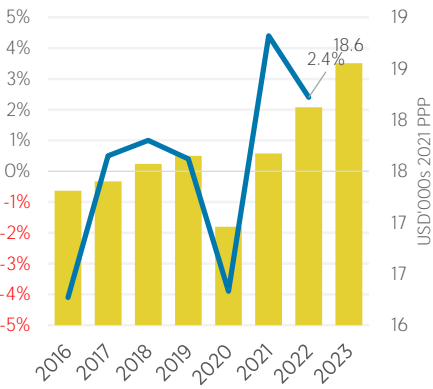
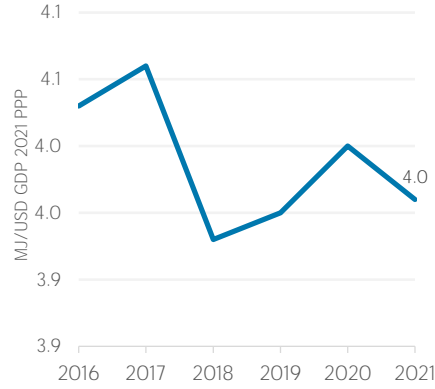


COUNTRY INDICATORS AND SDGS

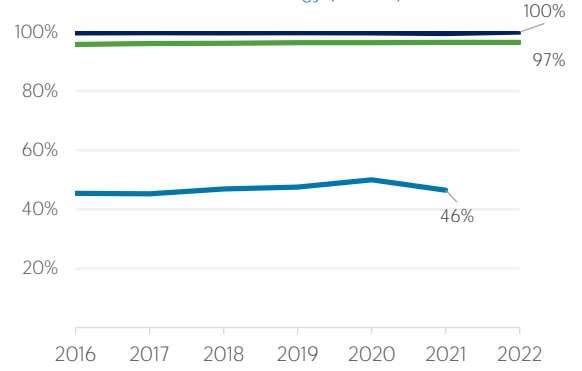
GDP per capita 8.1.1 Real GDP growth rate



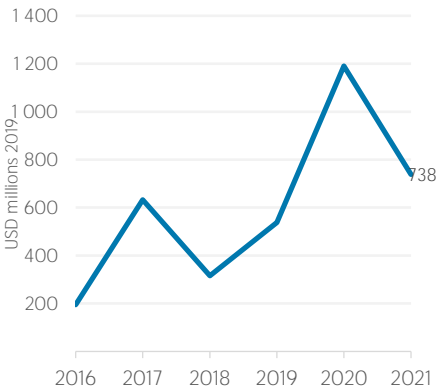
7.3.1 Energy intensity



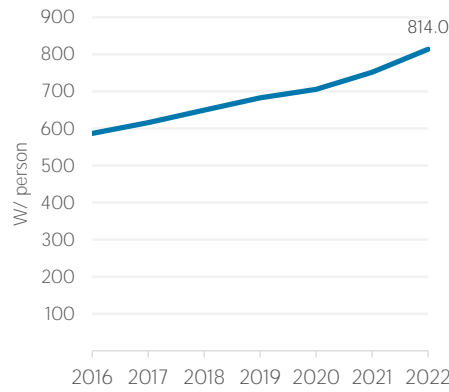
7.1.1 Access to electricity (% population)
7.1.2 Access to clean cooking (% population)
7.2.1 Renewable energy (% TFE)



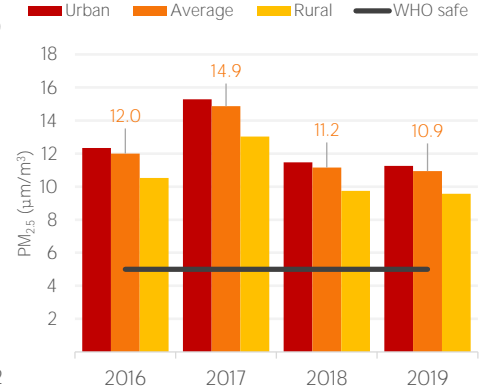
7.a.1 Public flows to renewables



7.b.1 Per capita renewable capacity



11.6.2 Air particulate matter (PM_{2.5})



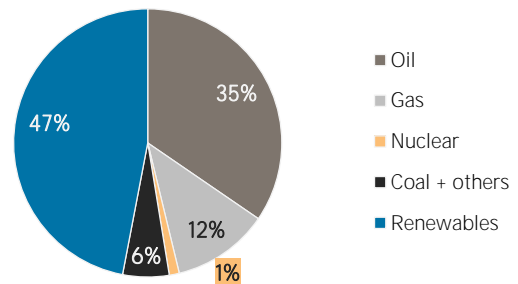
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	6 750 926	6 991 186
Renewable (TJ)	5 251 956	6 196 811
Total (TJ)	12 002 882	13 187 997
Renewable share (%)	44	47

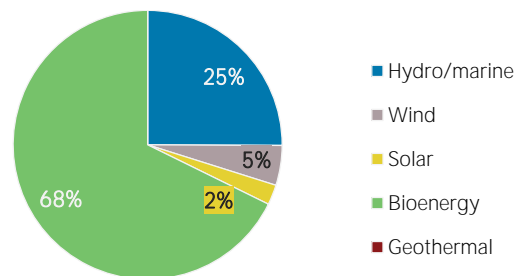
Growth in TES	2016-21	2020-21
Non-renewable (%)	+3.6	+13.4
Renewable (%)	+18.0	+8.4
Total (%)	+9.9	+11.0

Primary energy trade	2016	2021
Imports (TJ)	2 444 333	2 807 854
Exports (TJ)	2 099 694	3 234 726
Net trade (TJ)	- 344 639	426 872
Imports (% of supply)	20	21
Exports (% of production)	18	23
Energy self-sufficiency (%)	99	105

Total energy supply in 2021

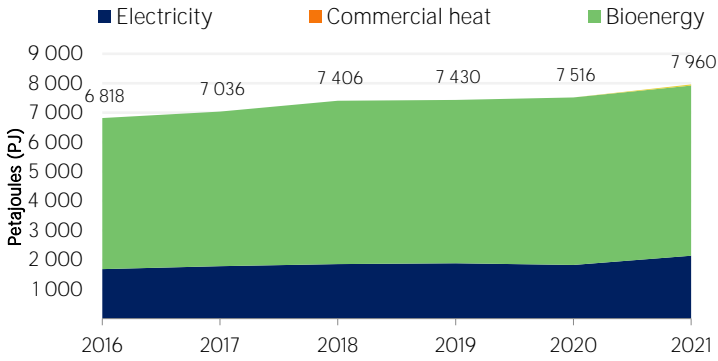


Renewable energy supply in 2021



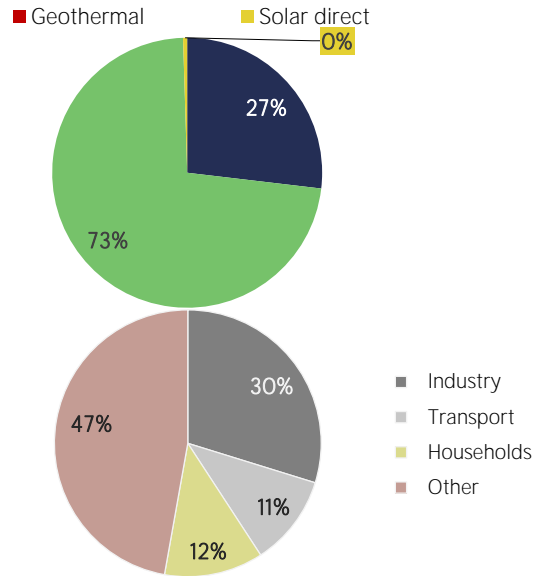
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend



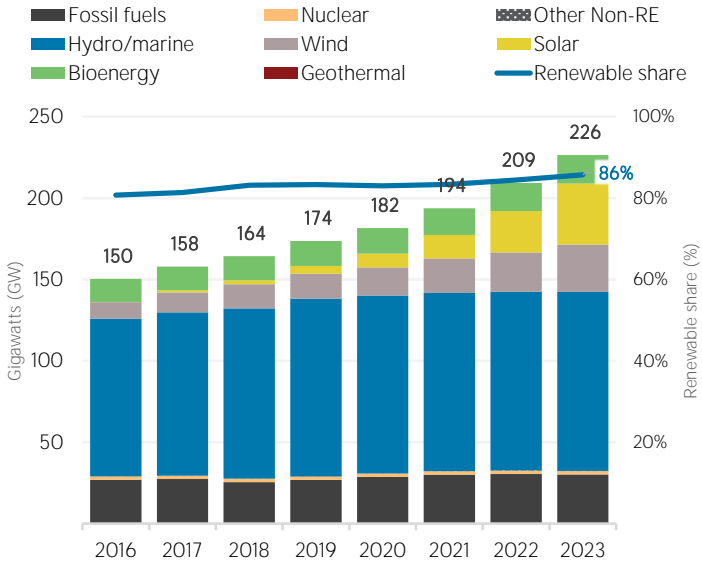
Consumption by sector	2016	2021
Industry (TJ)	2 015 827	2 370 684
Transport (TJ)	680 005	876 919
Households (TJ)	770 135	955 455
Other (TJ)	3 351 583	3 756 717

Renewable energy consumption in 2021

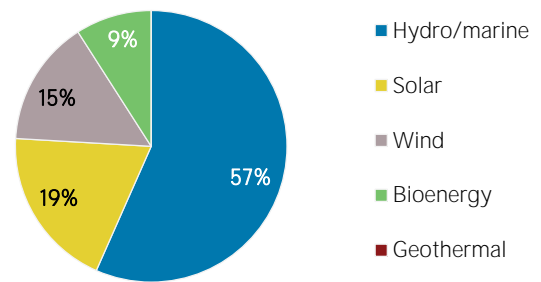


ELECTRICITY CAPACITY

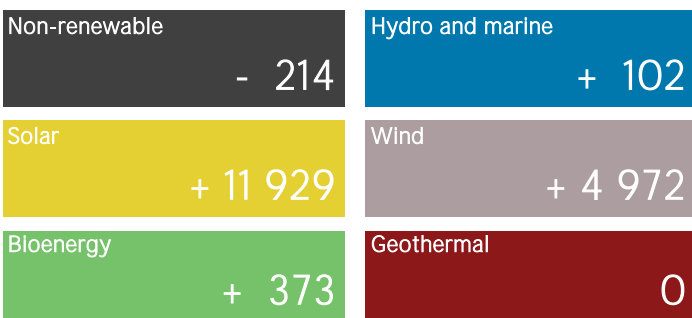
Installed capacity trend



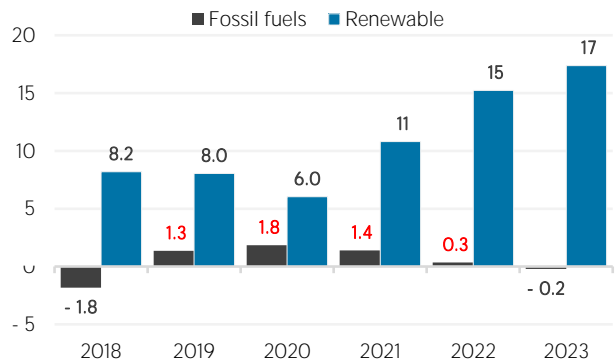
Renewable capacity in 2023



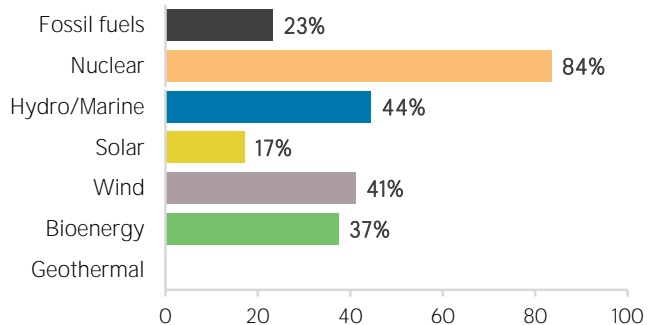
Net capacity change in 2023 (MW)



Net capacity change (GW)

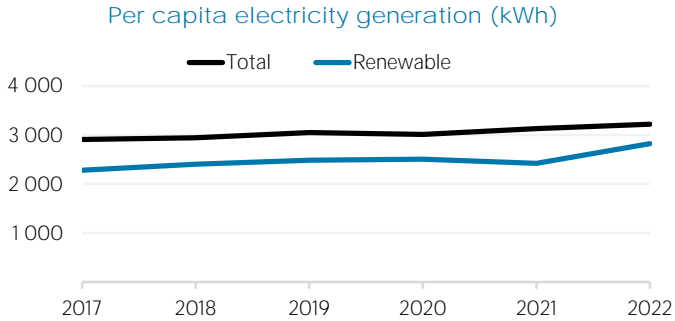


Capacity utilisation in 2022 (%)

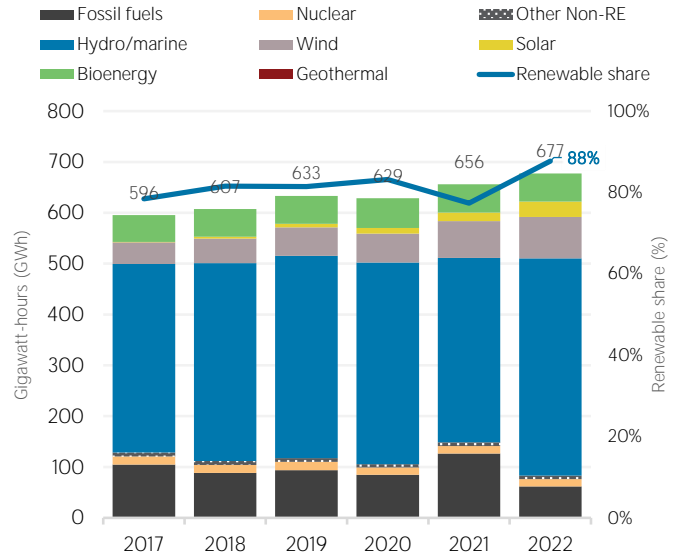


ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	83 268	12
Renewable	594 028	88
Hydro and marine	427 114	63
Solar	30 138	4
Wind	81 632	12
Bioenergy	55 145	8
Geothermal	0	0
Total	677 296	100



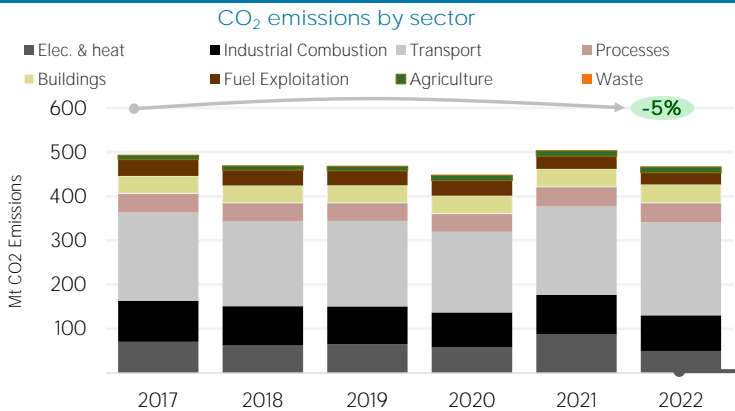
Electricity generation trend



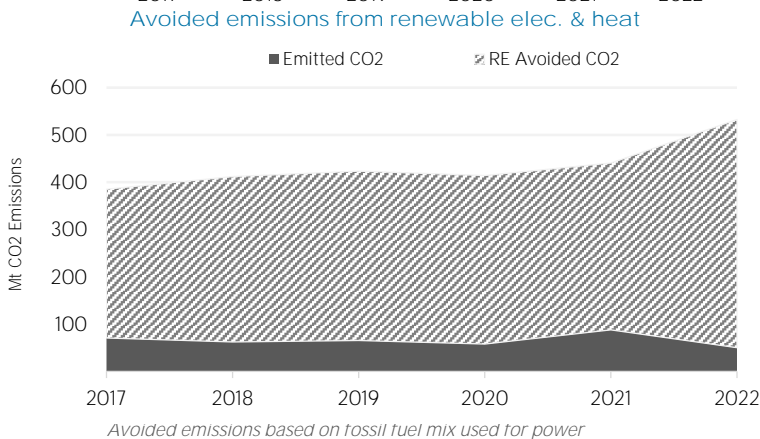
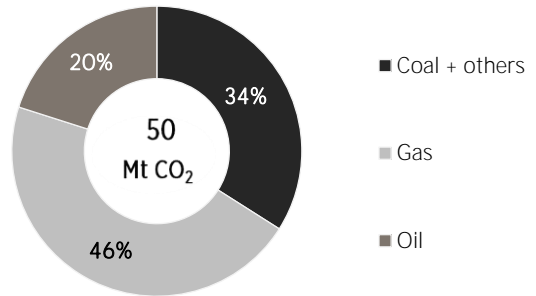
LATEST POLICIES, PROGRAMMES AND LEGISLATION

- 1 BNDES financing to new wind farms 2023 2023
- 2 National Bank for Economic and Social Development (BNDES) 2023 solar support 2023
- 3 National Bank for Economic and Social Development (BNDES) wind and solar projects support 2023
- 4 Support for biogas production in Goiás 2023
- 5 Decree No. 11.108. Establishes the Brazilian Mineral Policy and the Mineral Policy National Council 2022

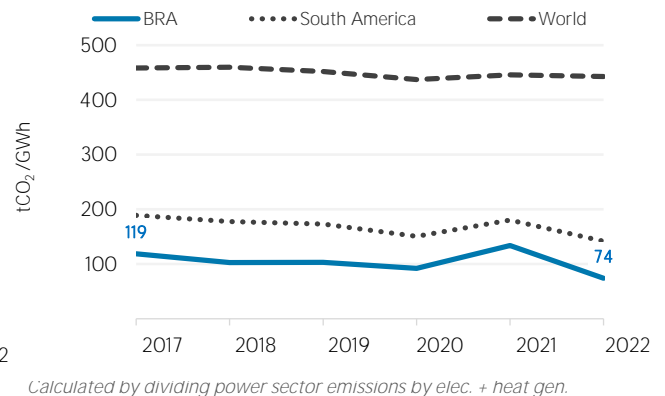
ENERGY AND EMISSIONS



Elec. & heat generation CO₂ emissions in



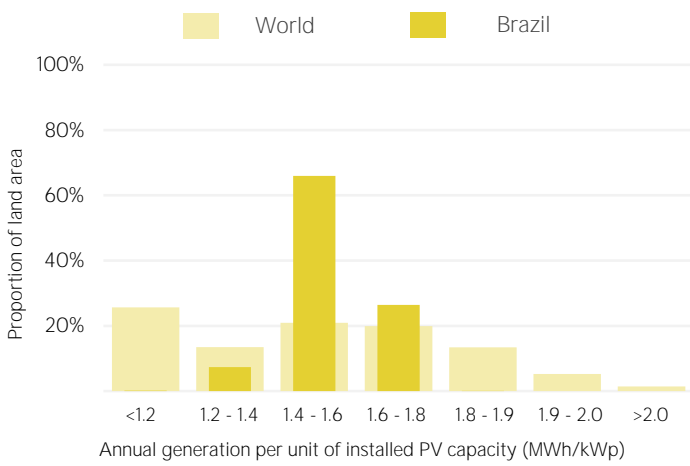
CO₂ emission factor for elec. & heat generation



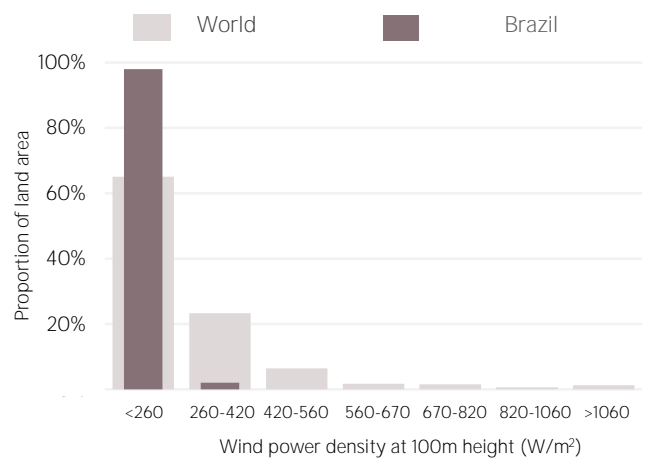
Avoided emissions based on fossil fuel mix used for power

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

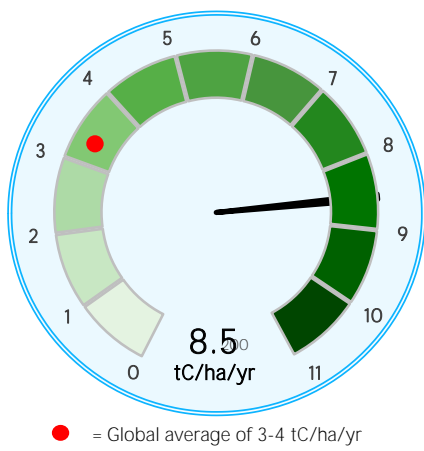
Distribution of solar potential



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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