

Norway

SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2018)

| | | | |
|---------------------------------------|------|---|-------|
| Renewable energy (% of TFEC) | 60.8 | Access to electricity (% of population) | 100.0 |
| Energy efficiency (MJ per \$1 of GDP) | 3.5 | Access to clean cooking (% of population) | >95 |
| Public flows renewables (2018 USD M) | n.a. | Per capita renewable capacity (W/person) | n.a. |

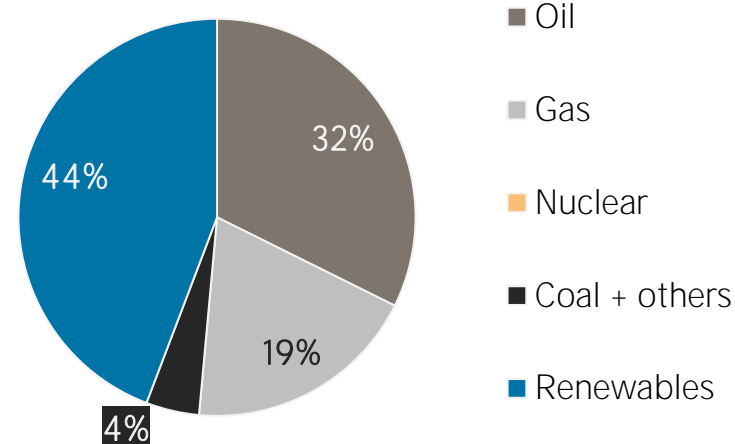
TOTAL PRIMARY ENERGY SUPPLY (TPES)

| TPES | 2013 | 2018 |
|---------------------|-----------|-----------|
| Non-renewable (TJ) | 710 067 | 629 409 |
| Renewable (TJ) | 535 226 | 498 891 |
| Total (TJ) | 1 245 293 | 1 128 300 |
| Renewable share (%) | 43 | 44 |

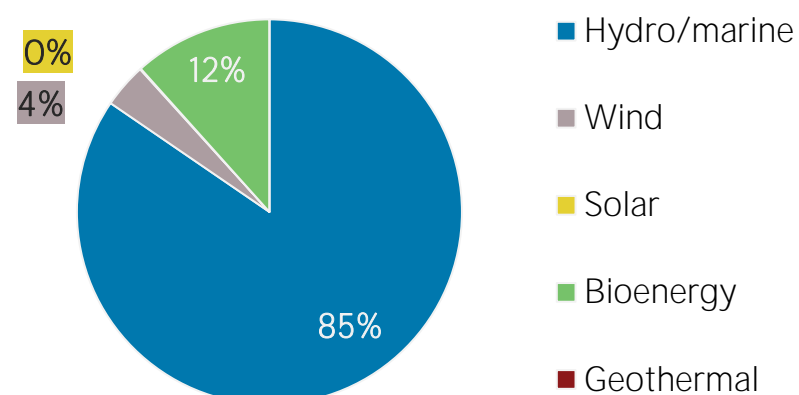
| Growth in TPES | 2013-18 | 2017-18 |
|-------------------|---------|---------|
| Non-renewable (%) | -11.4 | -9.9 |
| Renewable (%) | -6.8 | -5.9 |
| Total (%) | -9.4 | -8.1 |

| Primary energy trade | 2013 | 2018 |
|-----------------------------|-----------|-----------|
| Imports (TJ) | 369 109 | 464 199 |
| Exports (TJ) | 7 274 946 | 7 886 609 |
| Net trade (TJ) | 6 905 837 | 7 422 410 |
| Imports (% of supply) | 30 | 41 |
| Exports (% of production) | 89 | 92 |
| Energy self-sufficiency (%) | 658 | 764 |
| Net trade (USD million) | + 98 696 | + 70 901 |
| Net trade (% of GDP) | +18.9 | +16.2 |

Total primary energy supply in 2018



Renewable energy supply in 2018



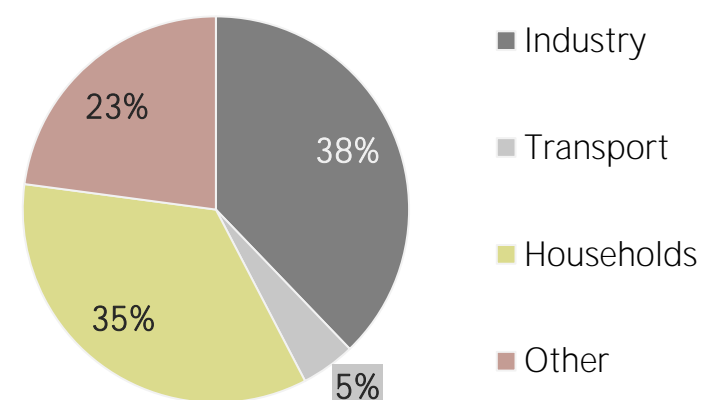
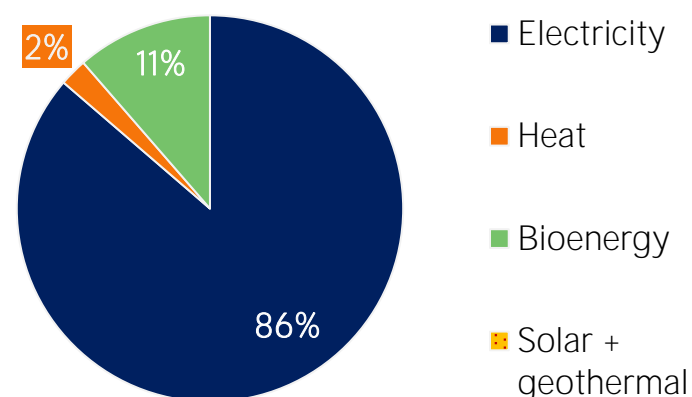
RENEWABLE ENERGY CONSUMPTION

| Consumption by source | 2013 | 2018 |
|-------------------------|----------------|----------------|
| Electricity (TJ) | 422 589 | 369 695 |
| Heat (TJ) | 7 656 | 9 880 |
| Bioenergy (TJ) | 44 480 | 48 764 |
| Solar + geothermal (TJ) | 0 | 0 |
| Total (TJ) | 474 725 | 428 339 |
| Electricity share (%) | 89 | 86 |

| Consumption growth | 2013-18 | 2017-18 |
|---------------------------|-------------|-------------|
| Renewable electricity (%) | -12.5 | -6.5 |
| Other renewables (%) | +12.5 | -7.7 |
| Total (%) | -9.8 | -6.6 |

| Consumption by sector | 2013 | 2018 |
|-------------------------|---------|---------|
| Industry (TJ) | 180 845 | 161 984 |
| Transport (TJ) | 7 676 | 19 476 |
| Households (TJ) | 170 312 | 148 832 |
| Other (TJ) | 115 892 | 98 047 |
| Renewable share of TFEC | 57.4 | 60.8 |

Renewable energy consumption in 2018

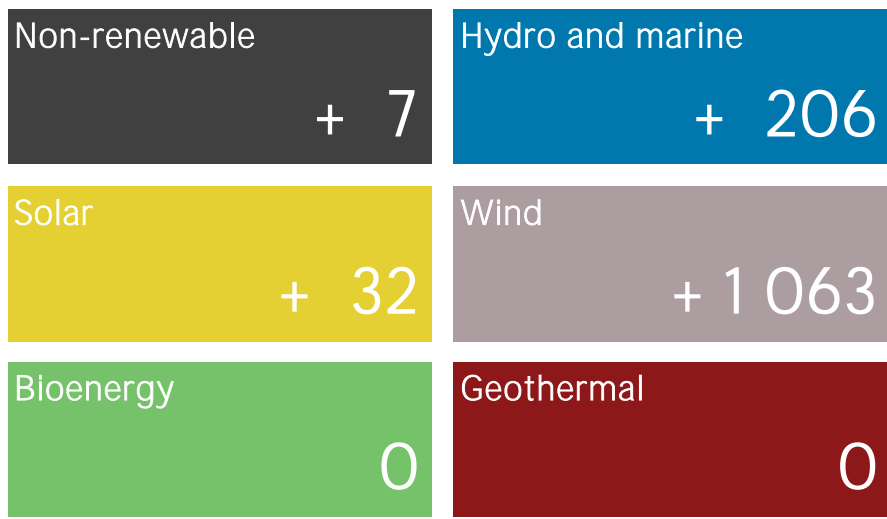


ELECTRICITY CAPACITY AND GENERATION

| Capacity in 2020 | MW | % |
|------------------|---------------|------------|
| Non-renewable | 990 | 3 |
| Renewable | 37 212 | 97 |
| Hydro/marine | 33 003 | 86 |
| Solar | 152 | 0 |
| Wind | 3 977 | 10 |
| Bioenergy | 81 | 0 |
| Geothermal | 0 | 0 |
| Total | 38 202 | 100 |

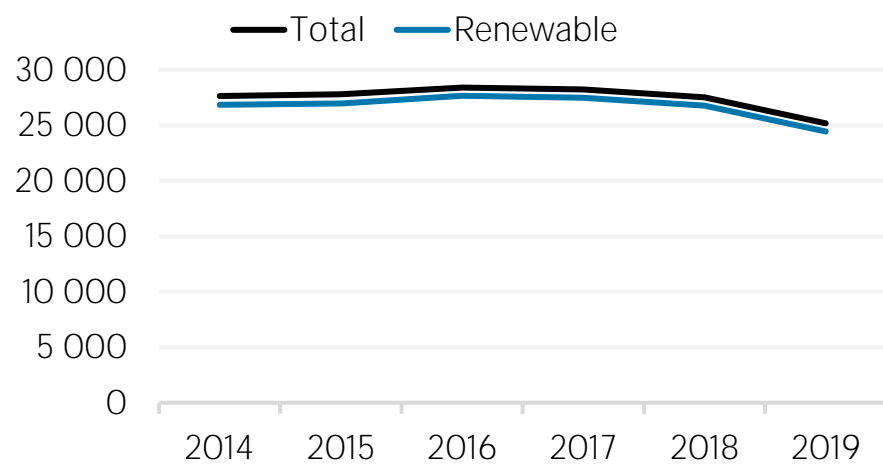
| Capacity change (%) | 2015-20 | 2019-20 |
|---------------------|-------------|--------------|
| Non-renewable | - 32 | + 0.7 |
| Renewable | + 15 | + 3.6 |
| Hydro/marine | + 5 | + 0.6 |
| Solar | + 911 | + 26.4 |
| Wind | + 359 | + 36.5 |
| Bioenergy | - 42 | 0.0 |
| Geothermal | 0 | 0.0 |
| Total | + 13 | + 3.5 |

Net capacity change in 2020 (MW)

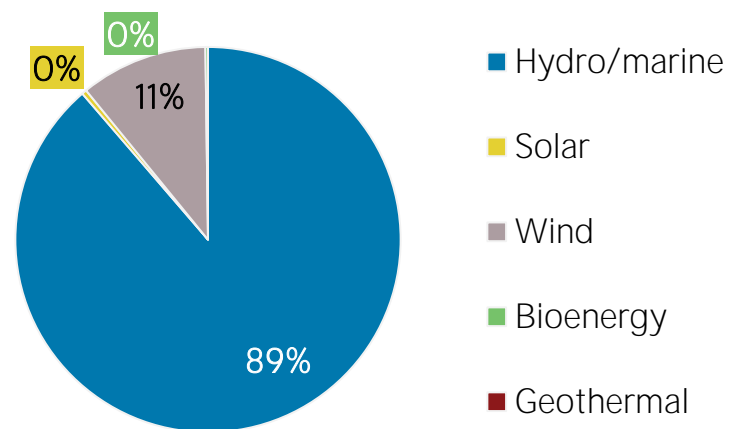


| Generation in 2019 | GWh | % |
|--------------------|----------------|------------|
| Non-renewable | 3 970 | 3 |
| Renewable | 131 415 | 97 |
| Hydro and marine | 125 520 | 93 |
| Solar | 105 | 0 |
| Wind | 5 536 | 4 |
| Bioenergy | 253 | 0 |
| Geothermal | 0 | 0 |
| Total | 135 384 | 100 |

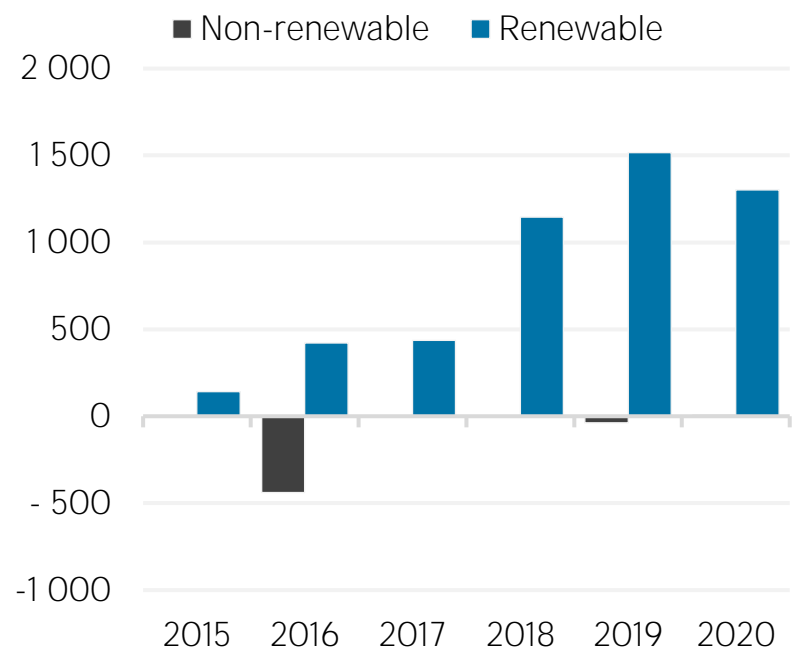
Per capita electricity generation (kWh)



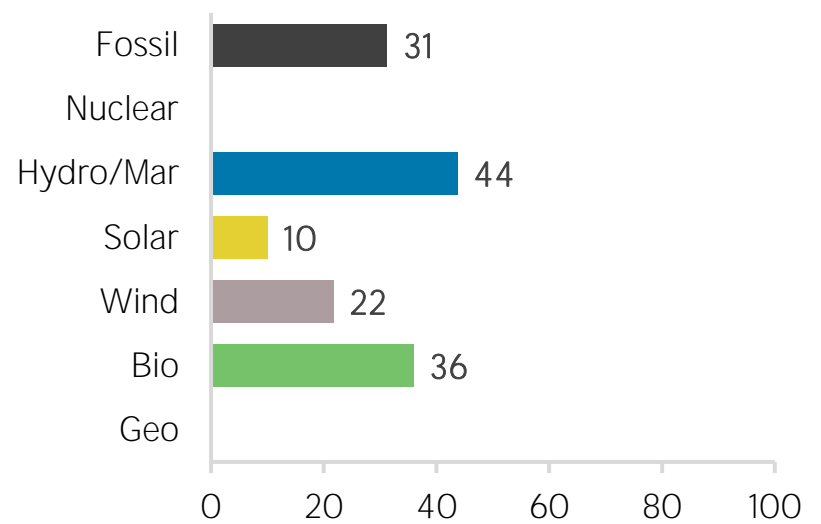
Renewable capacity in 2020



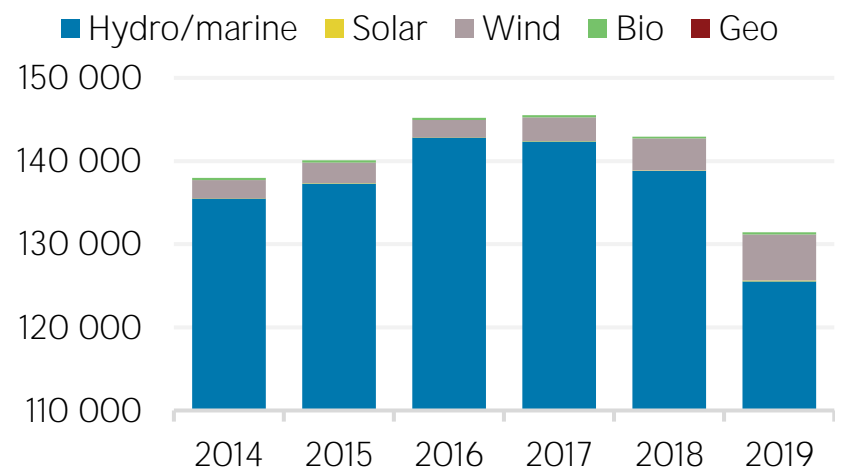
Net capacity change (MW)



Capacity utilisation in 2019 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

| | year | target |
|----------------------------------|-------------|---------------|
| Renewable energy: | 2020 | 67.5 % |
| Renewable electricity: | 2020 | 114 % |
| Renewable capacity: | | |
| Renewable transport: | 2020 | 10 % |
| Liquid Biofuel blending mandate: | | |
| Other transport targets: | | |
| Renewable heating/cooling: | 2020 | 43.2 % |
| Renewable Hydropower | | |
| Off-grid renewable technologies: | | |
| Energy efficiency (Energy): | | |
| Energy efficiency (Electricity): | | |

Latest policies, programmes and legislation

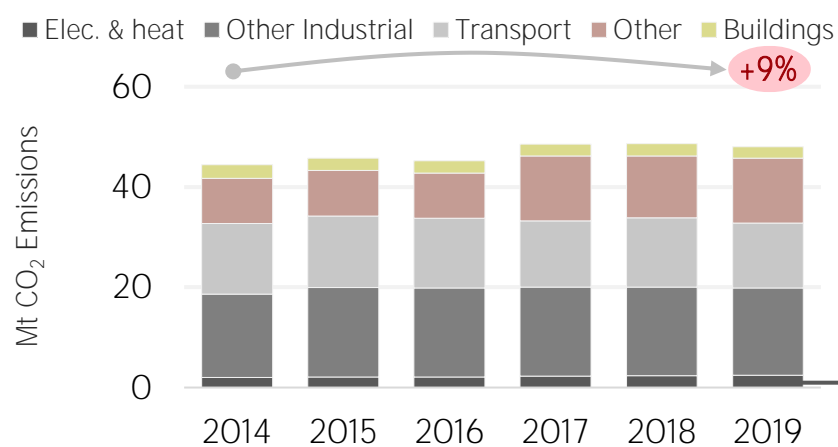
| | |
|--|------|
| 1 CCS Project 'Longship' | 2021 |
| 2 Green Conversion Package - Green Research Platform | 2021 |
| 3 National budget 2021 - Research on hydrogen | 2021 |
| 4 NorthWind Research Centre launch | 2021 |
| 5 VAT exemption for electric cars | 2021 |

References to sustainable energy in Nationally Determined Contribution (NDC)

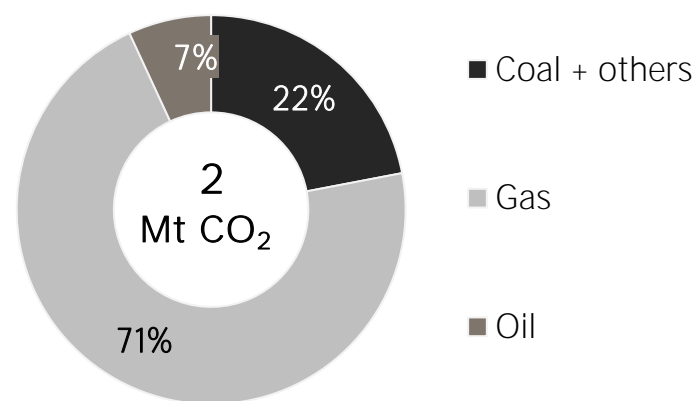
| | Conditional | Unconditional | unit |
|---------------------------|-------------|---------------|------|
| - Renewable energy | | | |
| - electricity | | | |
| - transport | | | |
| - heating/cooling | | | |
| - Energy efficiency | | | |

ENERGY AND EMISSIONS

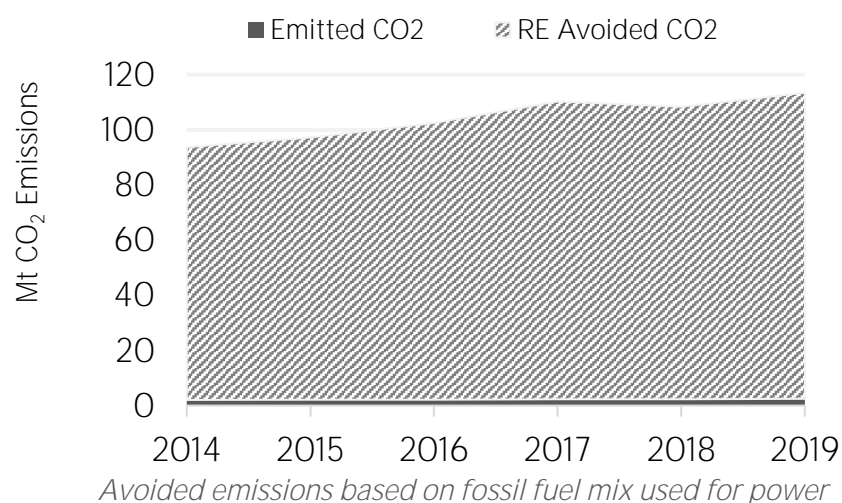
Energy-related CO₂ emissions by sector



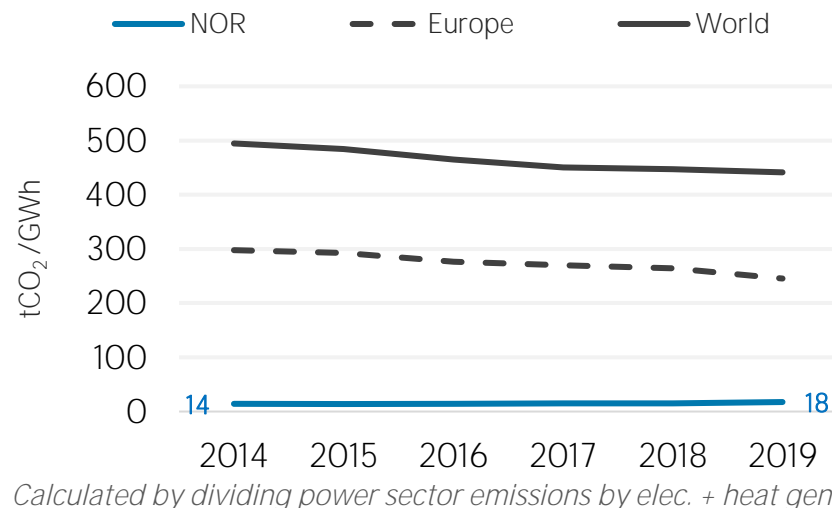
Elec. & heat generation CO₂ emissions in 2019



Avoided emissions from renewable elec. & heat

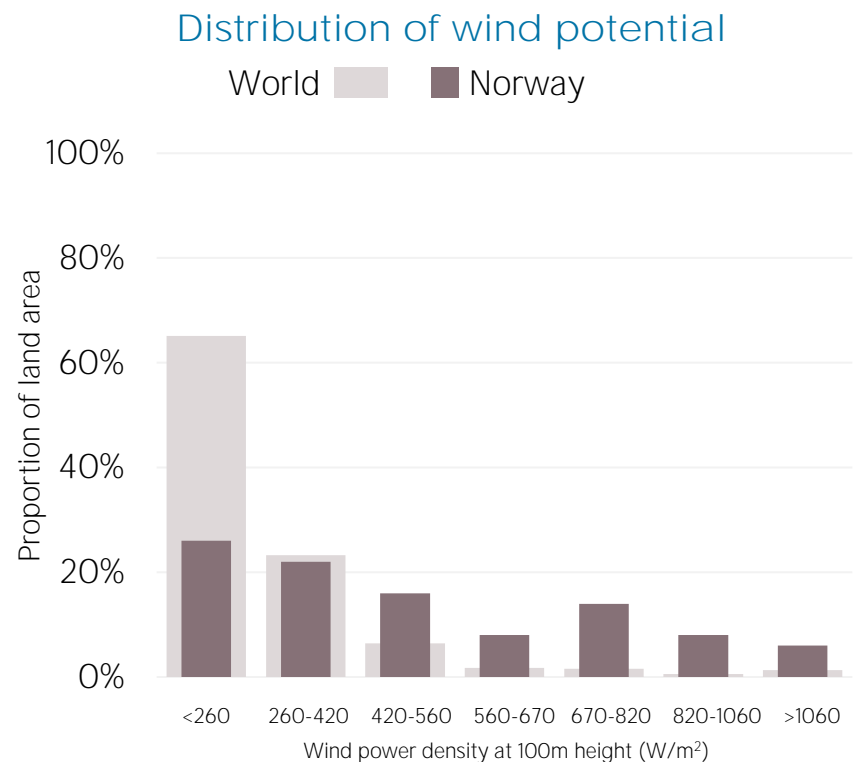
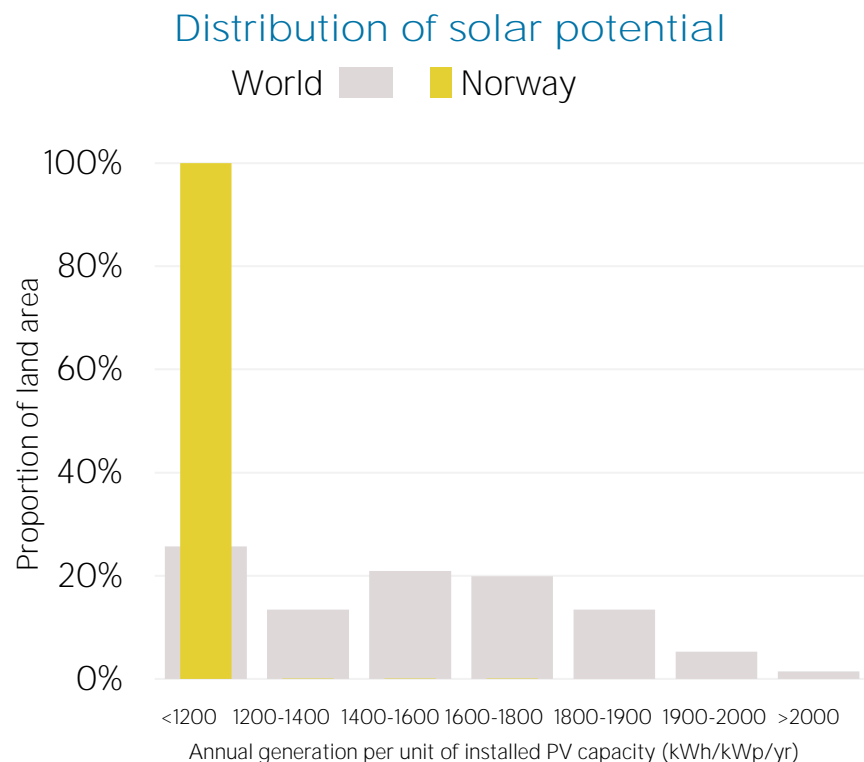


CO₂ emission factor for elec. & heat generation

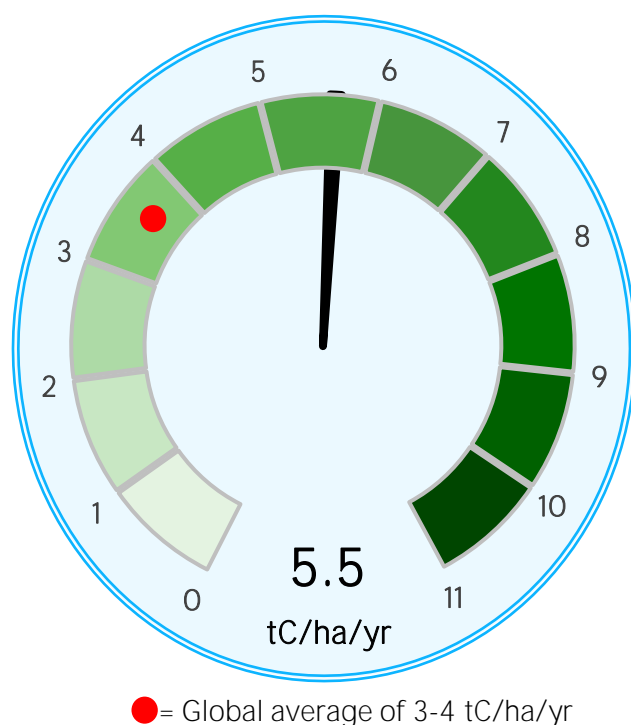


Calculated by dividing power sector emissions by elec. + heat gen.

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.

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 per year.

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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