ENERGY PROFILE

Iran (Islamic Republic of)

COUNTRY INDICATORS AND SDGS





Total Energy Supply (TES)





International Renewable Energy Agency



11.6.2 Air particulate matter (PM_{2.5})



TOTAL ENERGY SUPPLY (TES)

2021

2016







Non-renewable (TJ)	10 122 450	12 182 772
Renewable (TJ)	139 110	137 318
Total (TJ)	10 261 560	12 320 090
Renewable share (%)	1	1
Growth in TES	2016-21	2020-21
Non-renewable (%)	+20.4	+11.5
Renewable (%)	-1.3	-0.1
Total (%)	+20.1	+11.3

Primary energy trade	2016	2021
Imports (TJ)	393 176	255 250
Exports (TJ)	6 594 443	3 988 232
Net trade (TJ)	6 201 267	3 732 982
Imports (% of supply)	4	2
Exports (% of production)	40	25
Energy self-sufficiency (%)	160	131

RENEWABLE ENERGY CONSUMPTION (TFEC)





ELECTRICITY CAPACITY



Net capacity change in 2023 (MW)

Non-renewable		Hydro and marine	
	+ 3 151		+ 176
Solar		Wind	
	+ 56		+ 23
Bioenergy		Geothermal	
	0		0









Renewable energy consumption in 2021

ELECTRICITY GENERATION



LATEST POLICIES, PROGRAMMES AND LEGISLATION

2016

1 Renewable portfolio standards: Law on the Sixth Five-Year Economic, Cultural, and Social Development Plan for 1396-1400 (2016-2021)

2 Supplying 20% of electricity consumed by ministries, institutes, governmental sectors and public non-governmental entities from renewable sources in Iran	2016
3 Payment of benefit of conserving fossil fuels	2015
4 Renewable Electricity Compliance	2015
5 Liquid Fuel Exchange Purchase	2013



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.

Blomass: 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; REN2I 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



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