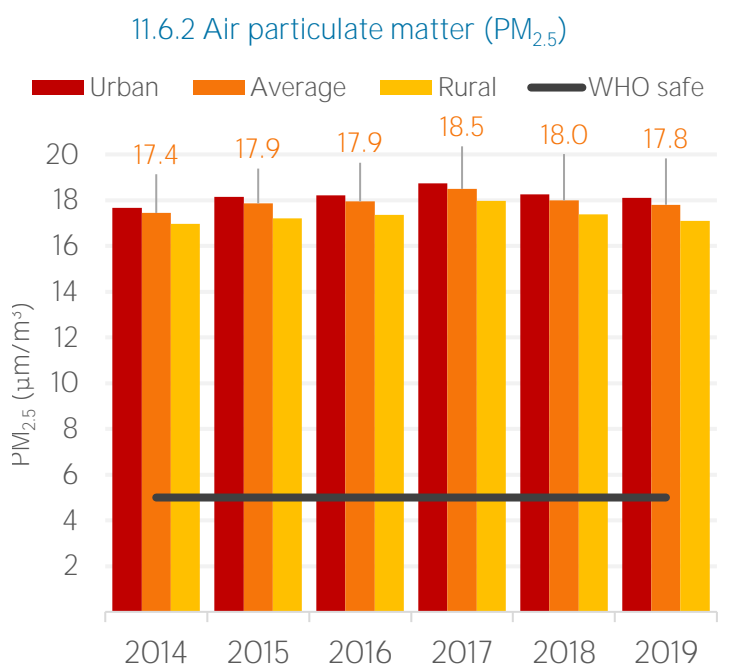
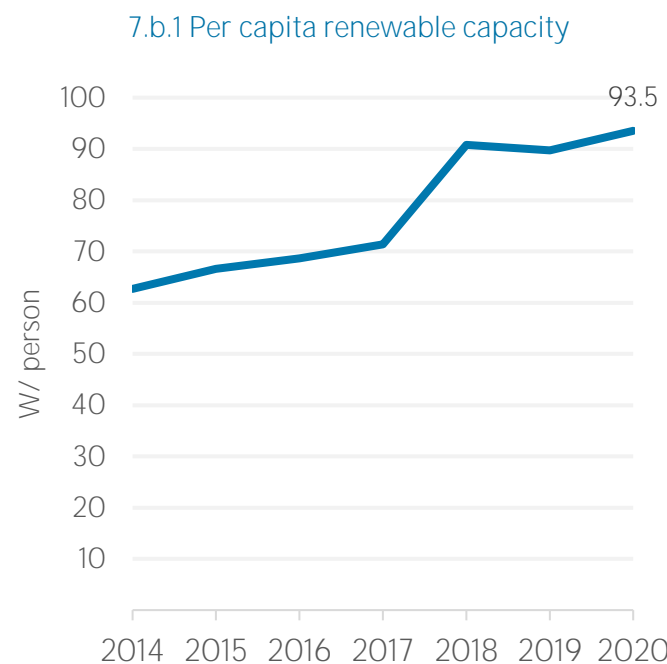
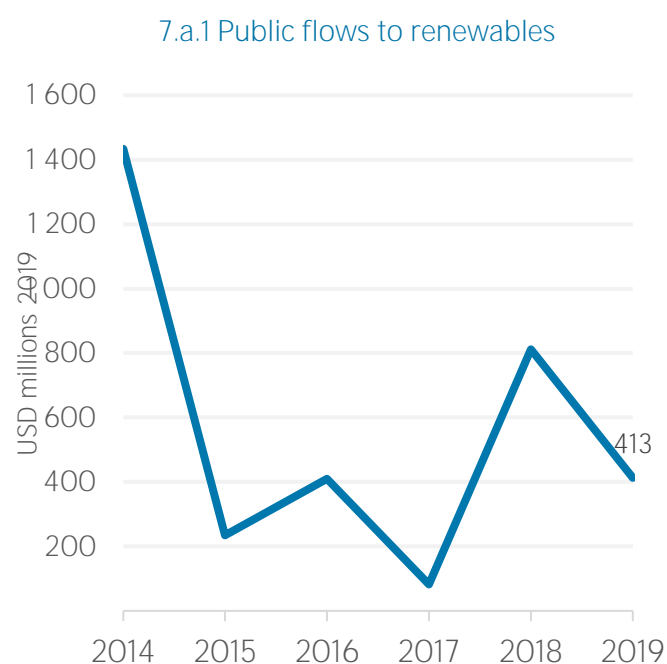
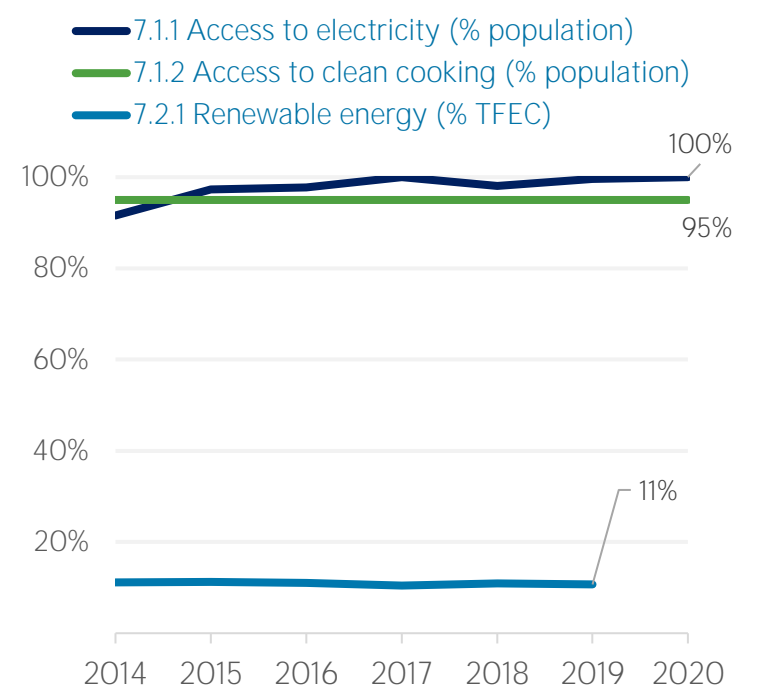
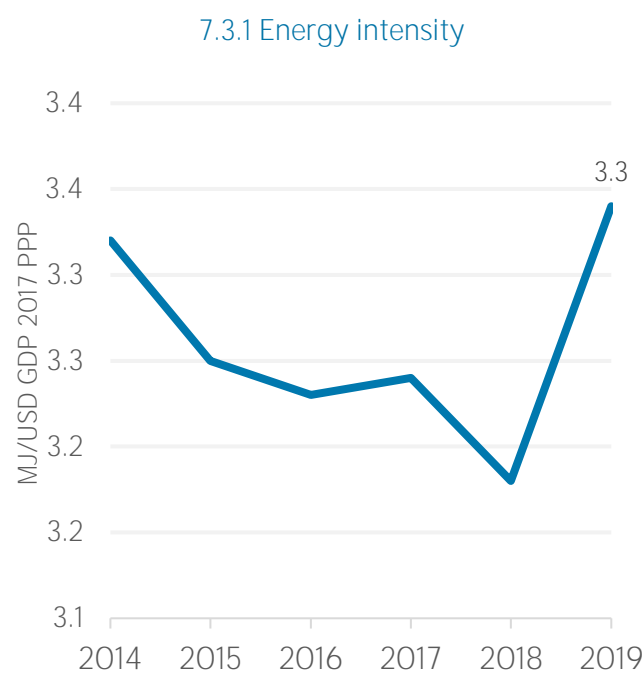
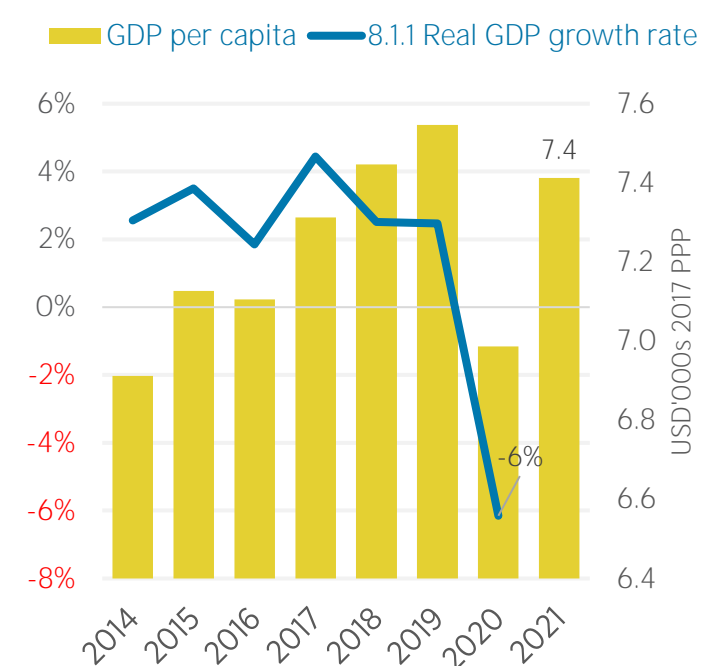


COUNTRY INDICATORS AND SDGS



TOTAL ENERGY SUPPLY (TES)

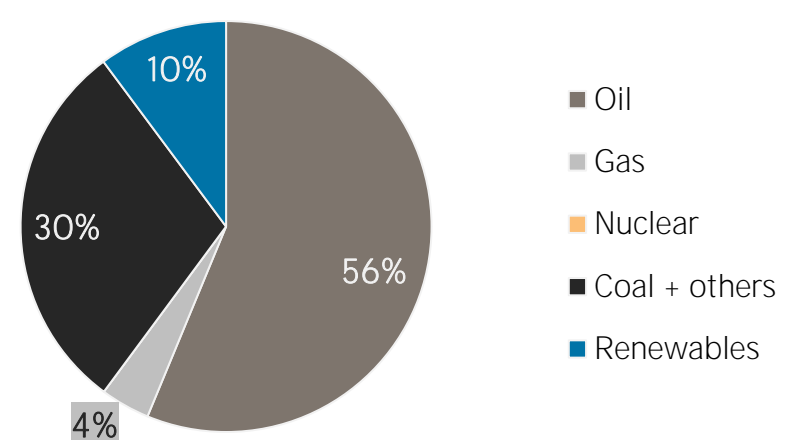
Total Energy Supply (TES)	2014	2019
Non-renewable (TJ)	724 568	845 312
Renewable (TJ)	58 849	95 772
Total (TJ)	783 417	941 084
Renewable share (%)	8	10

Growth in TES	2014-19	2018-19
Non-renewable (%)	+16.7	+7.8
Renewable (%)	+62.7	-5.4
Total (%)	+20.1	+6.3

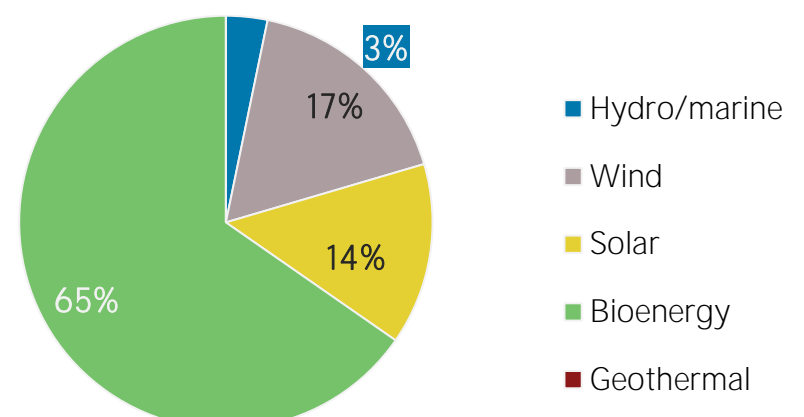
Primary energy trade	2014	2019
Imports (TJ)	867 941	866 642
Exports (TJ)	50 514	5 232
Net trade (TJ)	- 817 427	- 861 410

Imports (% of supply)	111	92
Exports (% of production)	81	5
Energy self-sufficiency (%)	8	11

Total energy supply in 2019

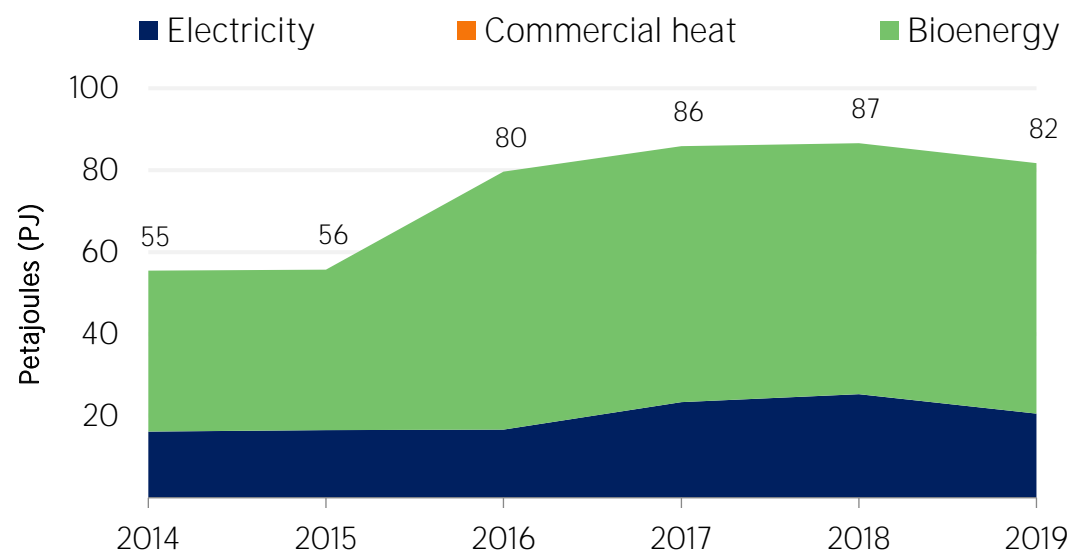


Renewable energy supply in 2019

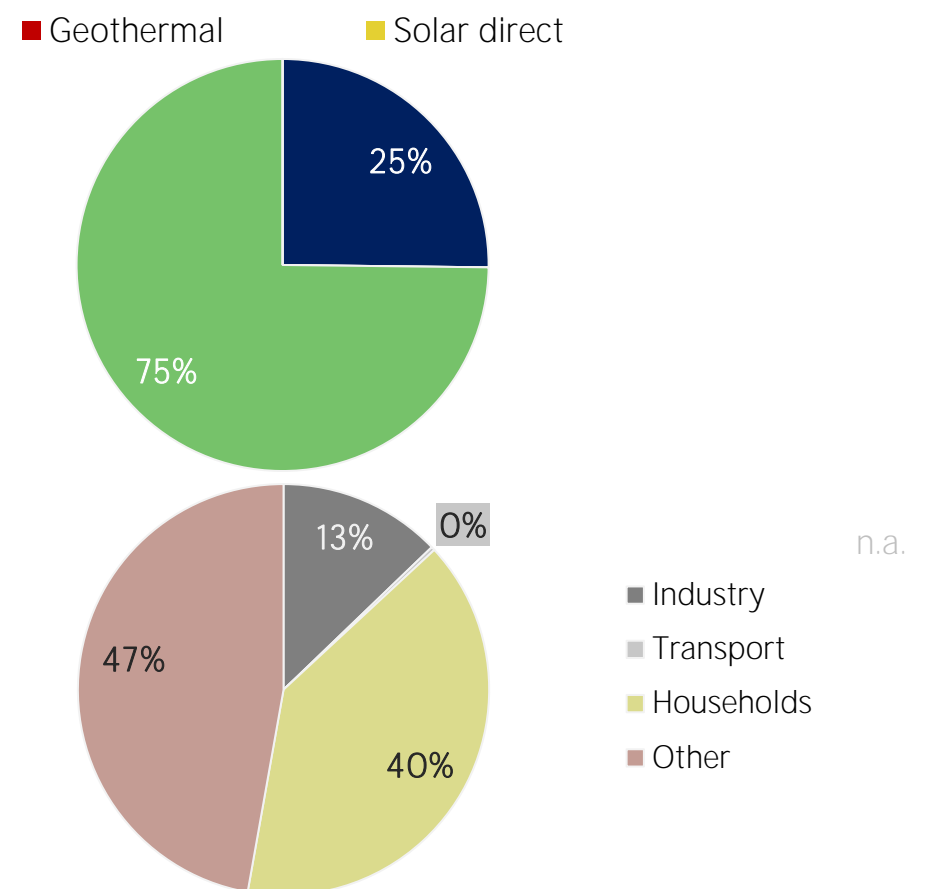


RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend



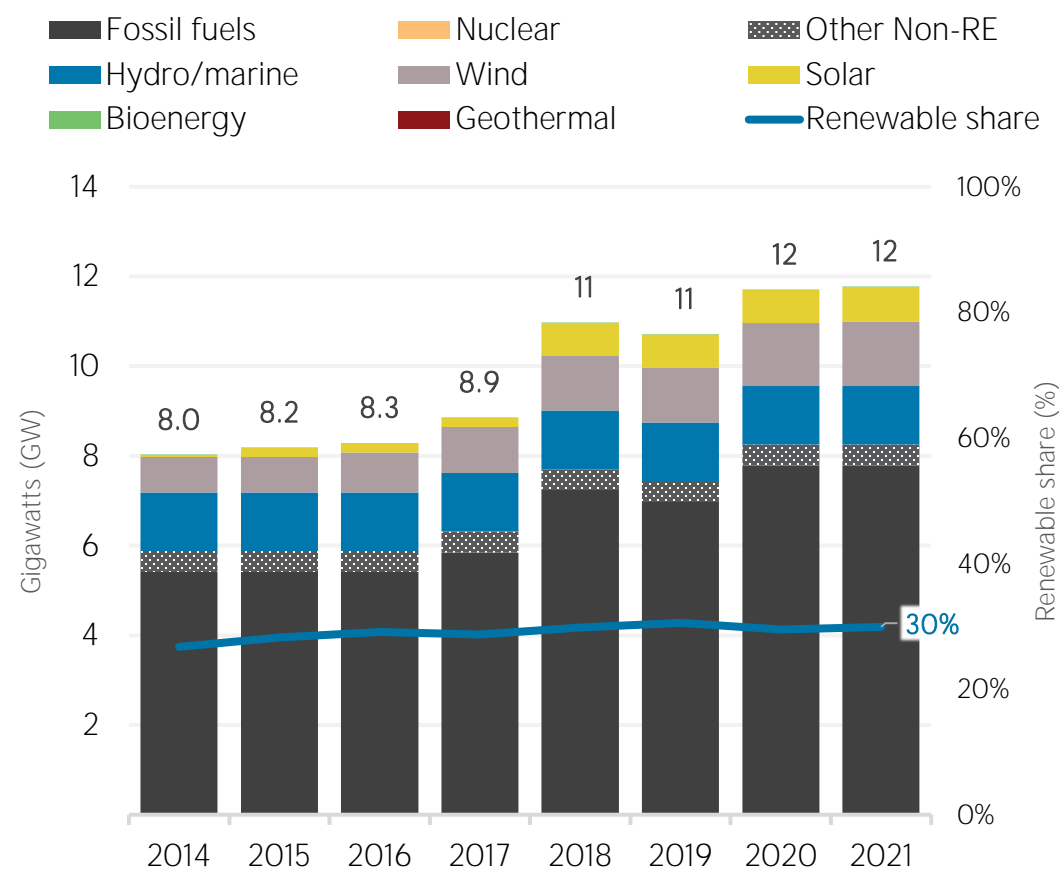
Renewable energy consumption in 2019



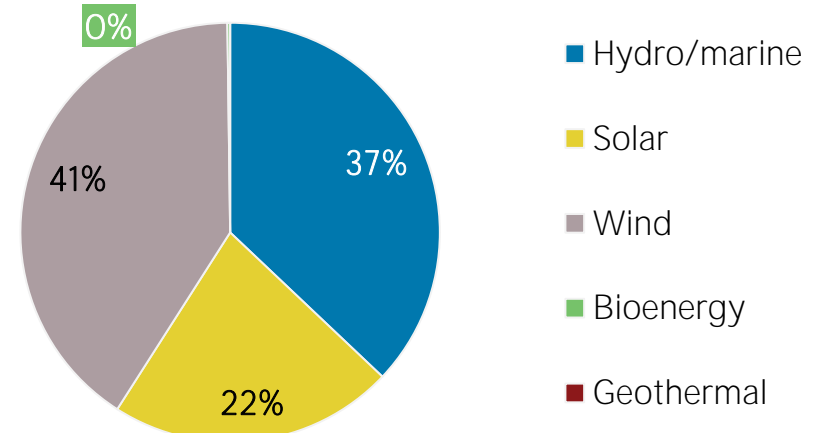
Consumption by sector	2014	2019
Industry (TJ)	7 497	10 475
Transport (TJ)	184	237
Households (TJ)	23 313	32 456
Other (TJ)	24 411	38 594

ELECTRICITY CAPACITY

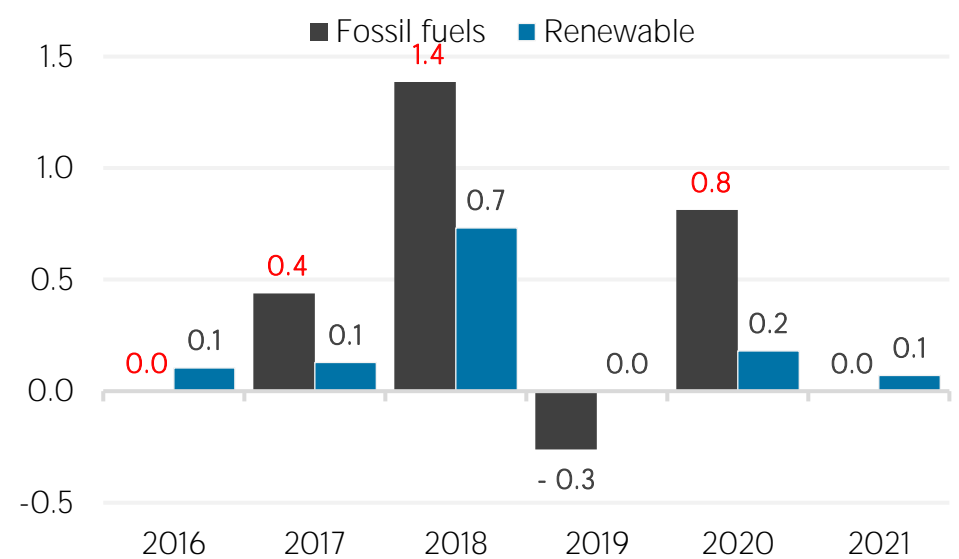
Installed capacity trend



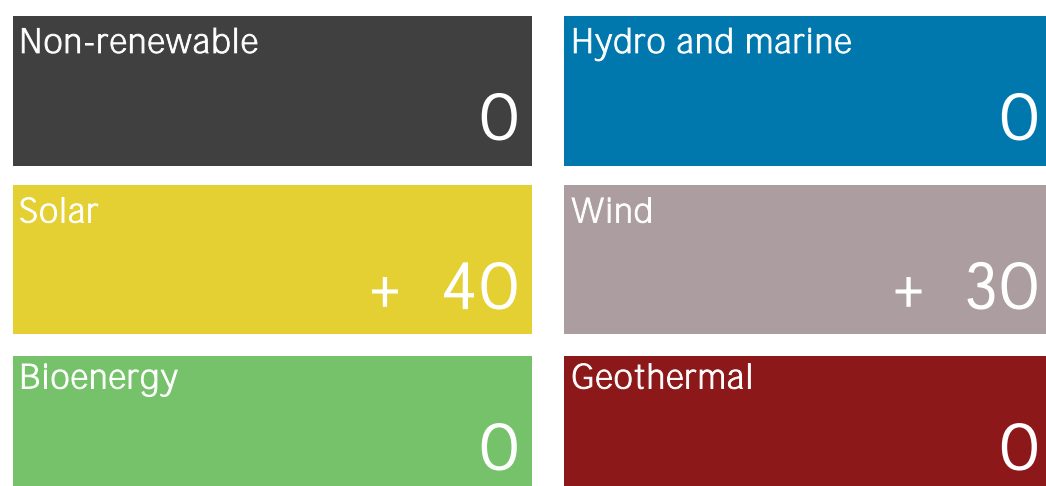
Renewable capacity in 2021



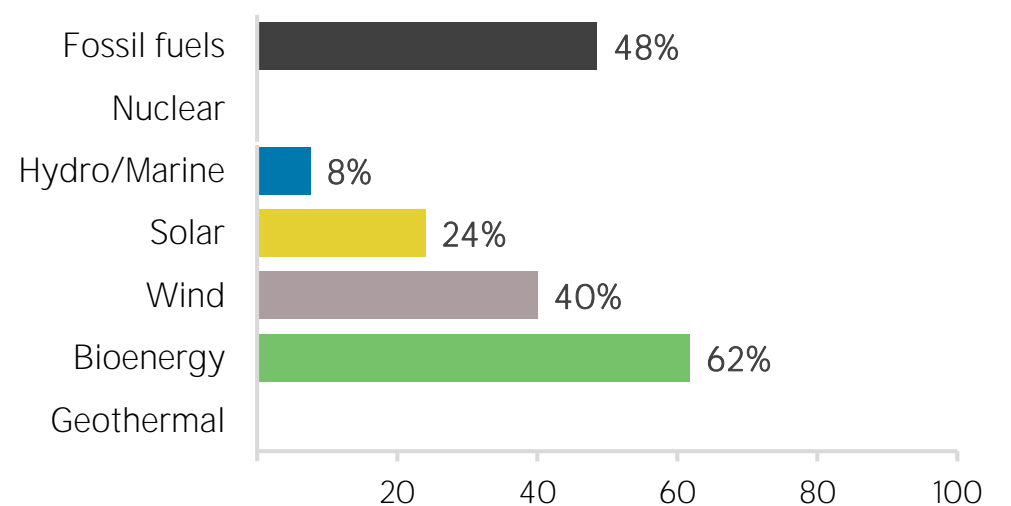
Net capacity change (GW)



Net capacity change in 2021 (MW)

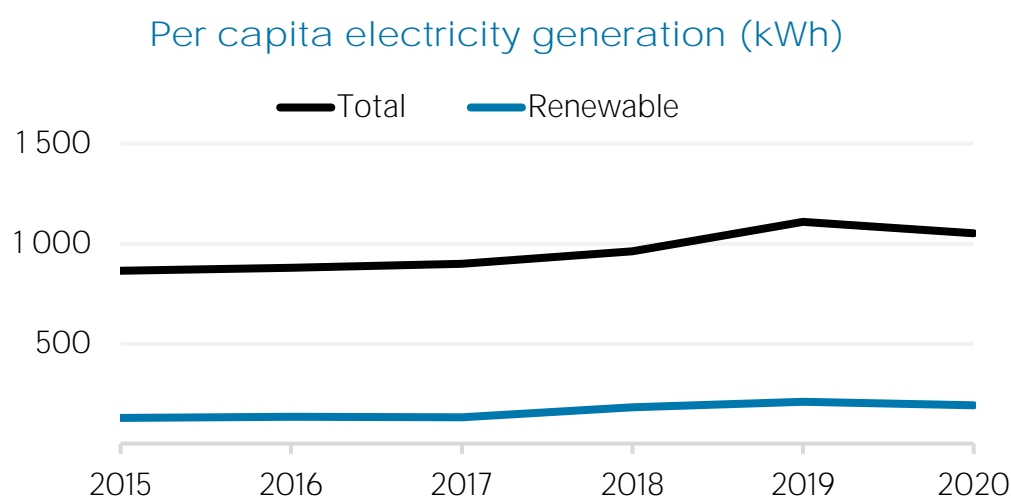


Capacity utilisation in 2020 (%)

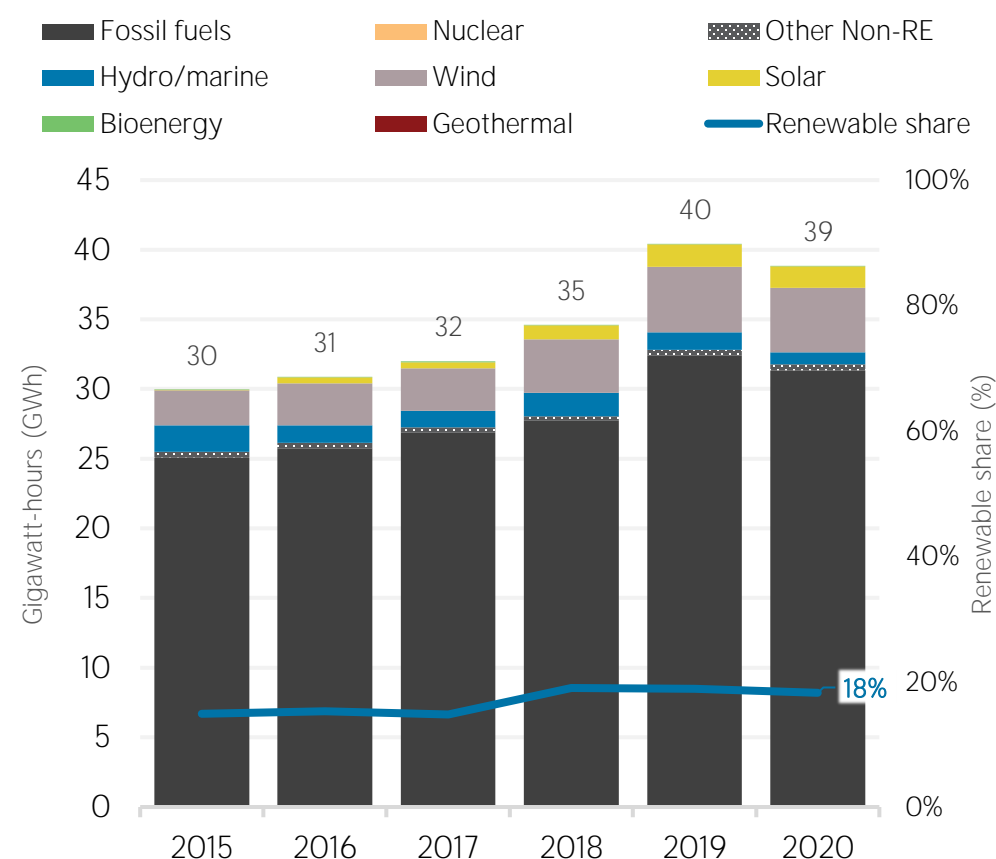


ELECTRICITY GENERATION

Generation in 2020	GWh	%
Non-renewable	31 775	82
Renewable	7 062	18
Hydro and marine	868	2
Solar	1 547	4
Wind	4 607	12
Bioenergy	40	0
Geothermal	0	0
Total	38 837	100



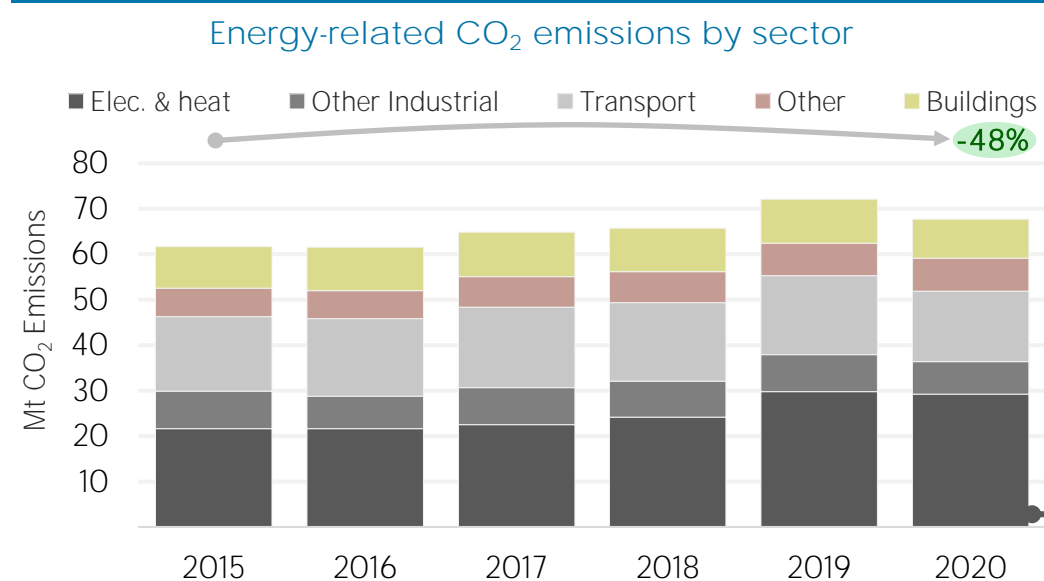
Electricity generation trend



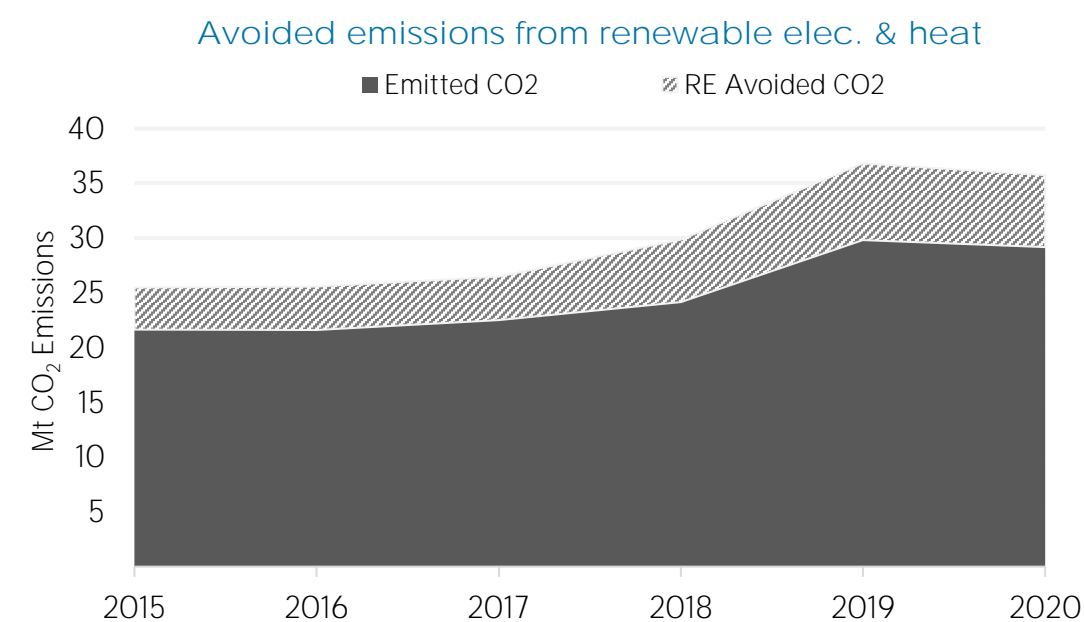
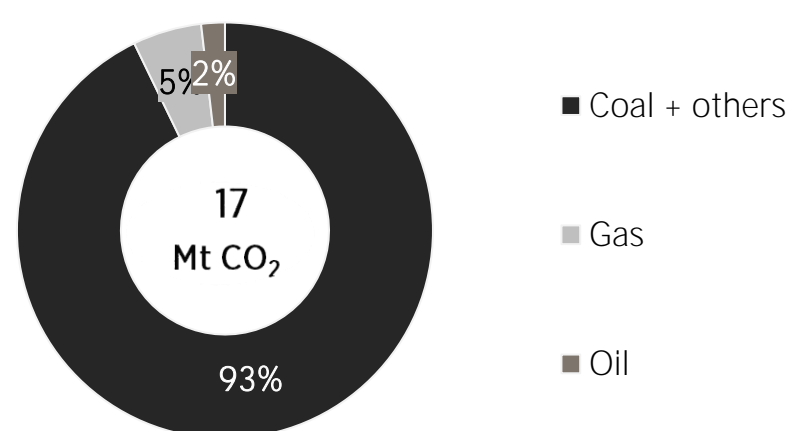
LATEST POLICIES, PROGRAMMES AND LEGISLATION

- Morocco and Portugal agreement on green hydrogen development 2021
- Tatwir Green Growth Program 2021
- Industrial Recovery Plan 2021-2023 2020
- Decree n. 2-17-746 on Mandatory energy audits and energy audit organisations 2019
- Decree n. 2-18-165 on mandatory energy audits 2019

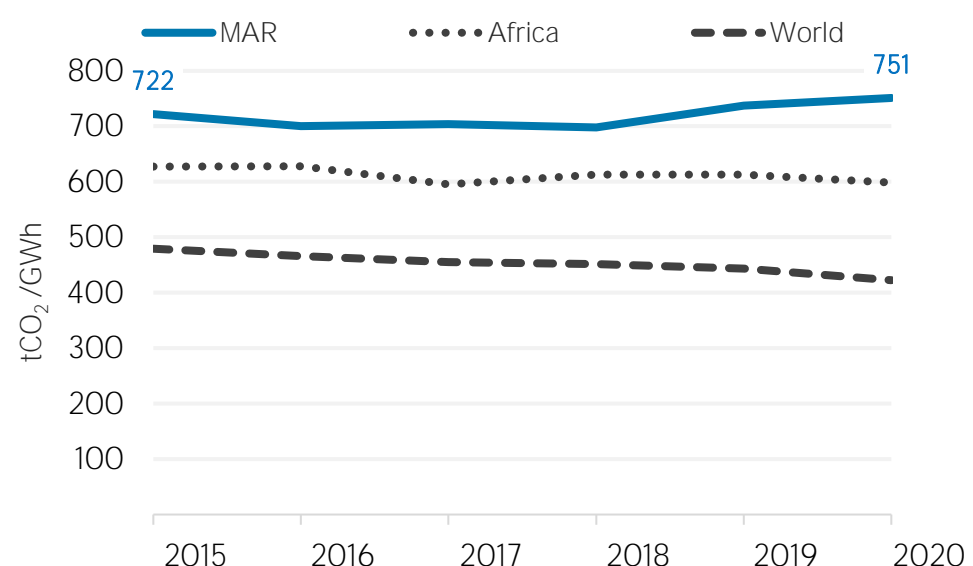
ENERGY AND EMISSIONS



Elec. & heat generation CO₂ emissions in



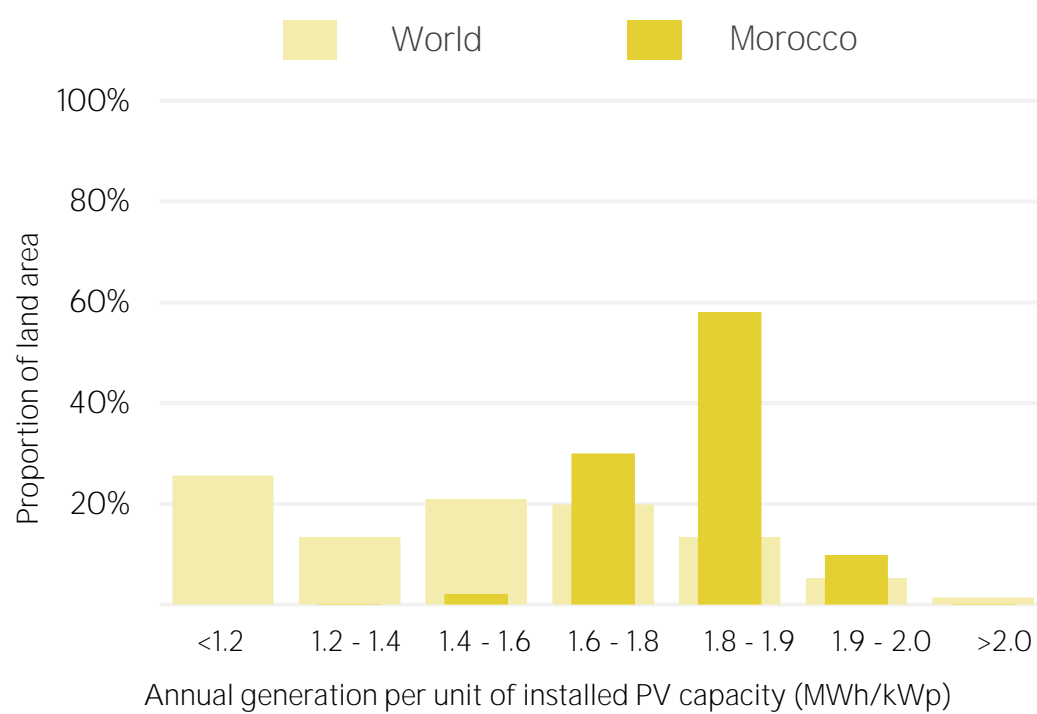
CO₂ emission factor for elec. & heat generation



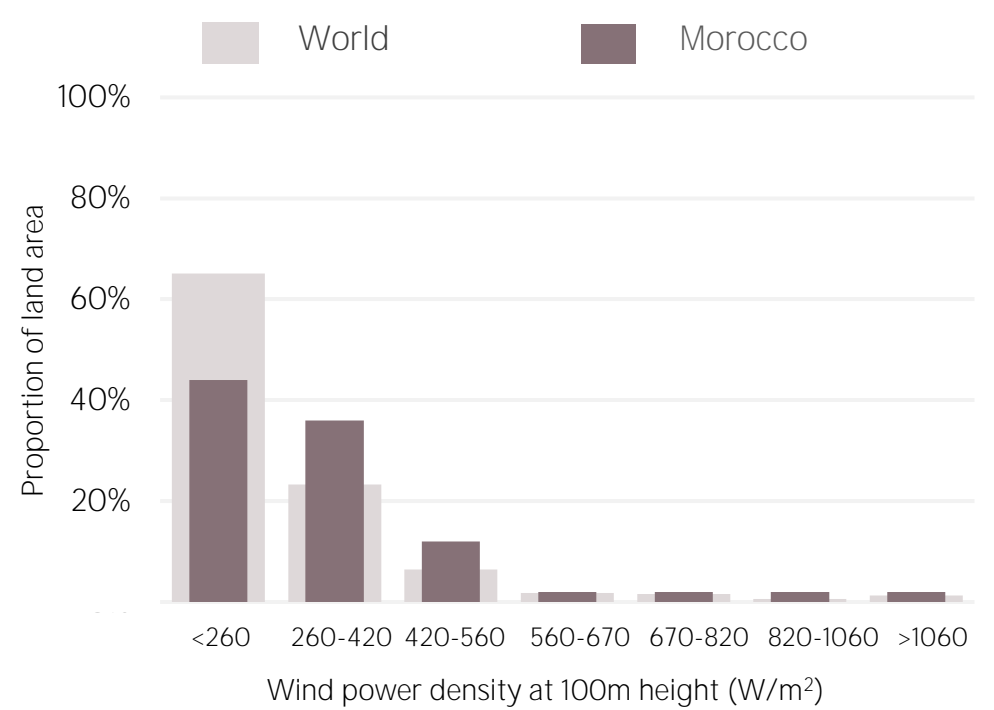
Avoided emissions based on fossil fuel mix used for power

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

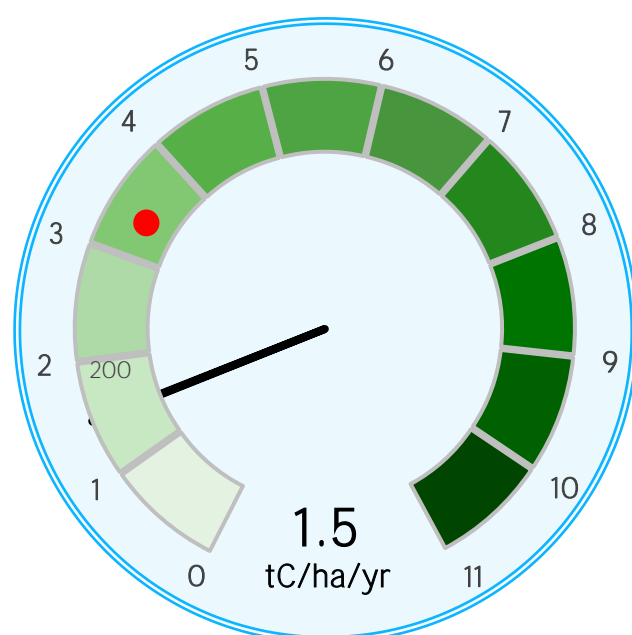
Distribution of solar potential



Distribution of wind potential



Biomass potential: net primary production



● = Global average of 3-4 tC/ha/yr

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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