## ENERGY PROFILE

# Romania



# Table Table 45 2.8 40 2.7 35 2.7 30 40 25 26 25 200 20 2.5 20 2.4 10 2.3 5.0 2.3 2.0 2.1 2.1 2.2 2016 2017 2018 2019 2020 2021

COUNTRY INDICATORS AND SDGS



### 7.a.1 Public flows to renewables



### 7.b.1 Per capita renewable capacity



### 11.6.2 Air particulate matter (PM<sub>2.5</sub>)



### TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	1 083 656	1 167 996
Renewable (TJ)	242 450	262 286
Total (TJ)	1 326 106	1 430 282
Renewable share (%)	18	18
Growth in TES	2016-21	2020-21
Non-renewable (%)	+7.8	+6.3







Renewable (%)	+8.2	+0.2
Total (%)	+7.9	+5.1

Primary energy trade	2016	2021
Imports (TJ)	558 890	680 722
Exports (TJ)	261 058	221 050
Net trade (TJ)	- 297 832	- 459 672
Imports (% of supply)	42	48
Exports (% of production)	25	23
Energy self-sufficiency (%)	78	67

29%

Renewable energy supply in 2021









### ELECTRICITY CAPACITY



### Net capacity change in 2023 (MW)



# Hydro and marine

### Renewable capacity in 2023



### Net capacity change (GW)



### Renewable energy consumption in 2021







### ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	32 394	58
Renewable	23 609	42
Hydro and marine	13 977	25
Solar	1 988	4
Wind	6 997	12
Bioenergy	647	1
Geothermal	0	0
Total	56 003	100

### Electricity generation trend



### Per capita electricity generation (kWh)



### LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 Subsidy for household energy bills	2023
2 EUR 1.5 billion for energy-intensive companies	2022
3 EUR 148 million for green hydrogen projects	2022
4 EUR 424 million for the Romanian TSO Transelectrica	2022
5 EUR 457 million for wind and solar	2022





Avoided emissions based on tossil tuel mix used for power

Mt CO2 Emissions

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

### RENEWABLE RESOURCE POTENTIAL

### World Romania 100% 80% Proportion of land area 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 solar 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/m<sup>2</sup>) 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

### Distribution of wind potential





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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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