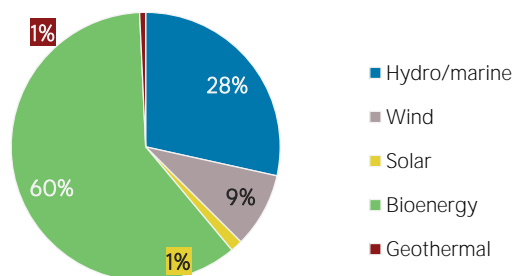
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: Electricity, Commercial heat, Bioenergy

Y-axis: Petajoules (PJ)

Values: 116 (2017), 123 (2018), 124 (2019), 134 (2020), 142 (2021), 141 (2022)
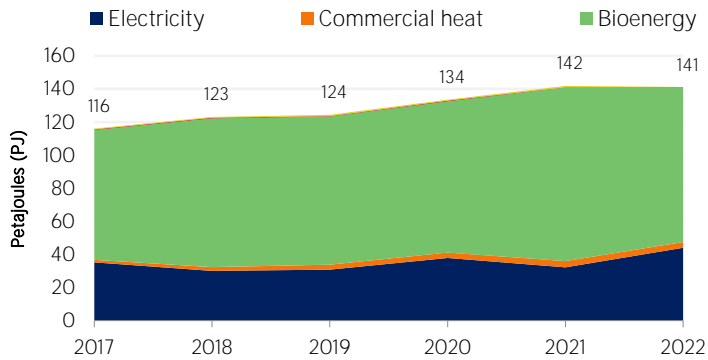
Consumption by sector	2017	2022
Industry (TJ)	9 582	11 524
Transport (TJ)	614	1 659
Households (TJ)	60 648	61 637
Other (TJ)	45 231	66 342

Renewable energy consumption in 2022

Legend: Geothermal, Solar direct

Pie chart 1: Electricity 31%, Commercial heat 2%, Bioenergy 66%

Pie chart 2 (by sector): Industry 8%, Transport 1%, Households 44%, Other 47%
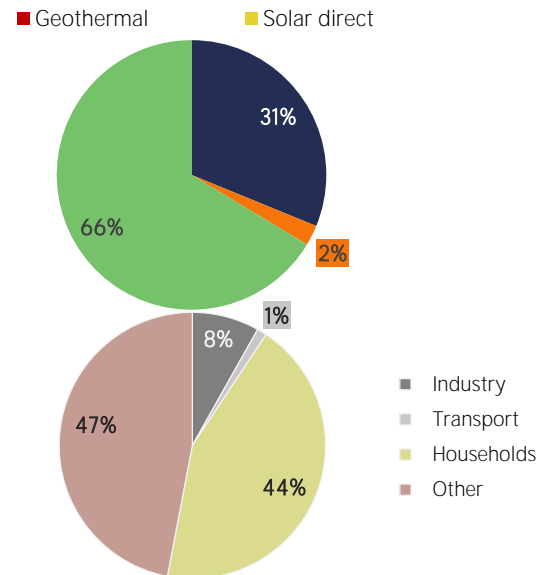
ELECTRICITY CAPACITY

Installed capacity trend

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

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

Values: 5.0 (2017), 5.0 (2018), 4.7 (2019), 4.7 (2020), 4.9 (2021), 5.0 (2022), 5.4 (2023), 5.7 (2024), 77%
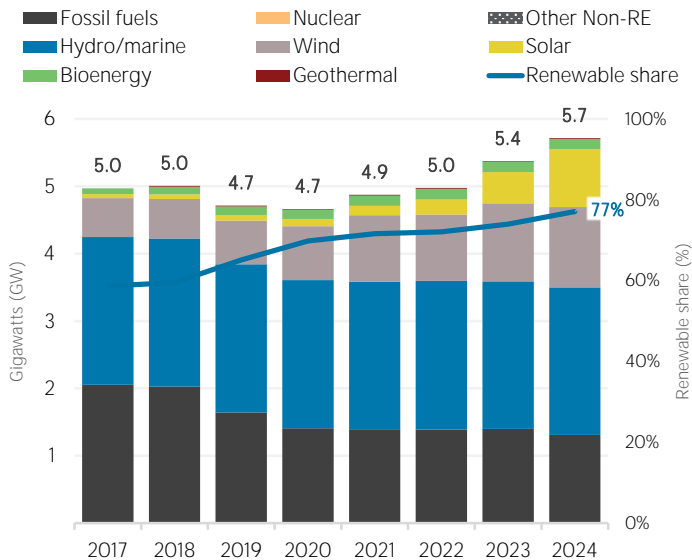
Net capacity change in 2024 (MW)

Non-renewable **- 88**	Hydro and marine **0**
Solar **+ 397**	Wind **+ 31**
Bioenergy **+ 2**	Geothermal **0**
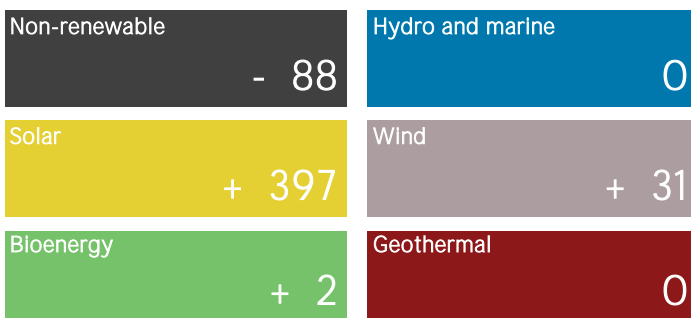
Renewable capacity in 2024

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

Pie chart: Hydro/marine 50%, Solar 20%, Wind 27%, Bioenergy 3%, Geothermal 0%

Net capacity change (GW)

Legend: Fossil fuels, Renewable

Year	Fossil fuels	Renewable
2019	- 0.4	0.1
2020	- 0.2	0.2
2021	0.0	0.2
2022	0.0	0.1
2023	0.0	0.4
2024	- 0.1	0.4
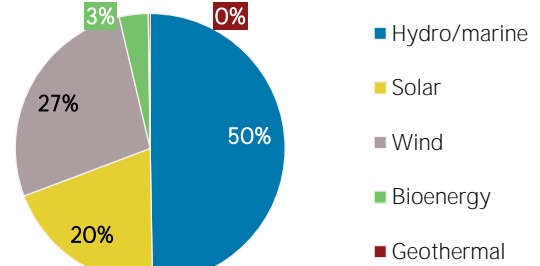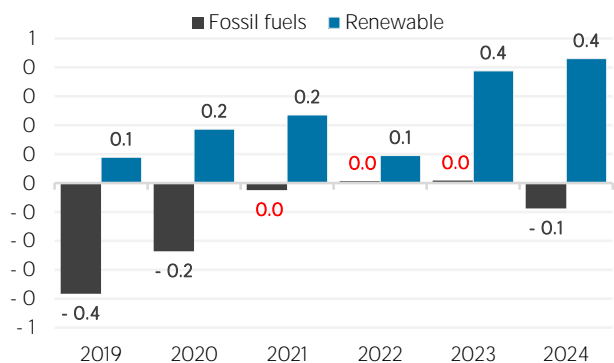
Capacity utilisation in 2023 (%)

Fossil fuels	43%
Nuclear	
Hydro/Marine	42%
Solar	14%
Wind	28%
Bioenergy	77%
Geothermal	24%
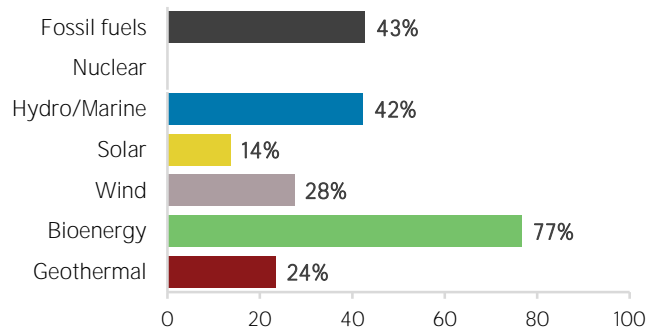
Generation in 2023	GWh	%
Non-renewable	5 314	30
Renewable	12 227	70
Hydro and marine	8 161	47
Solar	413	2
Wind	2 587	15
Bioenergy	1 047	6
Geothermal	21	0
Total	17 541	100

Electricity generation trend

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

Per capita electricity generation (kWh)

Total — Renewable
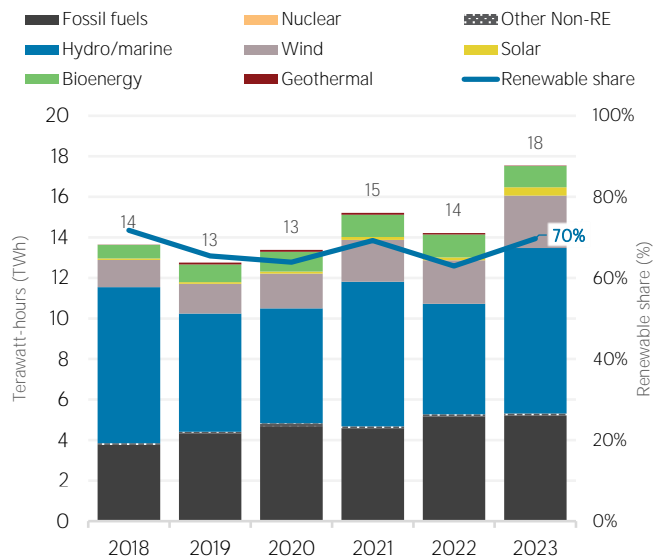
LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 Croatia - REPowerEU — **2024**

2 Energy renovation of buildings — **2024**

3 Establishment of a hydrogen-based economy through the North Adriatic Hydrogen Valley — **2024**

4 Government spending to enhance the transmission and distribution capacities of the electricity network — **2024**

5 Regulation 2024/573 on fluorinated greenhouse gases — **2024**
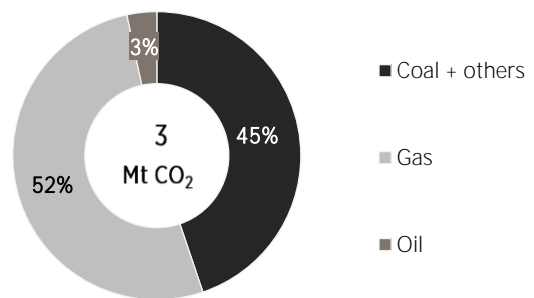
ENERGY AND EMISSIONS

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

3 Mt CO_2

Coal + others — 45%
Gas — 52%
Oil — 3%
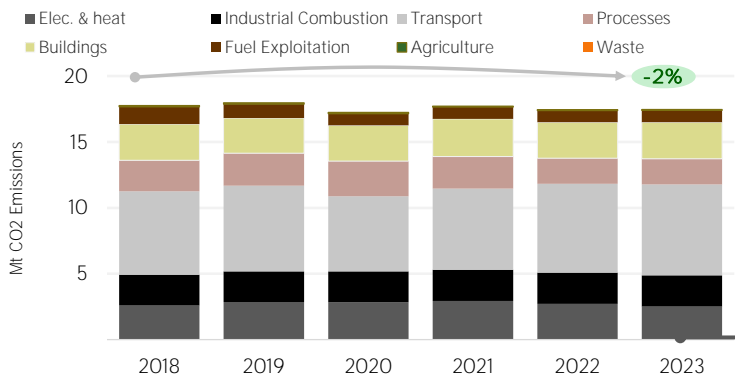
Avoided emissions from renewable elec. & heat

Emitted CO2 — RE Avoided CO2
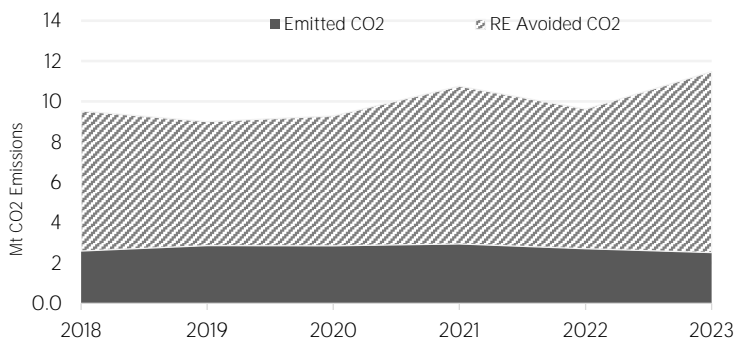
Avoided emissions based on fossil fuel mix used for power

CO_2 emission factor for elec. & heat generation

HRV — Europe — World

151 ... 117
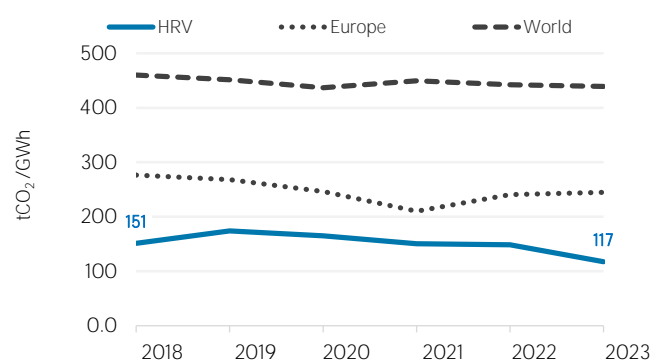
Calculated by dividing power sector emissions by elec. + heat gen.

Distribution of solar potential

World Croatia

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)
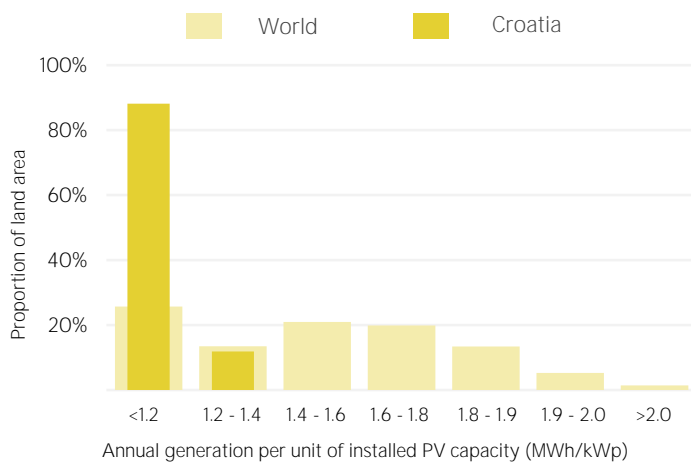
Distribution of wind potential

World Croatia

Proportion of land area

100%
80%
60%
40%
20%
0%

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

Wind power density at 100m height (W/m²)
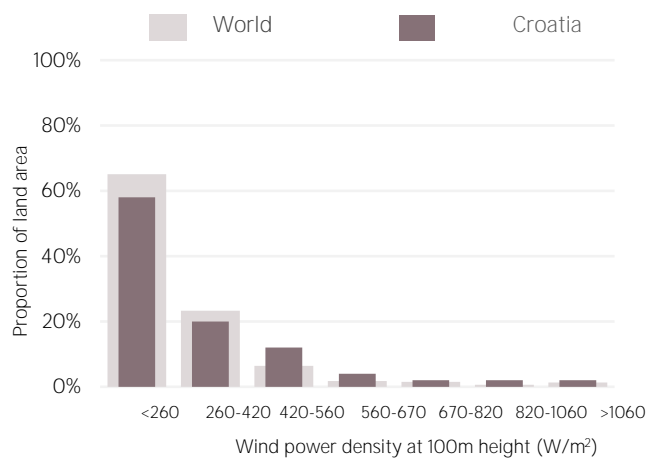
Biomass potential: net primary production

5.5
tC/ha/yr

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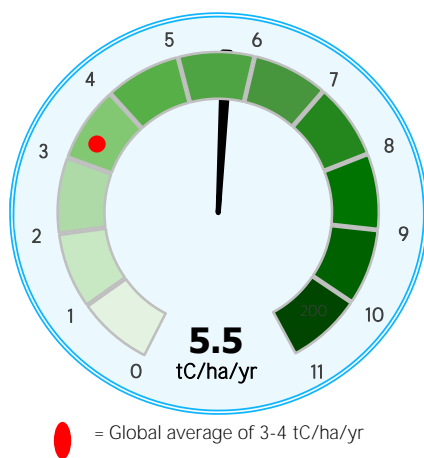
Indicators of renewable resource potential

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/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

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