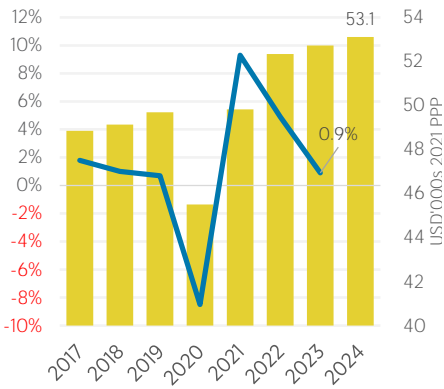
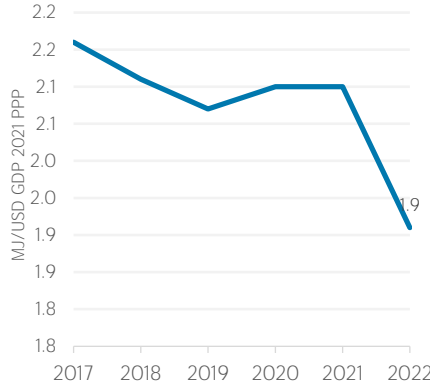


COUNTRY INDICATORS AND SDGS

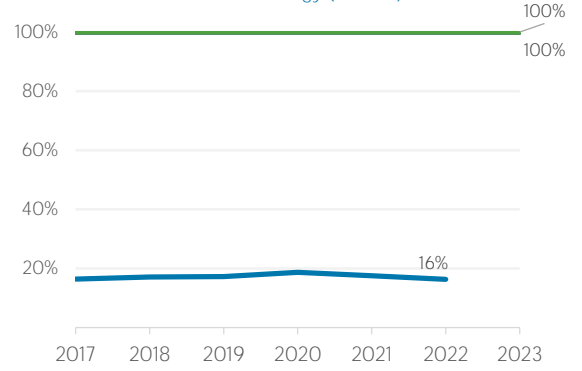
■ GDP per capita ■ 8.1.1 Real GDP growth rate



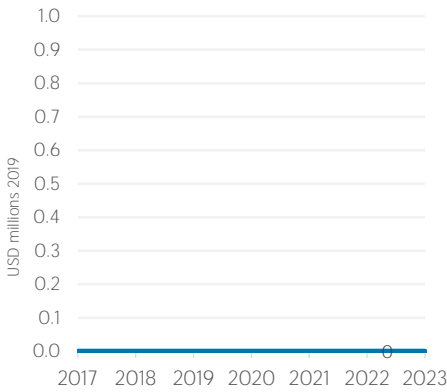
7.3.1 Energy intensity



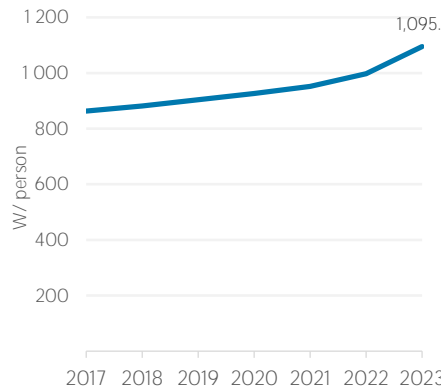
■ 7.1.1 Access to electricity (% population)
■ 7.1.2 Access to clean cooking (% population)
■ 7.2.1 Renewable energy (% TREC)



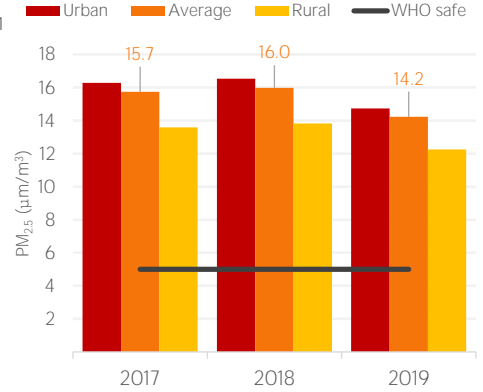
7.a.1 Public flows to renewables



7.b.1 Per capita renewable capacity



11.6.2 Air particulate matter (PM_{2.5})



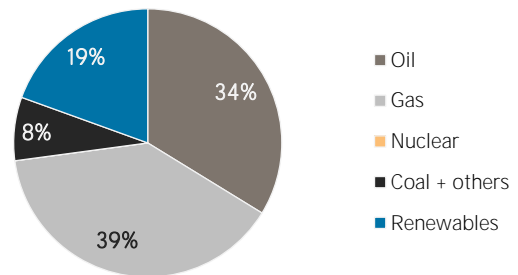
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2017	2022
Non-renewable (TJ)	5 274 712	4 834 953
Renewable (TJ)	1 169 444	1 169 904
Total (TJ)	6 444 156	6 004 856
Renewable share (%)	18	19

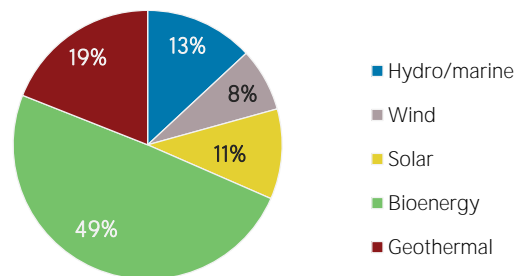
Growth in TES	2017-22	2021-22
Non-renewable (%)	-8.3	-4.2
Renewable (%)	+0.0	+2.2
Total (%)	-6.8	-3.0

Primary energy trade	2017	2022
Imports (TJ)	6 614 554	6 370 982
Exports (TJ)	1 407 249	1 394 273
Net trade (TJ)	-5 207 305	-4 976 709
Imports (% of supply)	103	106
Exports (% of production)	97	100
Energy self-sufficiency (%)	23	23

Total energy supply in 2022

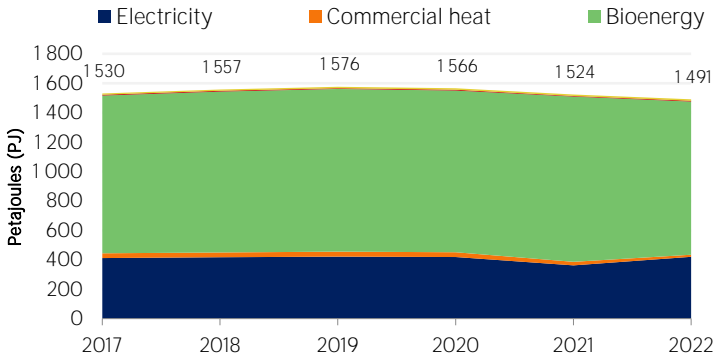


Renewable energy supply in 2022



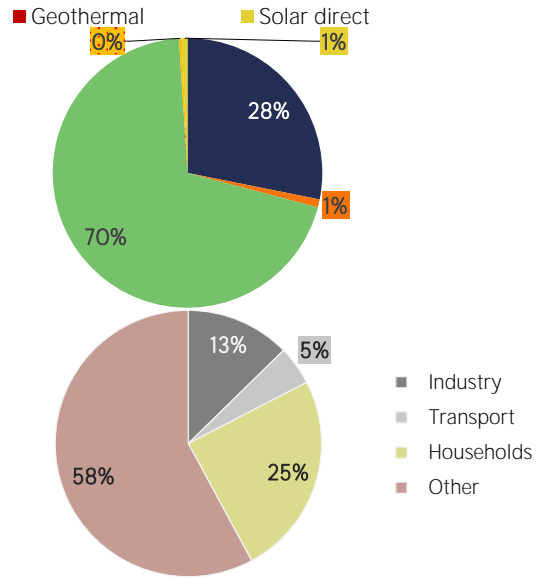
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend



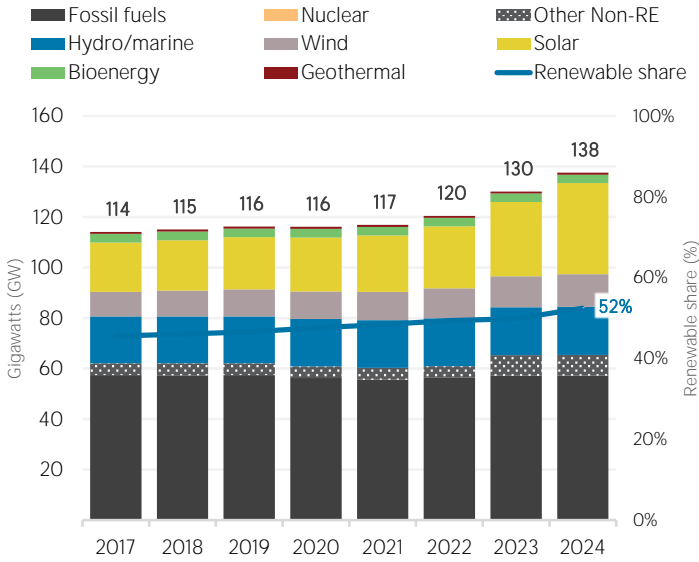
Consumption by sector	2017	2022
Industry (TJ)	200 349	188 845
Transport (TJ)	59 928	70 648
Households (TJ)	389 395	368 194
Other (TJ)	880 360	862 818

Renewable energy consumption in 2022

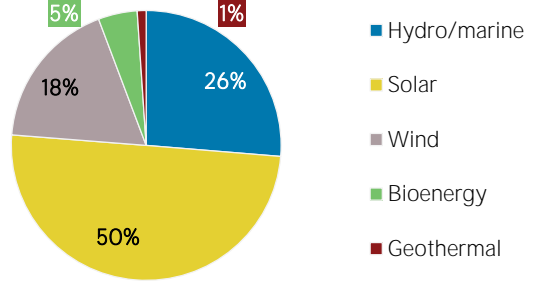


ELECTRICITY CAPACITY

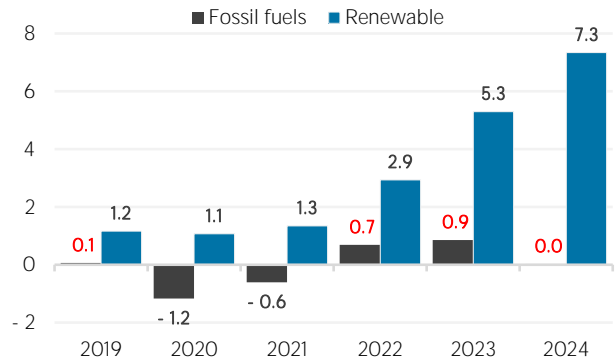
Installed capacity trend



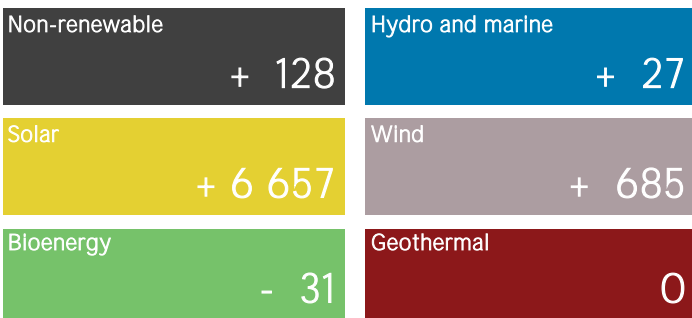
Renewable capacity in 2024



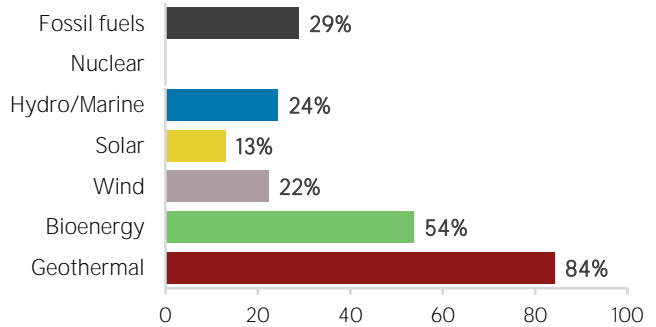
Net capacity change (GW)



Net capacity change in 2024 (MW)

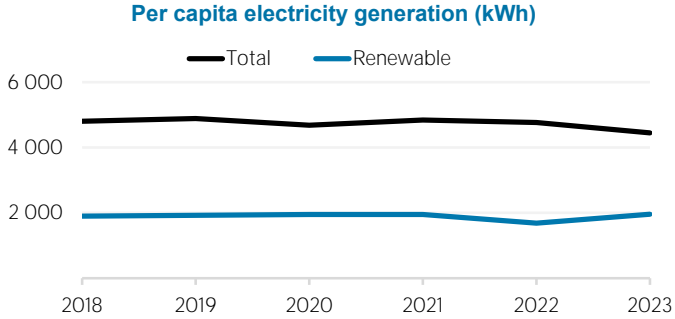
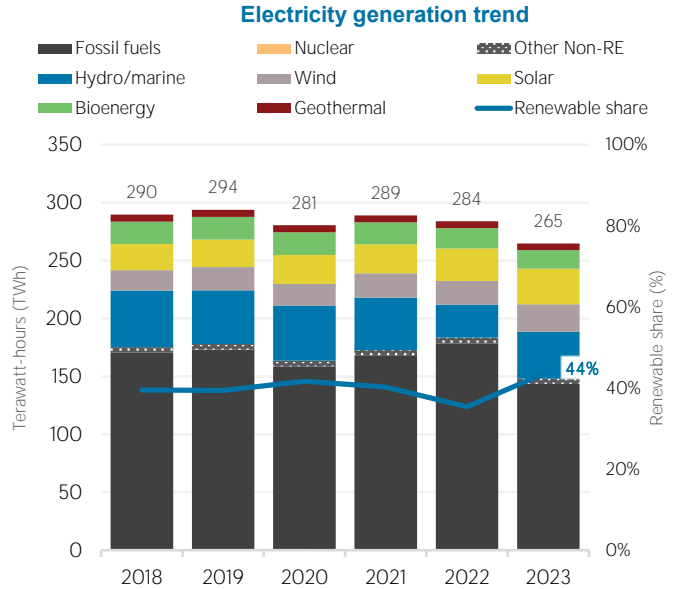


Capacity utilisation in 2023 (%)



ELECTRICITY GENERATION

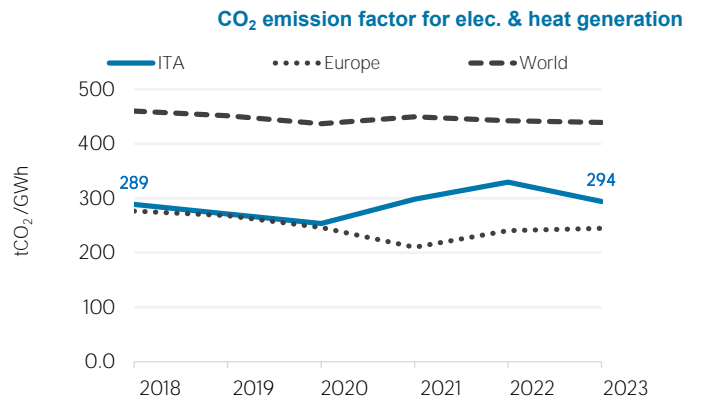
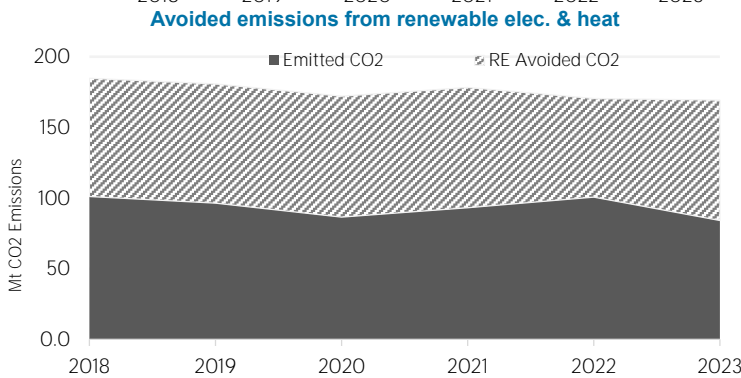
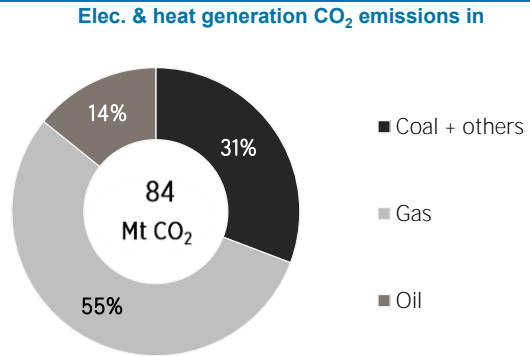
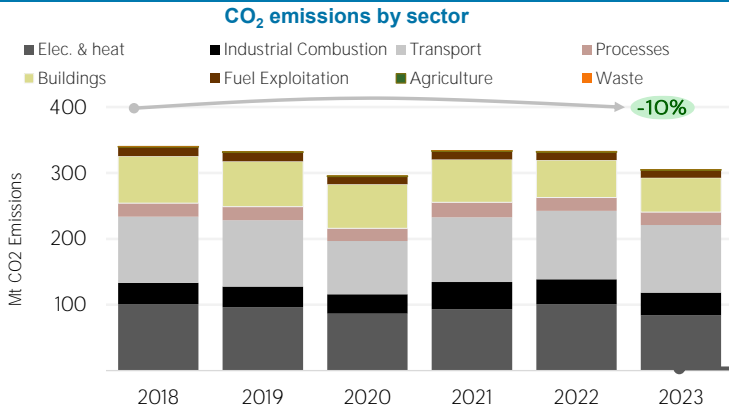
Generation in 2023	GWh	%
Non-renewable	148 138	56
Renewable	116 538	44
Hydro and marine	40 517	15
Solar	30 724	12
Wind	23 587	9
Bioenergy	16 018	6
Geothermal	5 692	2
Total	264 675	100



LATEST POLICIES, PROGRAMMES AND LEGISLATION

- 1 Common European Project for the implementation on the creation of a European hydrogen value chain (Italian arm) **2024**
- 2 Decree n°138 on measures for a common cybersecurity level in the European Union **2024**
- 3 Government spending for domestic battery and hydrogen equipment manufacturers **2024**
- 4 Government support for domestic clean energy technology manufacturers **2024**
- 5 Regulation 2024/573 on fluorinated greenhouse gases **2024**

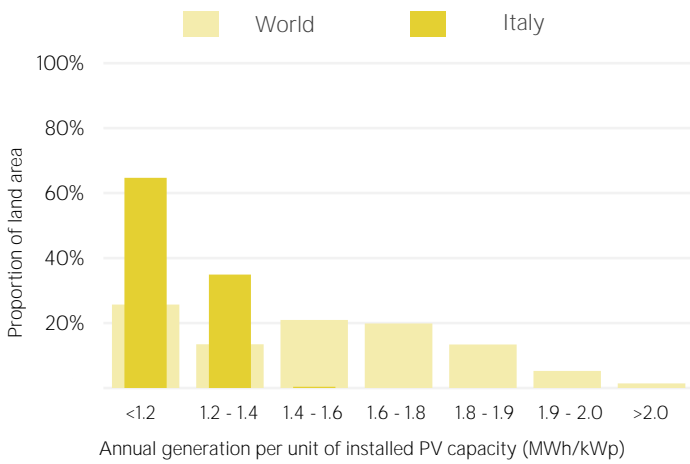
ENERGY AND EMISSIONS



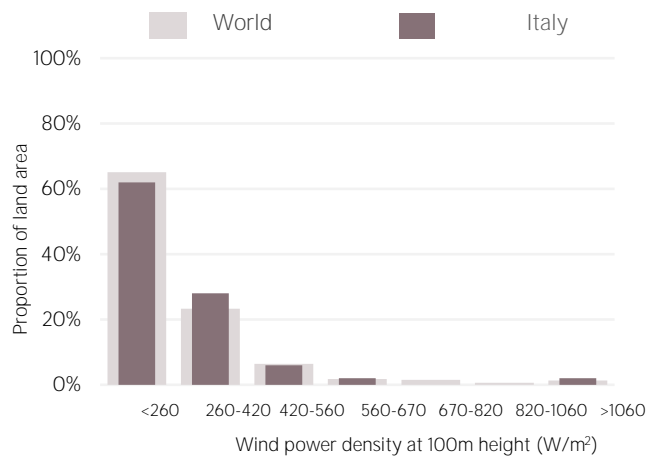
Avoided emissions based on fossil fuel mix used for power

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

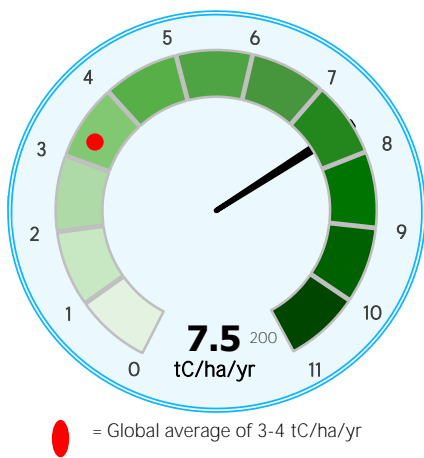
Distribution of solar potential



Distribution of wind potential



Biomass potential: net primary production



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

Sources: IRENA statistics, plus data from the following sources: UN SDG Database (original sources: WHO: World Bank: IEA: IRENA: and UNSD): UN World Population Prospects: UNSD Energy Balances: UN COMTRADE: World Bank World Development Indicators: EDGAR: REN21 Global Status Report: IEA-IRENA Joint Policies and Measures Database: IRENA Global Atlas: and World Bank Global Solar Atlas and Global Wind Atlas.

Additional notes: Capacity per capita and public investments SDGs only apply to developing areas. Energy self-sufficiency has been defined as total primary energy production divided by total primary energy supply. Energy trade includes all commodities in Chapter 27 of the Harmonised System (HS). Capacity utilisation is calculated as annual generation divided by year-end capacity x 8,760h/year. Avoided emissions from renewable power is calculated as renewable generation divided by fossil fuel generation multiplied by reported emissions from the power sector. This assumes that, if renewable power did not exist, fossil fuels would be used in its place to generate the same amount of power and using the same mix of fossil fuels. In countries and years where no fossil fuel generation occurs, an average fossil fuel emission factor has been used to calculate the avoided emissions.

These profiles have been produced to provide an overview of developments in renewable energy in different countries and areas. The IRENA statistics team would welcome comments and feedback on its structure and content, which can be sent to statistics@irena.org.

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