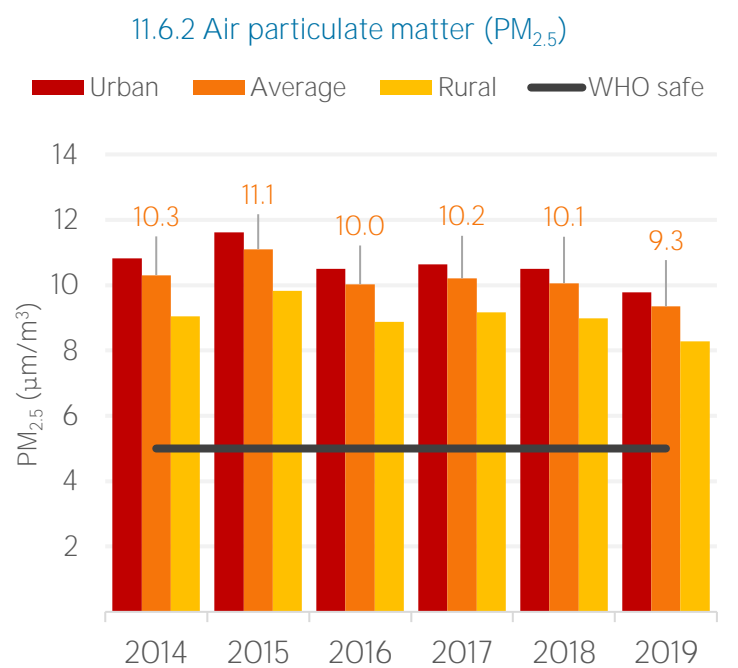
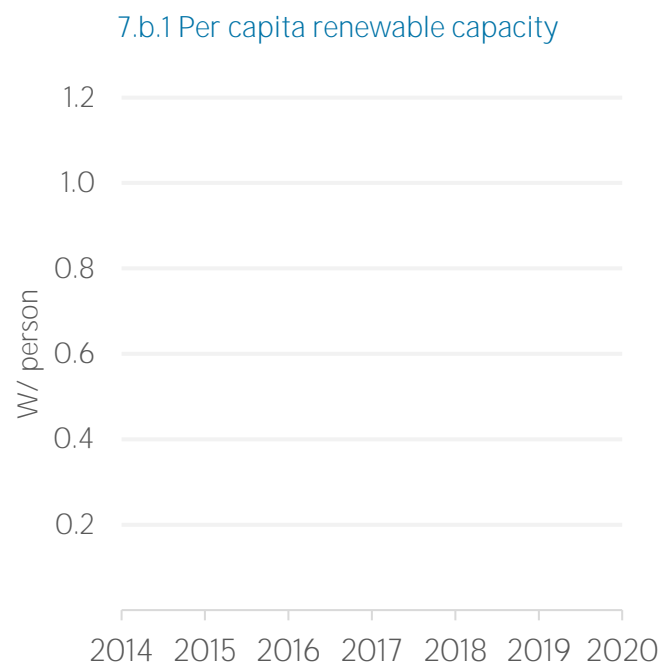
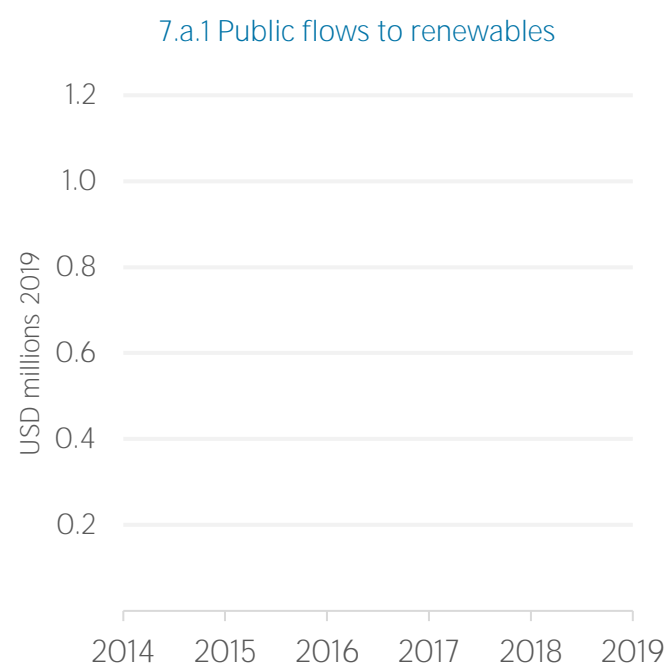
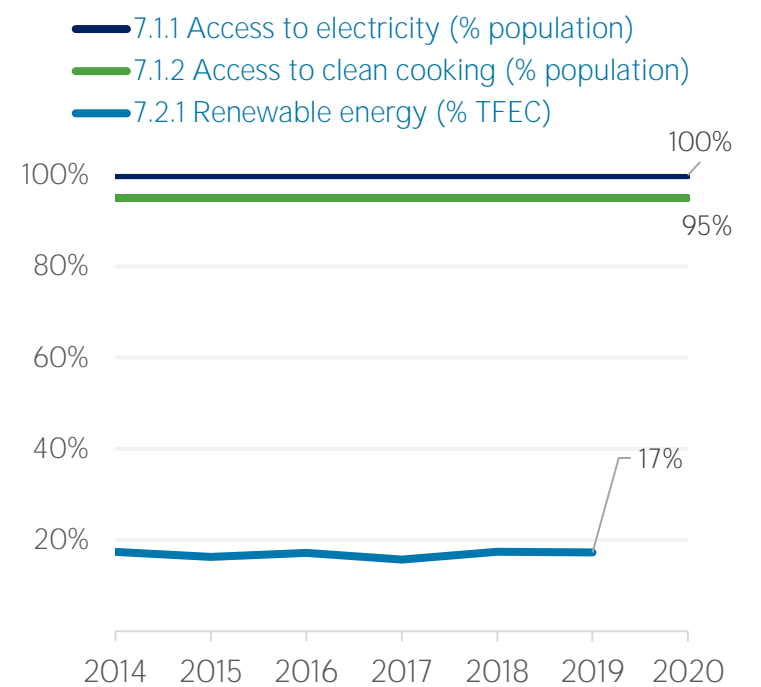
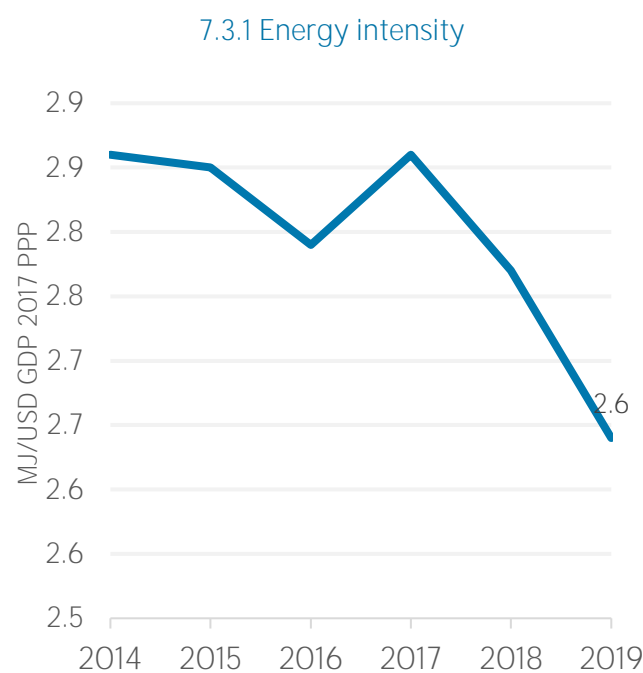
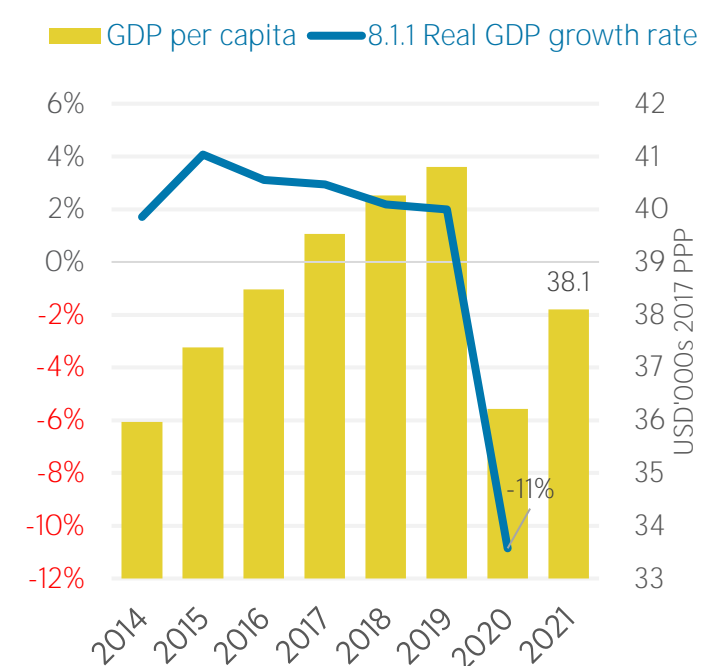


COUNTRY INDICATORS AND SDGS



TOTAL ENERGY SUPPLY (TES)

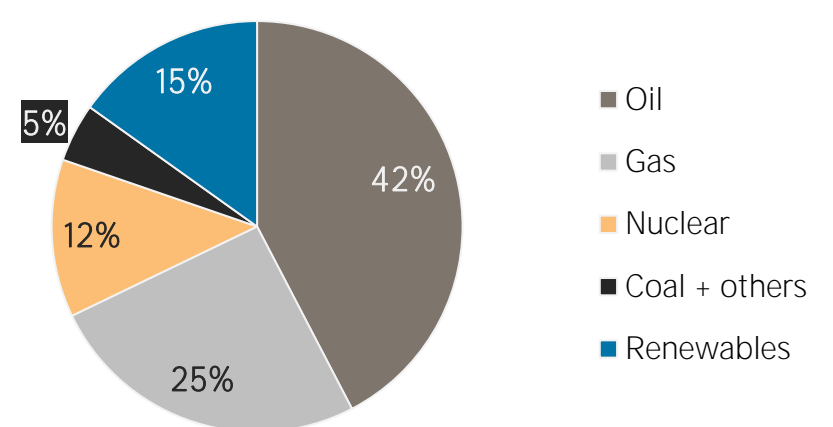
| Total Energy Supply (TES) | 2014 | 2019 |
|---------------------------|-----------|-----------|
| Non-renewable (TJ) | 4 023 276 | 4 306 072 |
| Renewable (TJ) | 659 600 | 767 734 |
| Total (TJ) | 4 682 875 | 5 073 806 |
| Renewable share (%) | 14 | 15 |

| Growth in TES | 2014-19 | 2018-19 |
|-------------------|---------|---------|
| Non-renewable (%) | +7.0 | -3.2 |
| Renewable (%) | +16.4 | +4.8 |
| Total (%) | +8.3 | -2.0 |

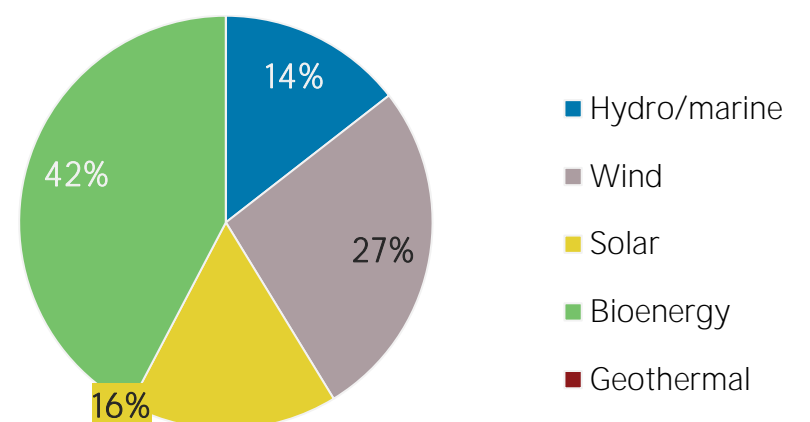
| Primary energy trade | 2014 | 2019 |
|----------------------|------------|------------|
| Imports (TJ) | 5 172 484 | 5 419 846 |
| Exports (TJ) | 1 337 095 | 1 207 714 |
| Net trade (TJ) | -3 835 389 | -4 212 132 |

| | | |
|-----------------------------|-----|-----|
| Imports (% of supply) | 110 | 107 |
| Exports (% of production) | 97 | 85 |
| Energy self-sufficiency (%) | 30 | 28 |

Total energy supply in 2019

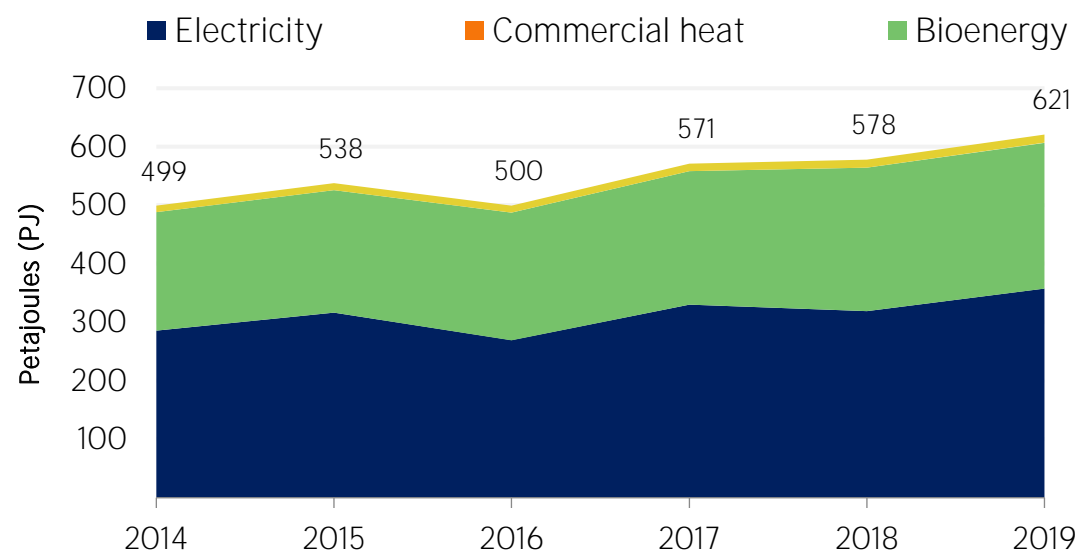


Renewable energy supply in 2019



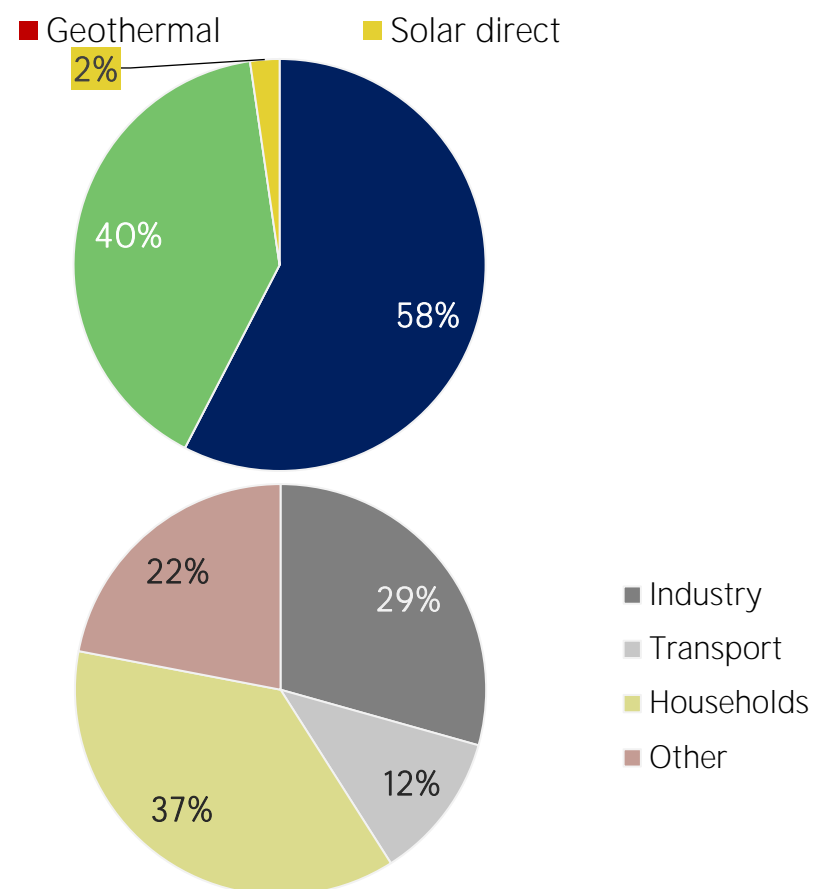
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend



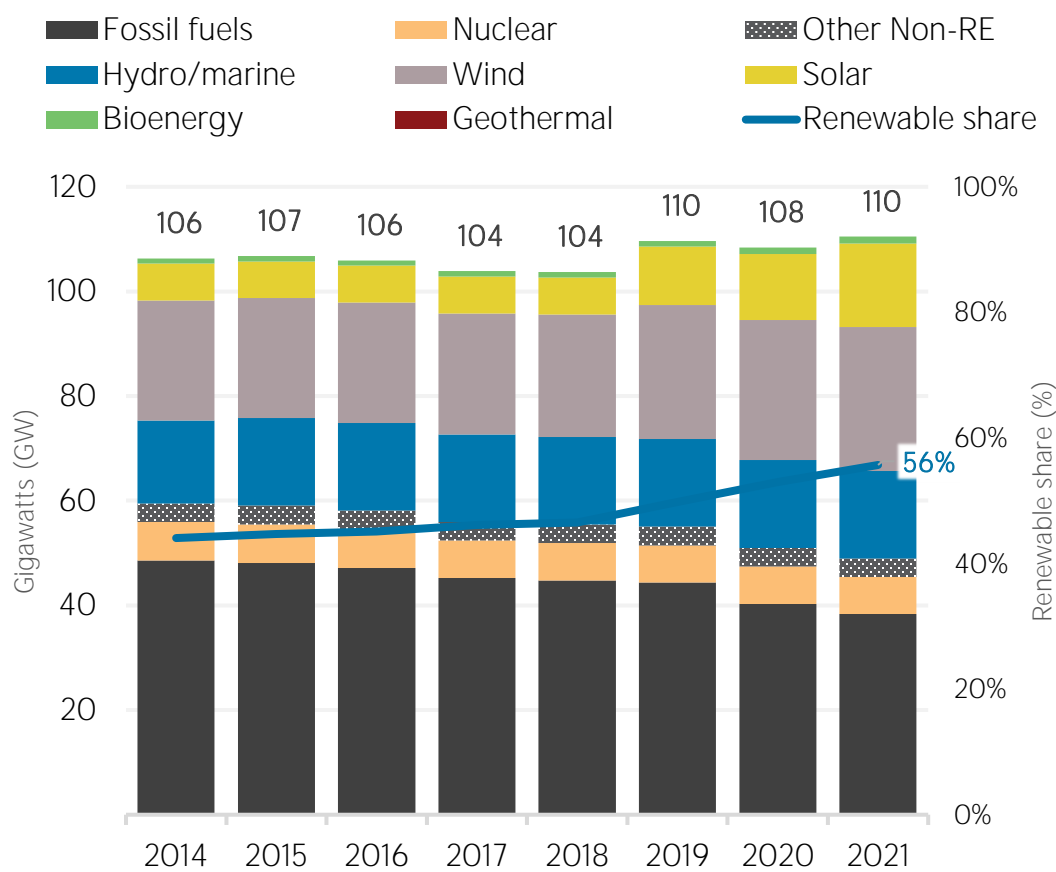
| Consumption by sector | 2014 | 2019 |
|-----------------------|---------|---------|
| Industry (TJ) | 137 836 | 182 273 |
| Transport (TJ) | 44 728 | 72 195 |
| Households (TJ) | 204 096 | 229 852 |
| Other (TJ) | 112 315 | 136 558 |

Renewable energy consumption in 2019

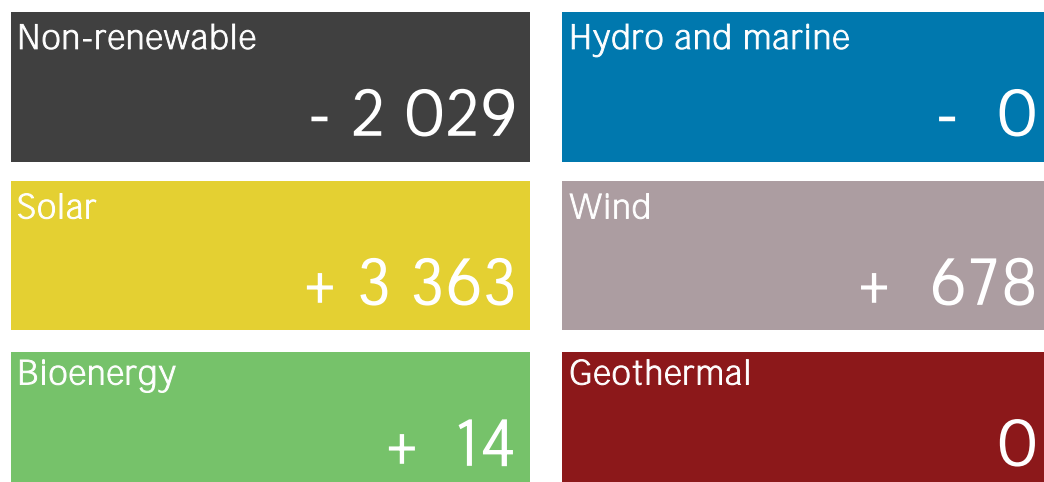


ELECTRICITY CAPACITY

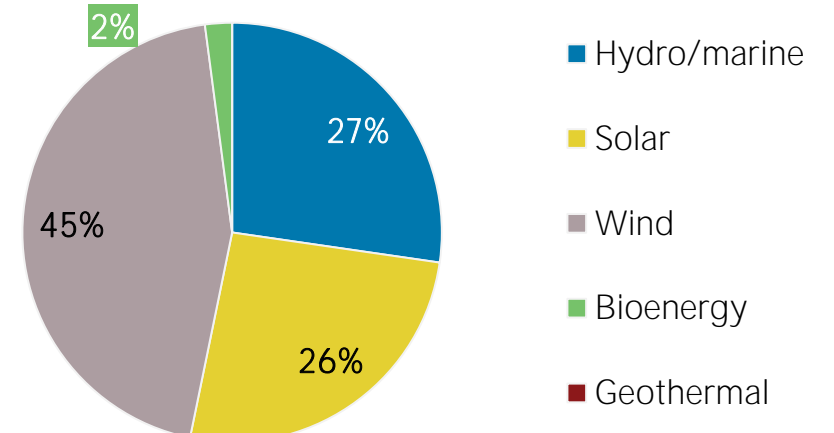
Installed capacity trend



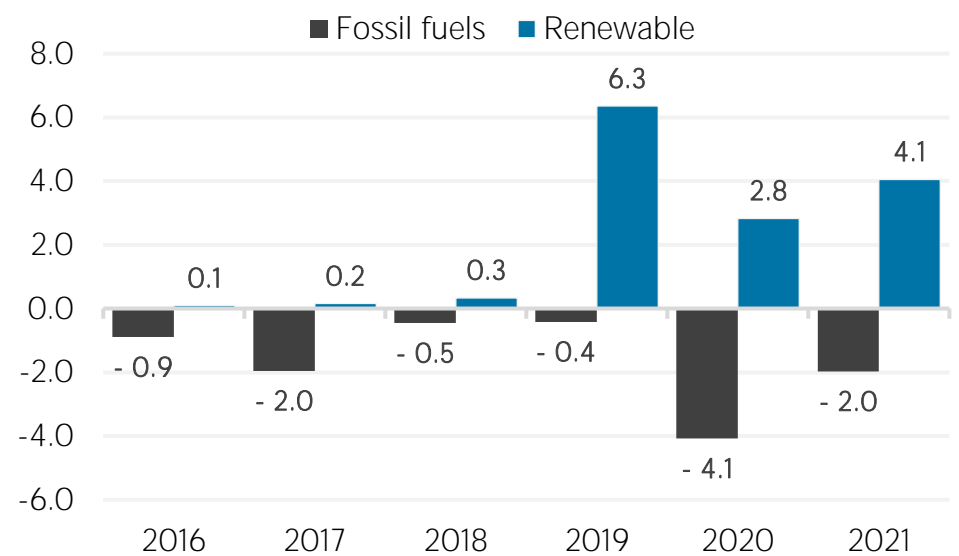
Net capacity change in 2021 (MW)



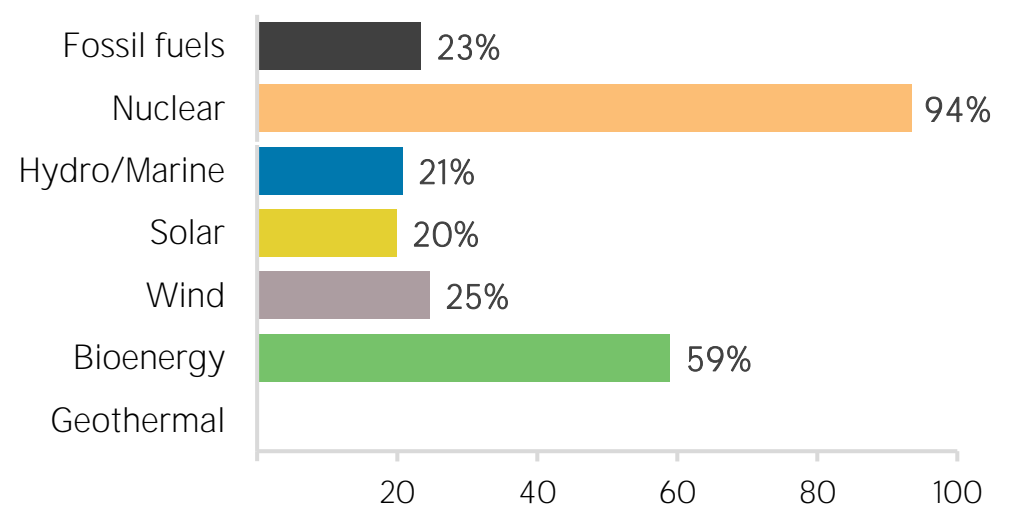
Renewable capacity in 2021



Net capacity change (GW)

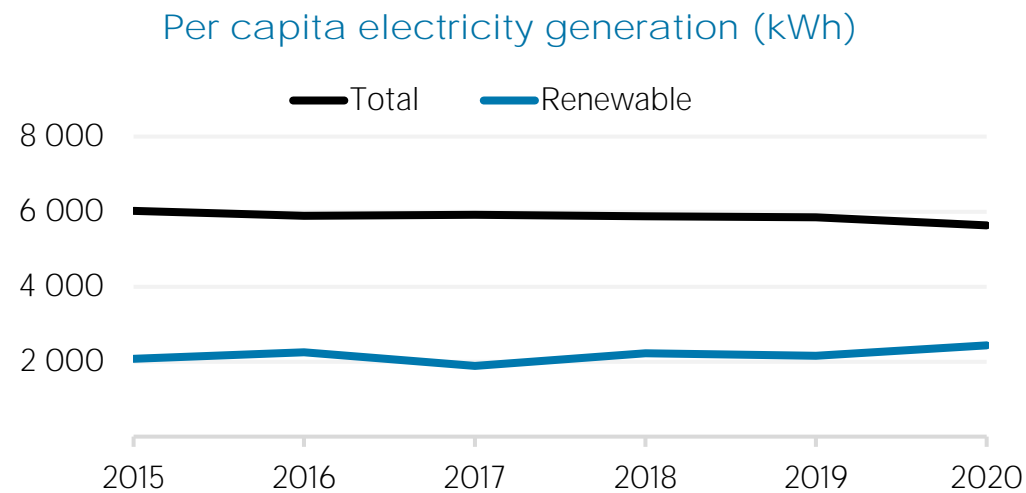


Capacity utilisation in 2020 (%)

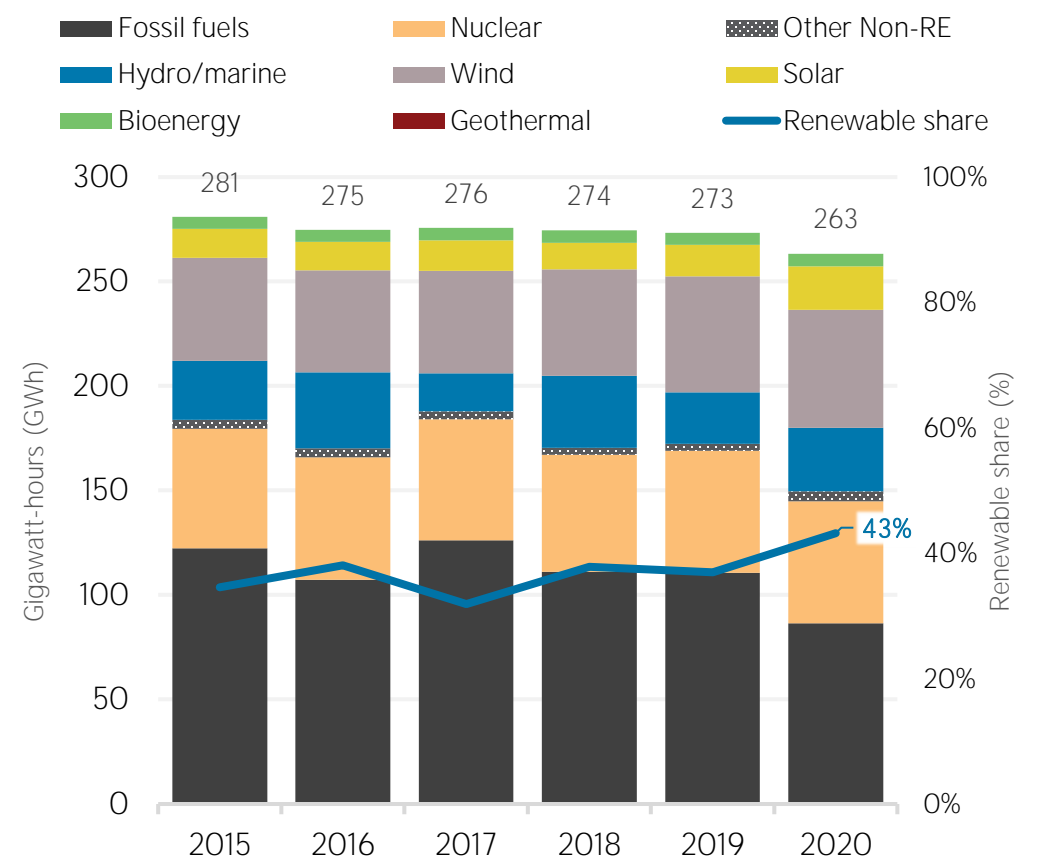


ELECTRICITY GENERATION

| Generation in 2020 | GWh | % |
|----------------------|----------------|------------|
| Non-renewable | 149 590 | 57 |
| Renewable | 113 756 | 43 |
| Hydro and marine | 30 507 | 12 |
| Solar | 20 667 | 8 |
| Wind | 56 444 | 21 |
| Bioenergy | 6 138 | 2 |
| Geothermal | 0 | 0 |
| Total | 263 346 | 100 |



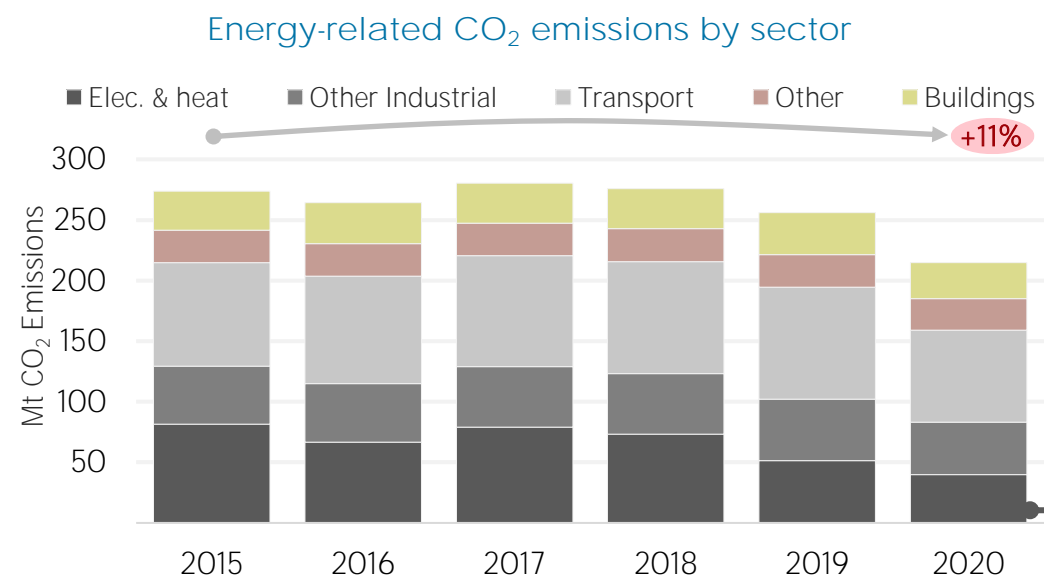
Electricity generation trend



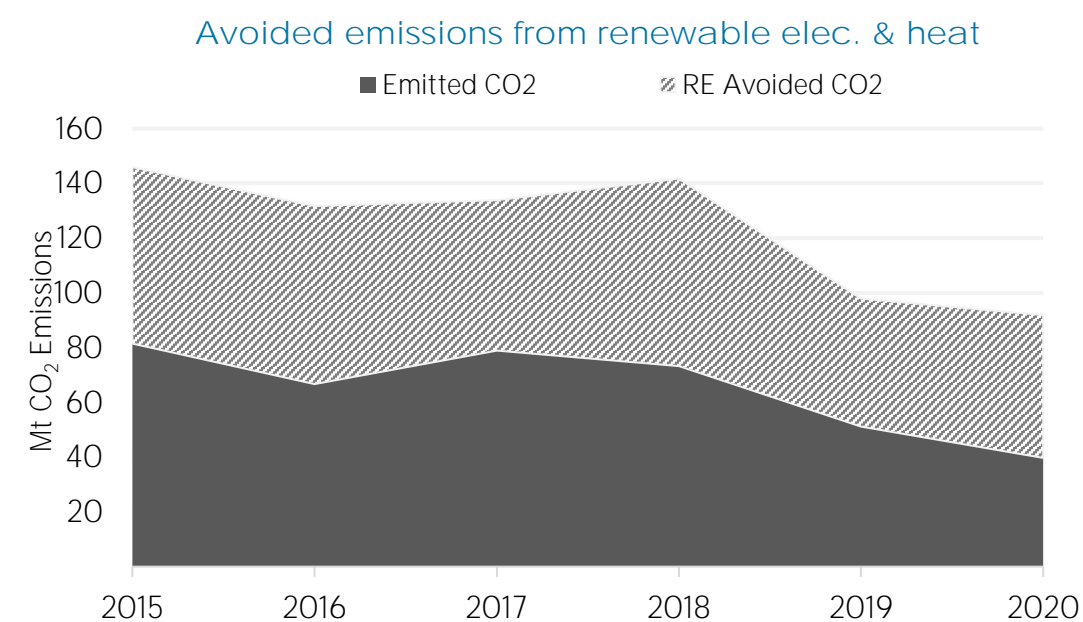
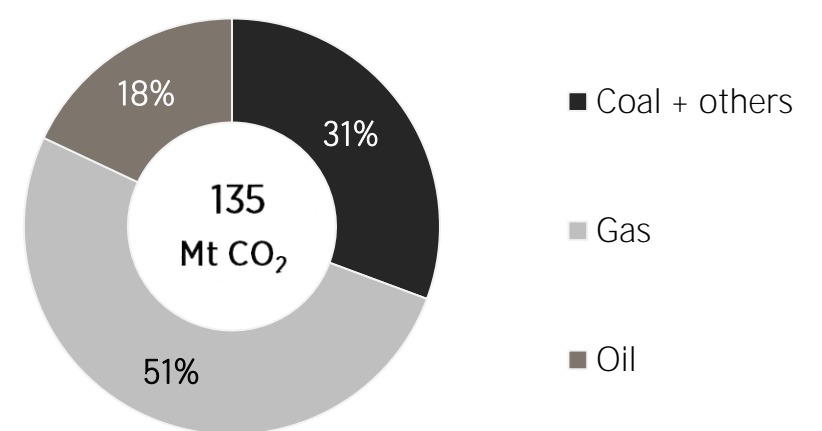
LATEST POLICIES, PROGRAMMES AND LEGISLATION

- Aid for municipal infrastructure for Just Transition 2022
- 1,2 GW renewable energies tender in Teruel 2021
- Aid Program for energy efficiency actions in SMEs and large company in the industrial sector 2021
- Circular Economy Action Plan 2021
- Climate change and energy transition law 2021

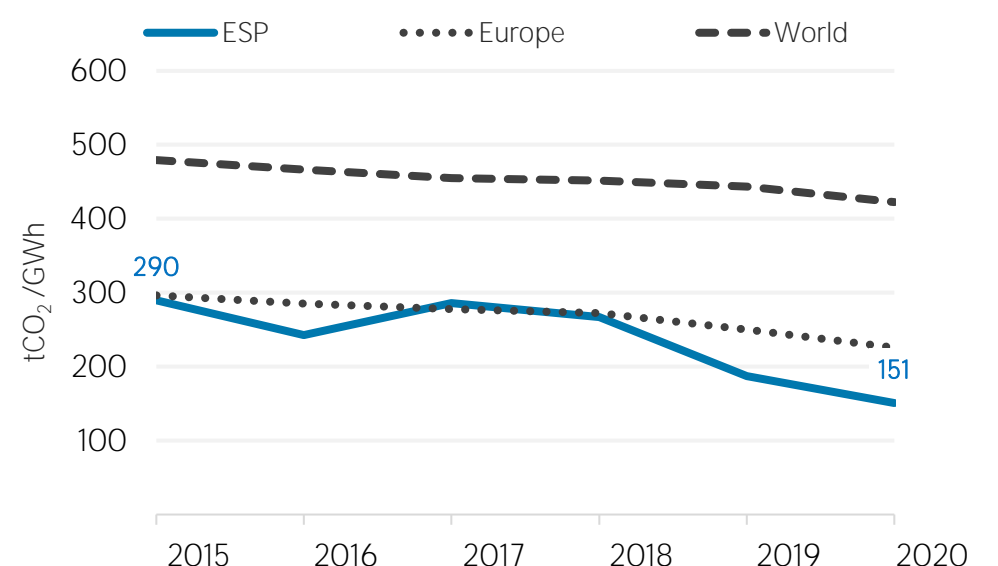
ENERGY AND EMISSIONS



Elec. & heat generation CO₂ emissions in



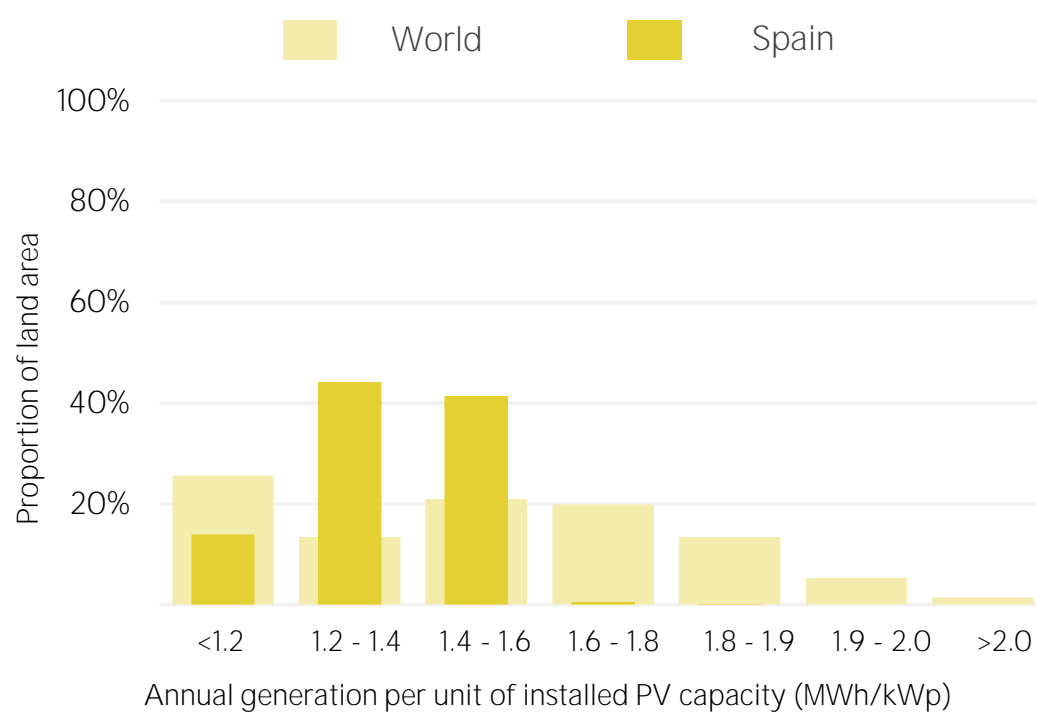
CO₂ emission factor for elec. & heat generation



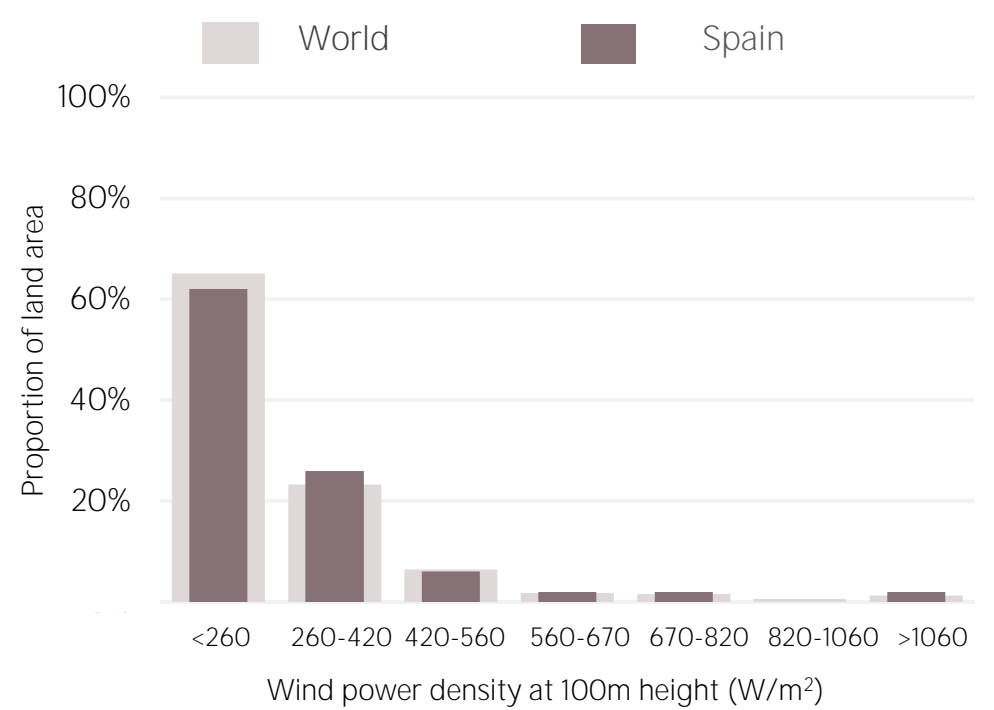
Avoided emissions based on fossil fuel mix used for power

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

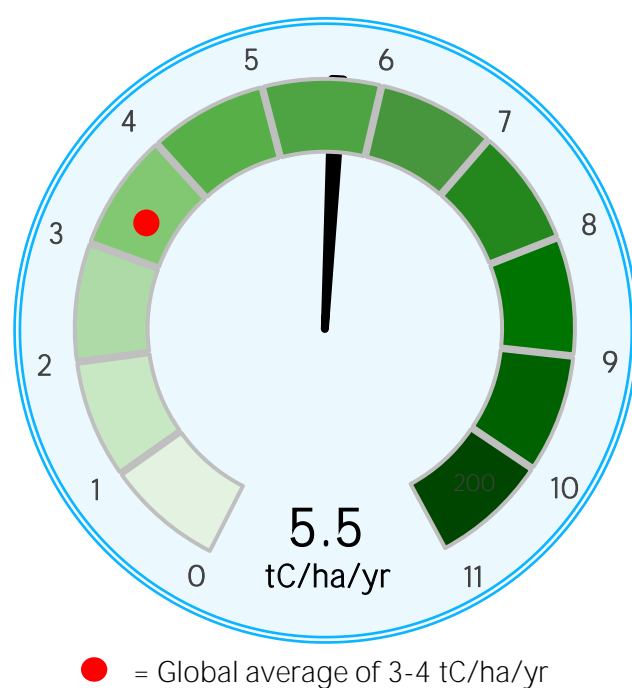
Distribution of solar potential



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.

Last updated on: 24th August, 2022