ENERGY PROFILE

Serbia

International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS









7.b.1 Per capita renewable capacity



11.6.2 Air particulate matter ($PM_{2.5}$)



TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	551 300	551 155
Renewable (TJ)	76 095	107 320
Total (TJ)	627 395	658 475
Renewable share (%)	12	16
Growth in TES	2016-21	2020-21
Non-renewable (%)	-0.0	-0.3





Renewable (%)	+41.0	-4.9
Total (%)	+5.0	-1.1

Primary energy trade	2016	2021
Imports (TJ)	247 157	298 590
Exports (TJ)	59 677	66 856
Net trade (TJ)	- 187 480	- 231 734
Imports (% of supply)	39	45
Exports (% of production)	14	16
Energy self-sufficiency (%)	70	63

Renewable energy supply in 2021



RENEWABLE ENERGY CONSUMPTION (TFEC)







ELECTRICITY CAPACITY



Net capacity change in 2023 (MW)

Hydro and marine

Installed capacity trend

Renewable capacity in 2023



Net capacity change (GW)





Capacity utilisation in 2022 (%)



ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	25 645	72
Renewable	10 010	28
Hydro and marine	8 649	24
Solar	160	0
Wind	949	3
Bioenergy	252	1
Geothermal	0	0
Total	35 654	100

Per capita electricity generation (kWh)

2019

—Total

2018

2017

Mt CO2 Emissions

2018

2019

2020

2021

6

4

2

2017

-----Renewable

2020

2021

Fossil fuels Nuclear **Contraction** Other Non-RE Hydro/marine Wind Solar Bioenergy Geothermal Renewable share 45 100% 38 38 38 40 37 37 36 80% 35 Renewable share (%) 30 25 20 15 28%

20%

0%

2022

Electricity generation trend

LATEST POLICIES, PROGRAMMES AND LEGISLATION

2022

Gigawatt-hours (GWh)

10

5

0

2017

2018

2019

2020

2021

1 Decree on Amount of Special Fee for Incentives in 2013 (RS Official Gazette, No. 8/13)	2013
2 Decree on Criteria and Procedure for Qualification for Privileged Electricity Producer Status (RS Official Gazette, No. 8/13)	2013
3 Decree on Incentive Measures for Privileged Energy Producers (Eco-scheme)	2013
4 Decree on Method of Calculation and Allocation of Funding Raised from Incentive Fees for Privileged Electricity Producers (RS Official Gazette, No. 8/13)	2013
5 National Renewable Energy Action Plan (NREAP)	2013

ENERGY AND EMISSIONS CO₂ emissions by sector Elec. & heat generation CO₂ emissions in ■ Industrial Combustion ■ Transport Elec. & heat Processes Buildings Fuel Exploitation Agriculture Waste **(**0% 1 ■ Coal + others 0.8 Mt CO2 Emissions 0.0 0.6 Gas Mt CO₂ 0.4 ■ Oil 0.2



2022

Avoided emissions based on tossil tuel mix used for power

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

RENEWABLE RESOURCE 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

Distribution of wind potential



International Renewable Energy Agency

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

Last updated on: 31 July, 2024