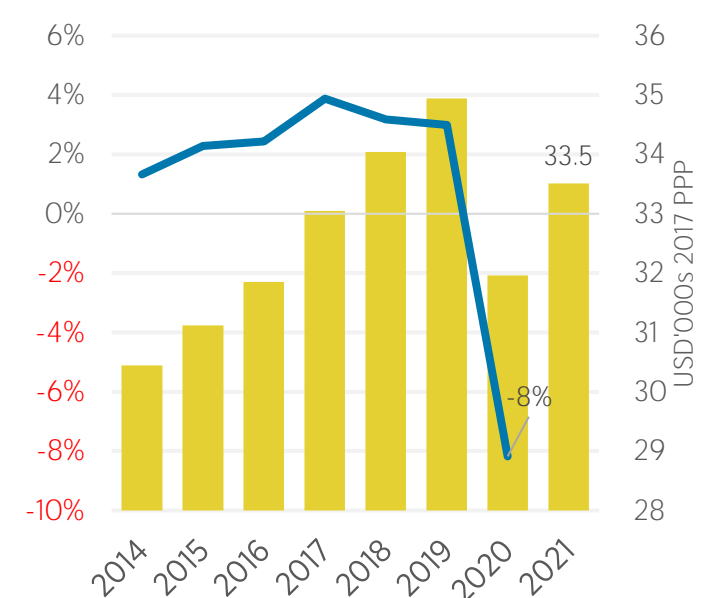
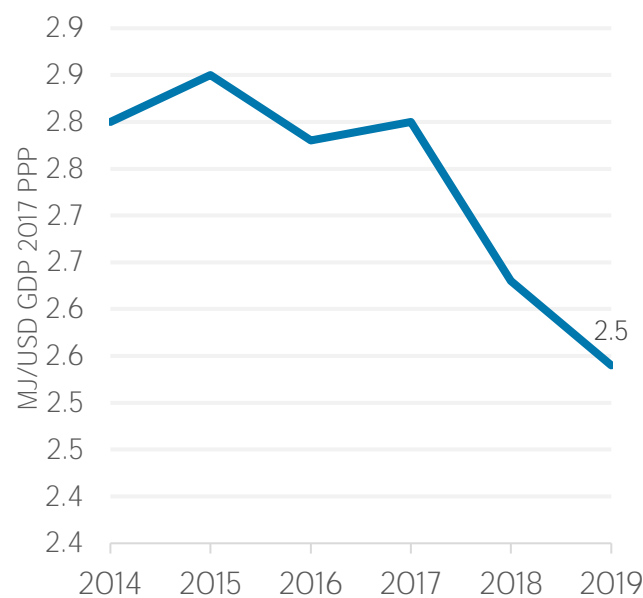


## COUNTRY INDICATORS AND SDGS

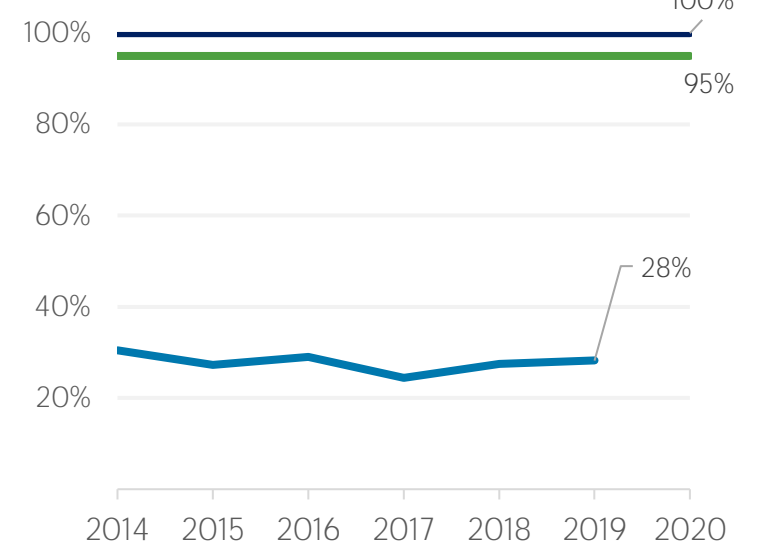
GDP per capita 8.1.1 Real GDP growth rate



7.3.1 Energy intensity



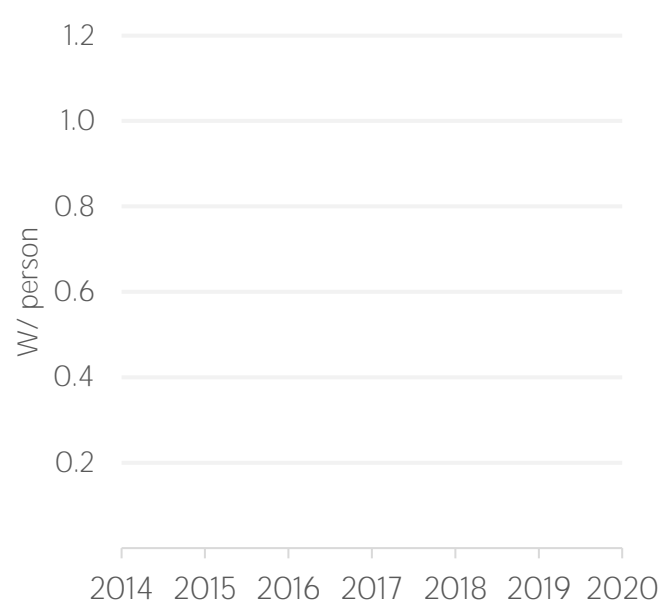
7.1.1 Access to electricity (% population)  
7.1.2 Access to clean cooking (% population)  
7.2.1 Renewable energy (% TREC)



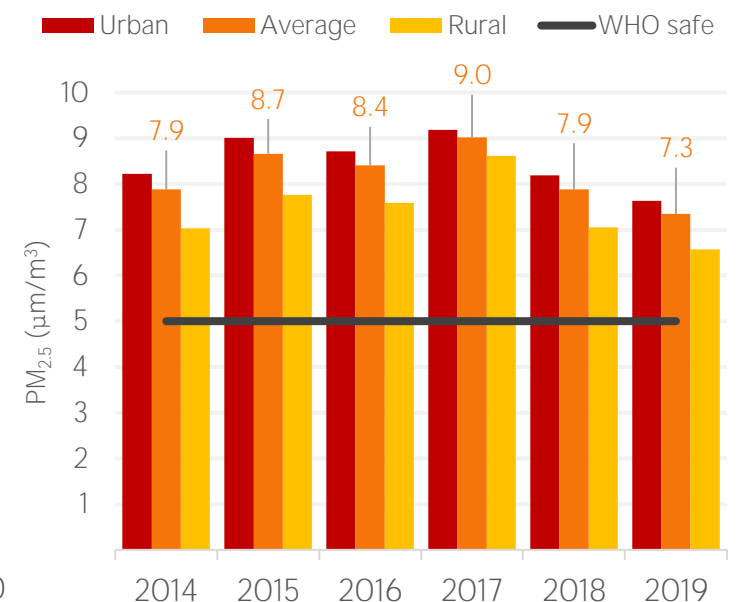
7.a.1 Public flows to renewables



7.b.1 Per capita renewable capacity



11.6.2 Air particulate matter (PM<sub>2.5</sub>)



## TOTAL ENERGY SUPPLY (TES)

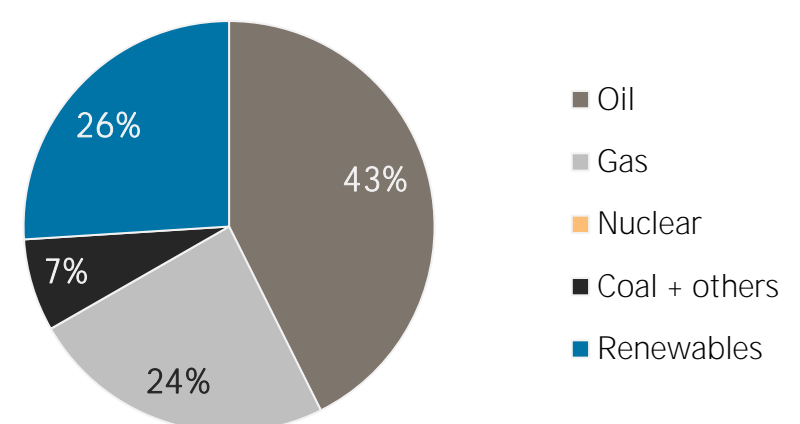
Total Energy Supply (TES)	2014	2019
Non-renewable (TJ)	652 739	679 527
Renewable (TJ)	205 960	238 731
Total (TJ)	858 699	918 258
Renewable share (%)	24	26

Growth in TES	2014-19	2018-19
Non-renewable (%)	+4.1	-2.4
Renewable (%)	+15.9	+11.3
Total (%)	+6.9	+0.8

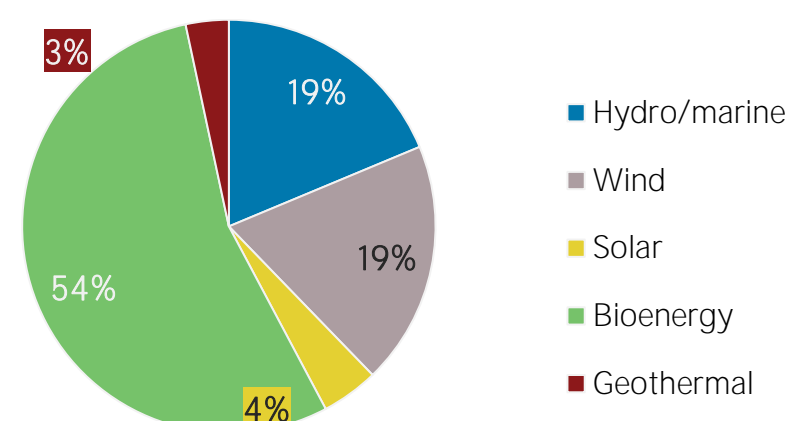
Primary energy trade	2014	2019
Imports (TJ)	926 990	1 009 171
Exports (TJ)	240 192	239 715
Net trade (TJ)	- 686 798	- 769 456

Imports (% of supply)	108	110
Exports (% of production)	107	94
Energy self-sufficiency (%)	26	28

Total energy supply in 2019

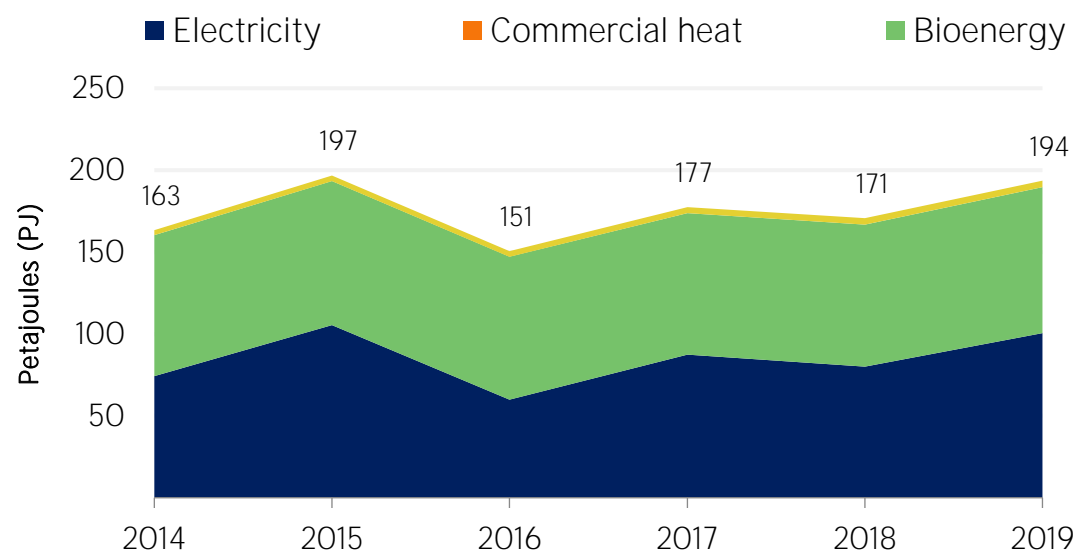


Renewable energy supply in 2019



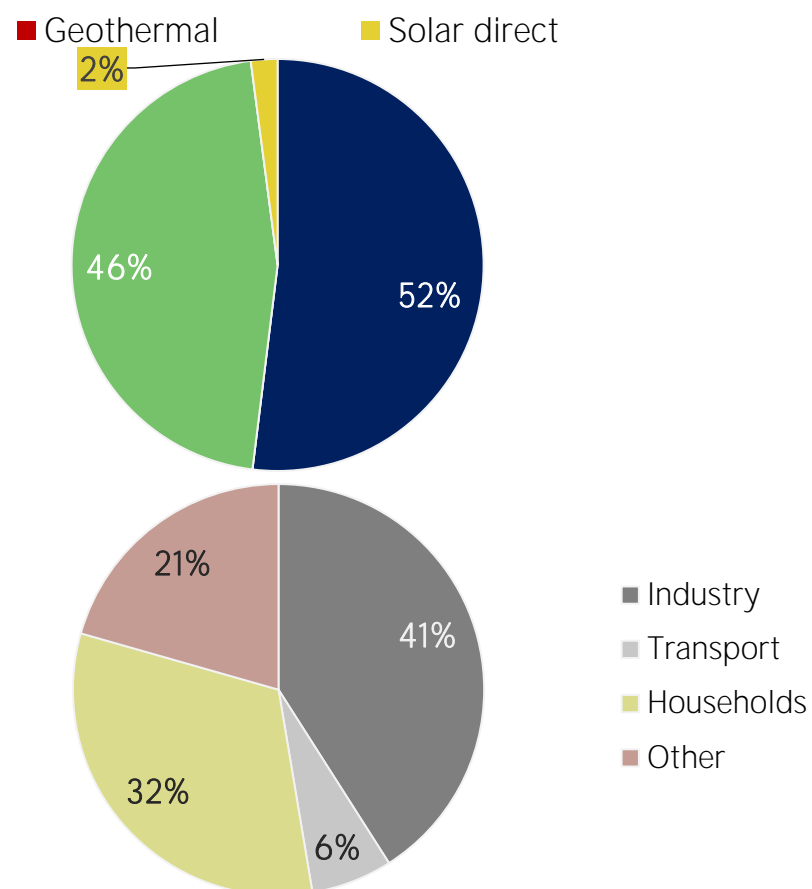
## RENEWABLE ENERGY CONSUMPTION (TFEC)

### Renewable TFEC trend



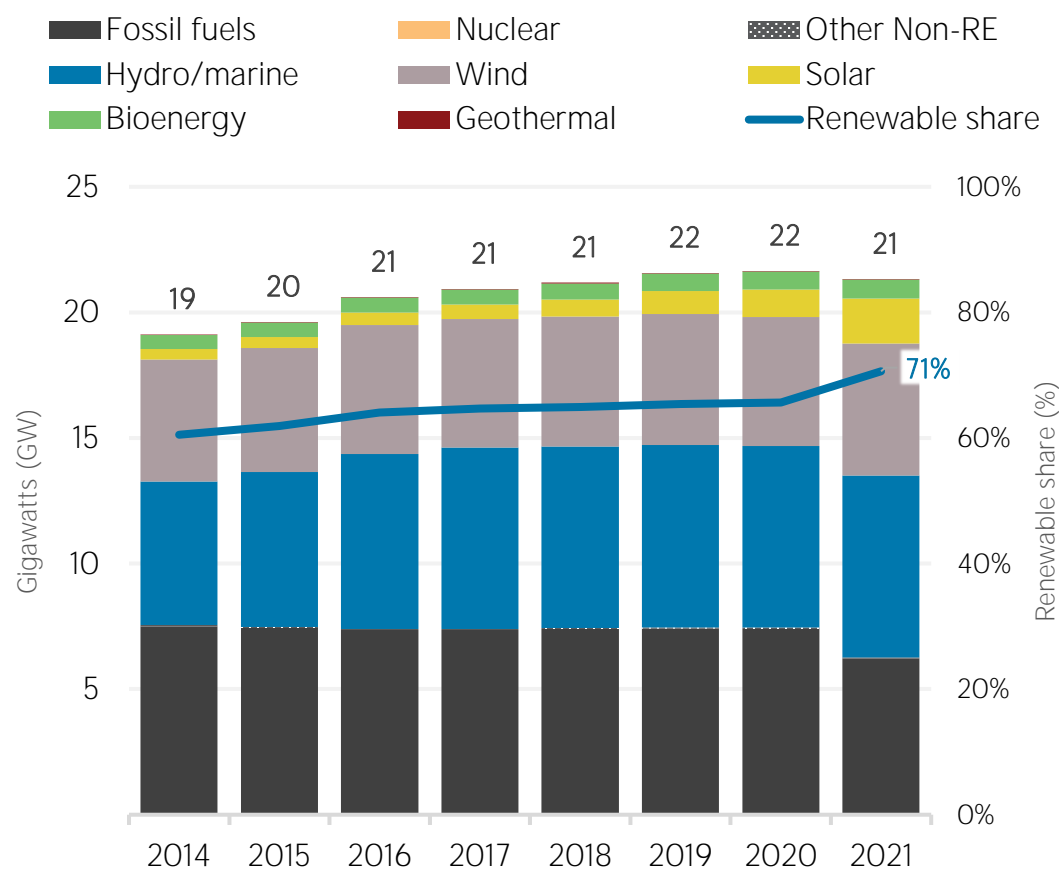
Consumption by sector	2014	2019
Industry (TJ)	66 507	79 294
Transport (TJ)	11 312	12 368
Households (TJ)	53 648	62 047
Other (TJ)	31 982	39 835

### Renewable energy consumption in 2019

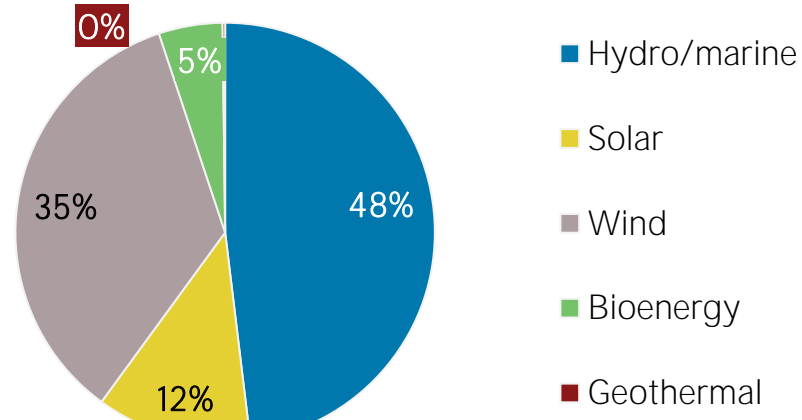


## ELECTRICITY CAPACITY

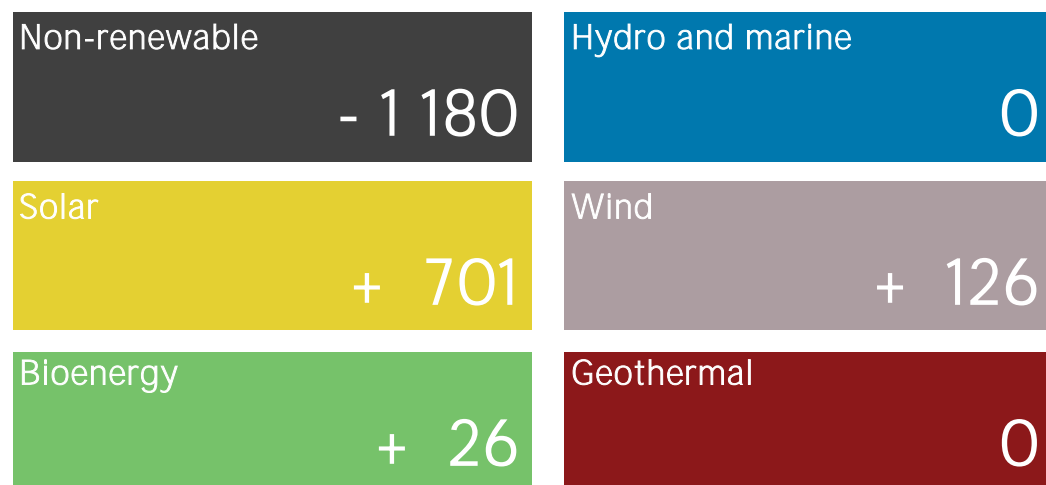
### Installed capacity trend



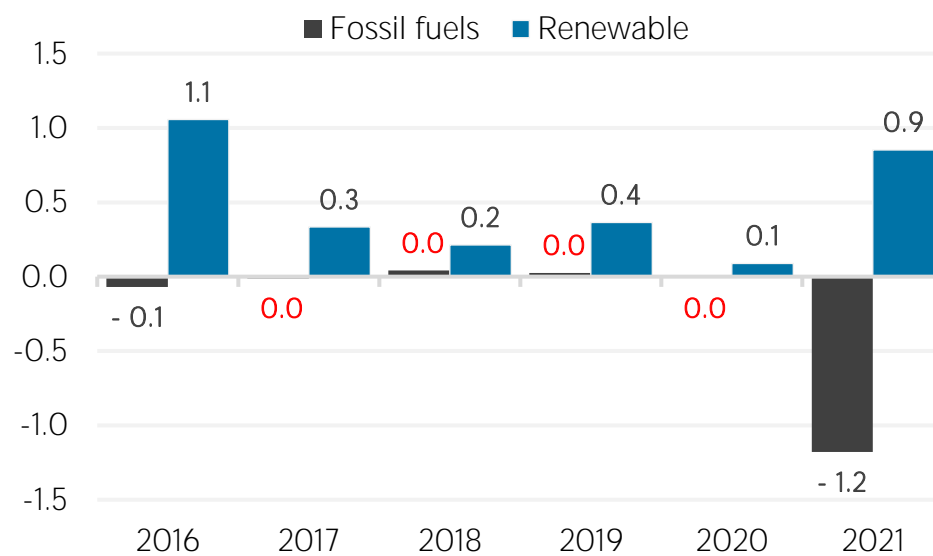
### Renewable capacity in 2021



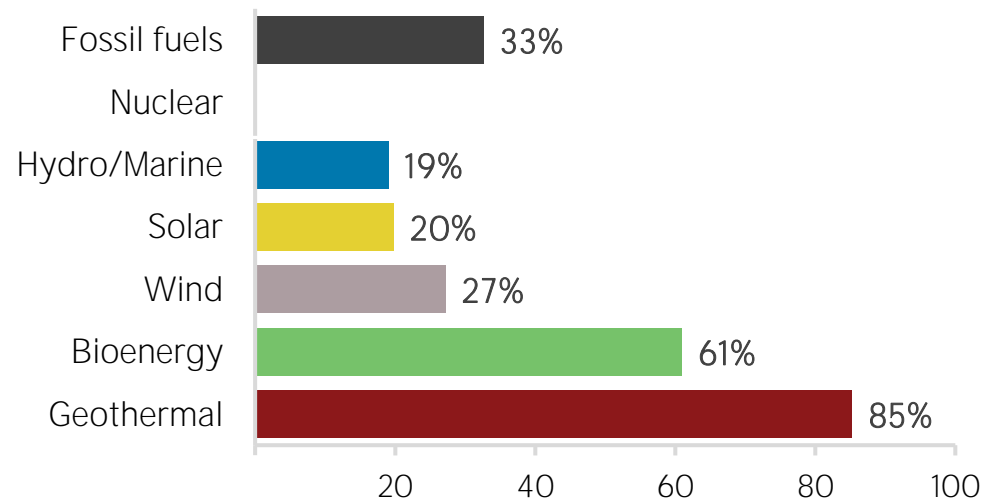
### Net capacity change in 2021 (MW)



### Net capacity change (GW)



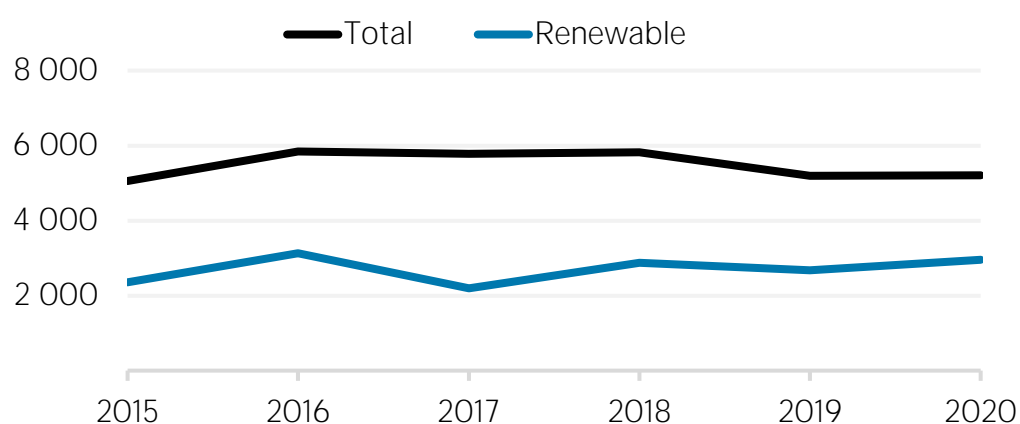
### Capacity utilisation in 2020 (%)



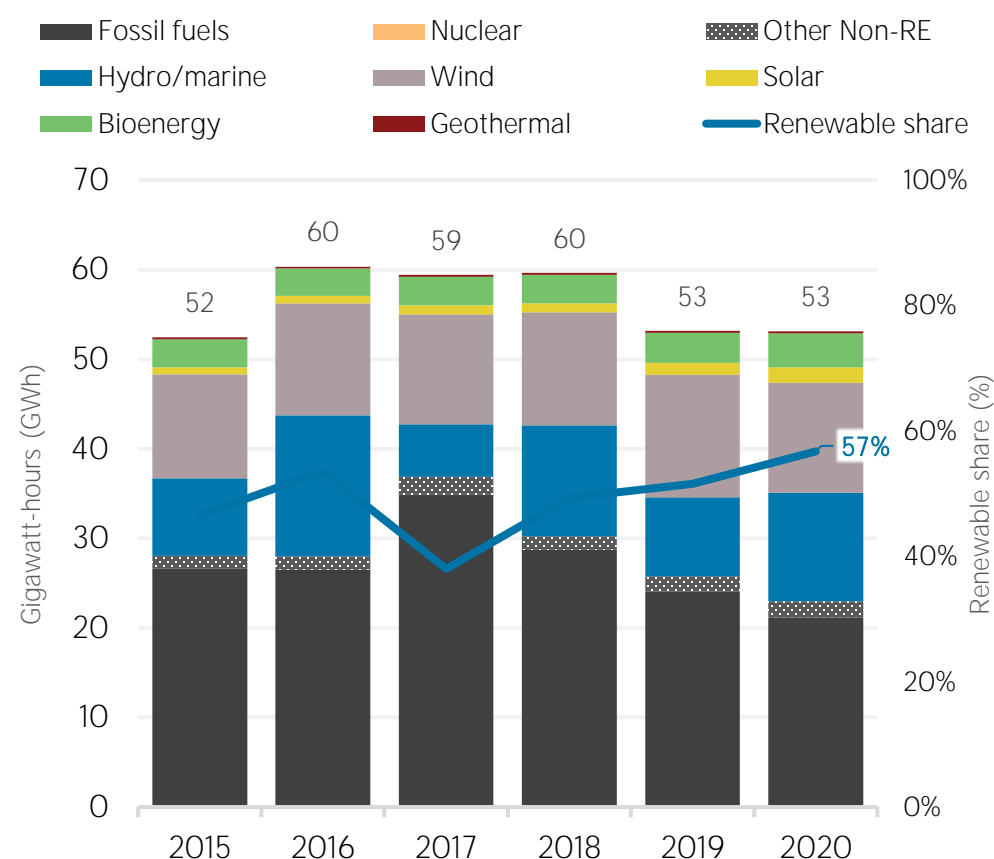
## ELECTRICITY GENERATION

Generation in 2020	GWh	%
<b>Non-renewable</b>	<b>22 979</b>	<b>43</b>
<b>Renewable</b>	<b>30 117</b>	<b>57</b>
Hydro and marine	12 083	23
Solar	1 733	3
Wind	12 299	23
Bioenergy	3 786	7
Geothermal	217	0
<b>Total</b>	<b>53 095</b>	<b>100</b>

Per capita electricity generation (kWh)



Electricity generation trend

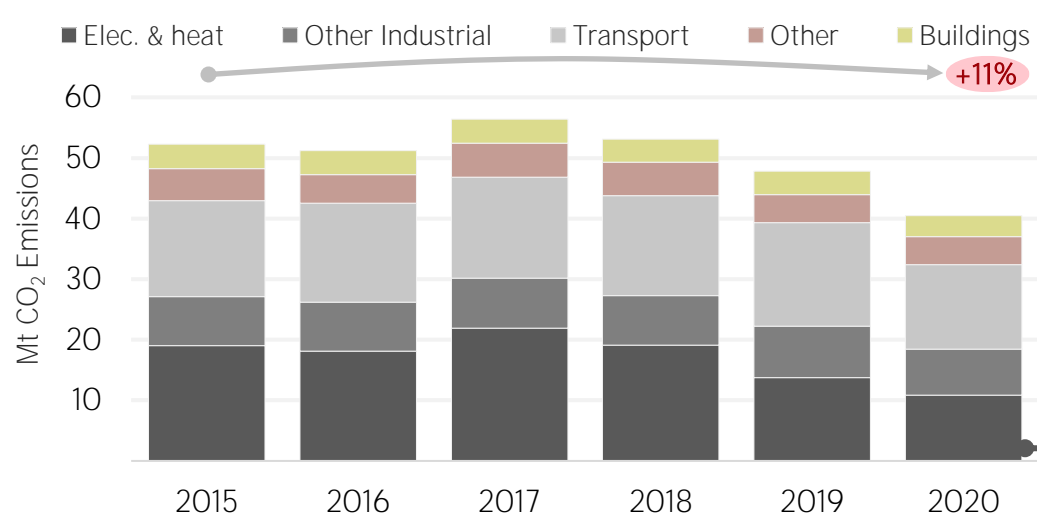


## LATEST POLICIES, PROGRAMMES AND LEGISLATION

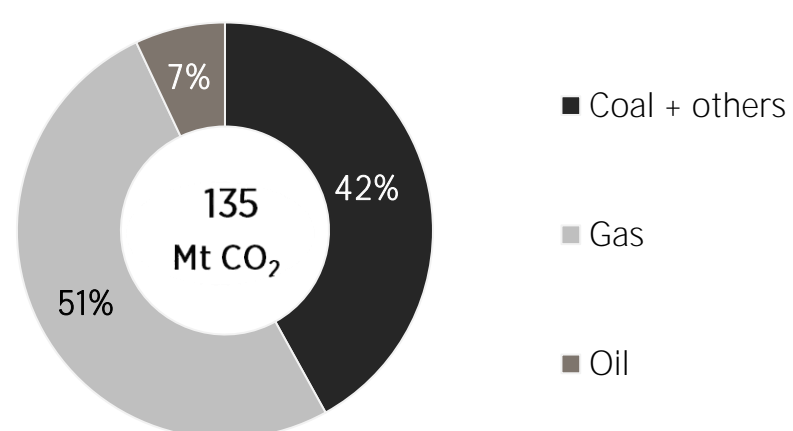
- 1 Coal phase-out 2021
- 2 Investment for the installation of PV panels in agriculture 2021
- 3 Morocco and Portugal agreement on green hydrogen development 2021
- 4 Portugal and EIB signs MoU to accelerate investments in the hydrogen field 2021
- 5 Recovery and Resilience plan 2021

## ENERGY AND EMISSIONS

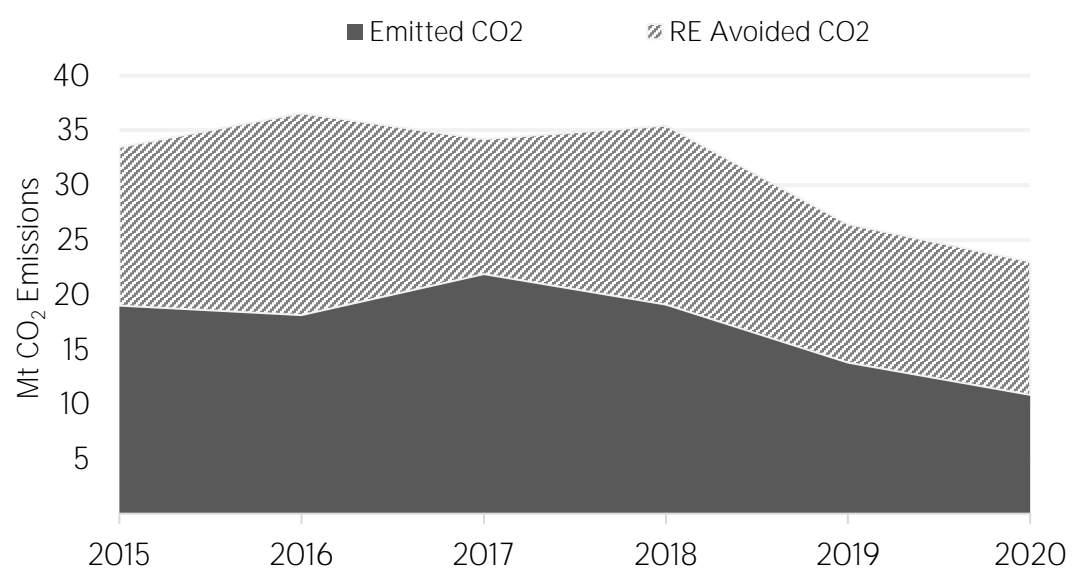
Energy-related CO<sub>2</sub> emissions by sector



Elec. & heat generation CO<sub>2</sub> emissions in

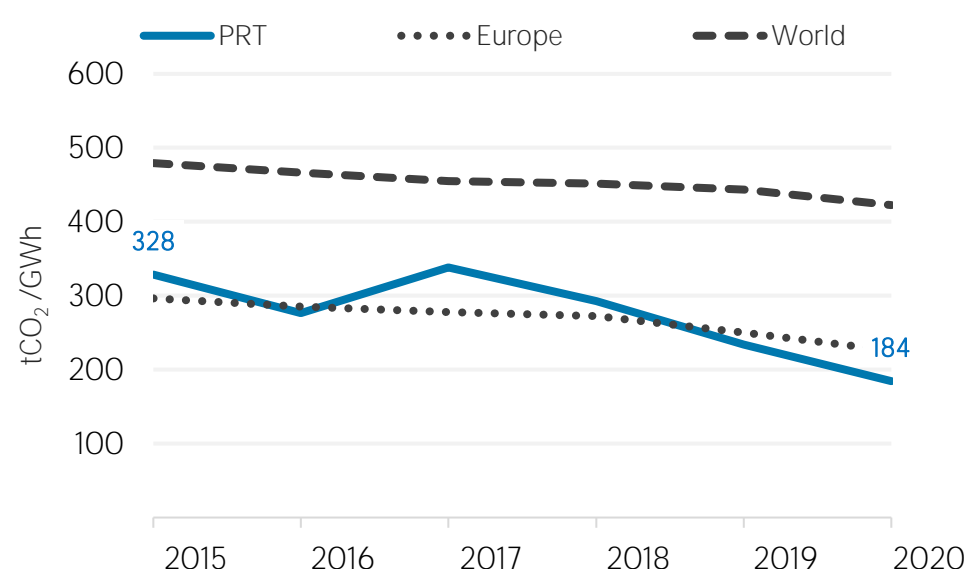


Avoided emissions from renewable elec. & heat



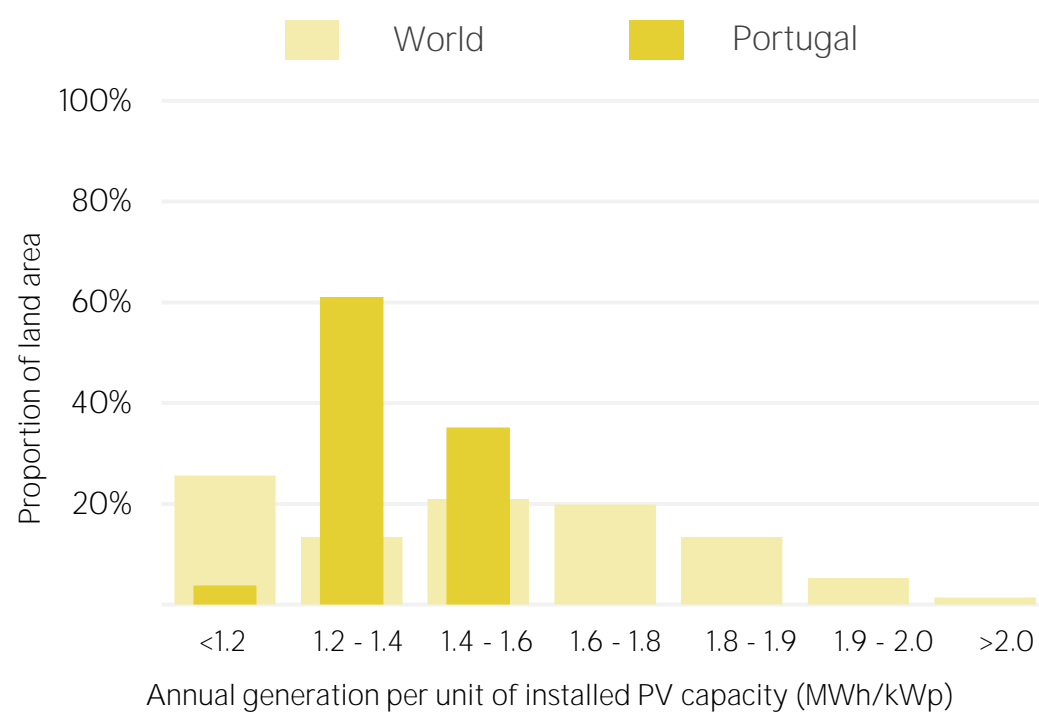
Avoided emissions based on fossil fuel mix used for power

CO<sub>2</sub> emission factor for elec. & heat generation

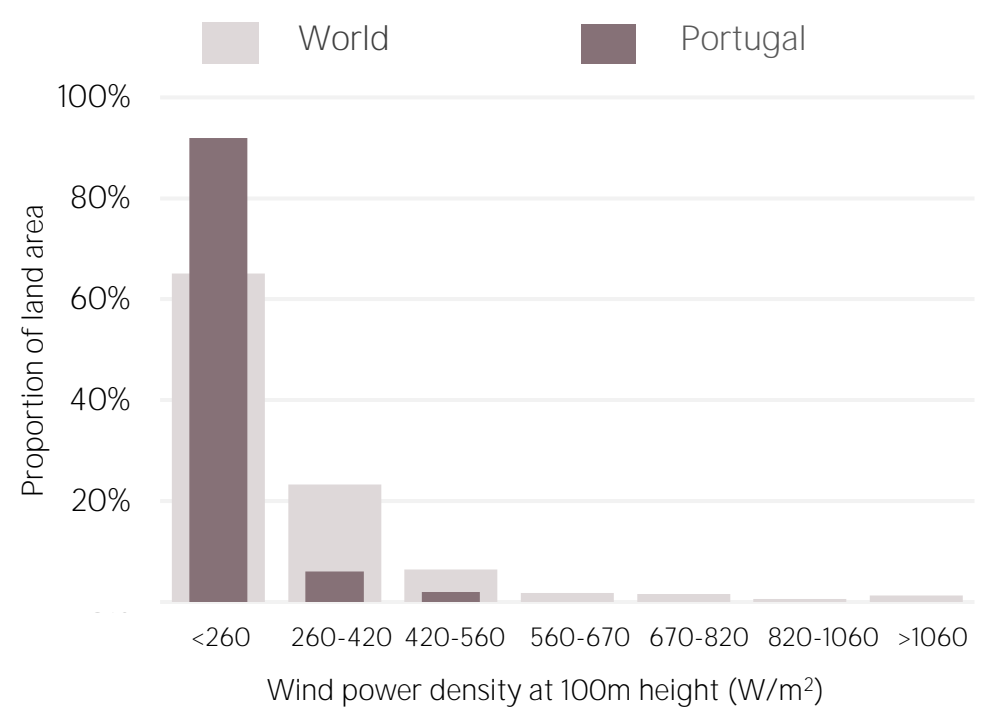


Calculated by dividing power sector emissions by elec. + heat gen.

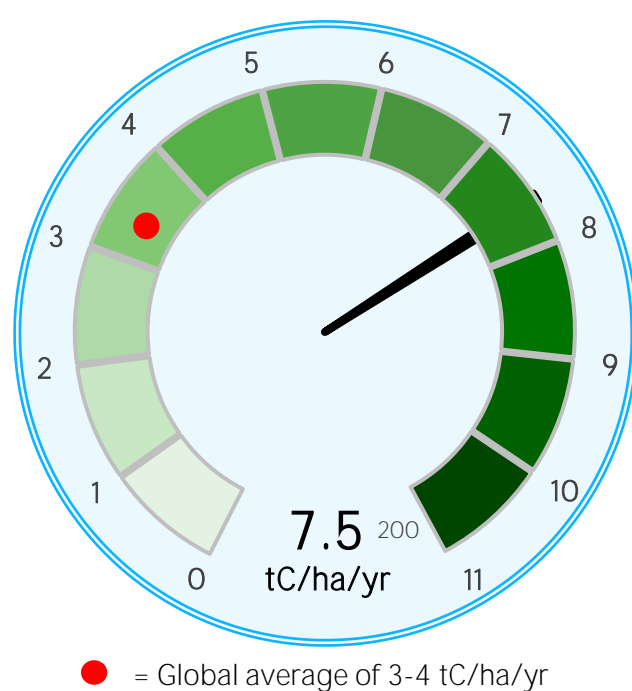
Distribution of solar potential



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/m<sup>2</sup>) 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](mailto:statistics@irena.org).

Last updated on: 24th August, 2022