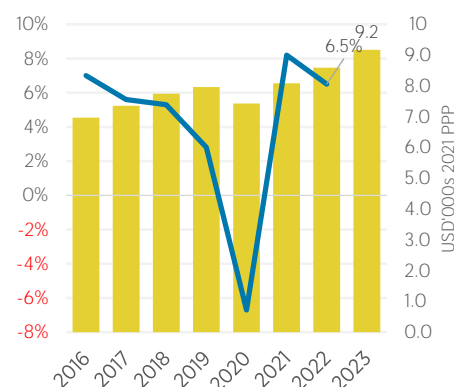
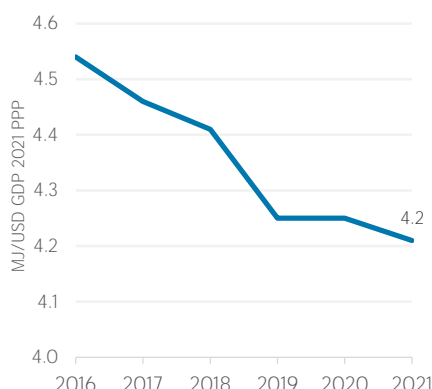
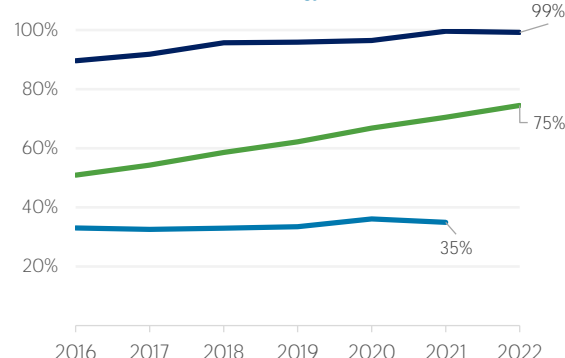


## COUNTRY INDICATORS AND SDGs

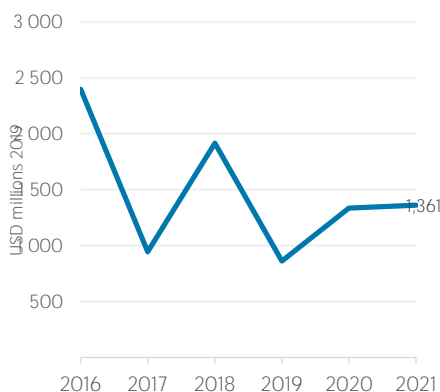
GDP per capita — 8.1.1 Real GDP growth rate



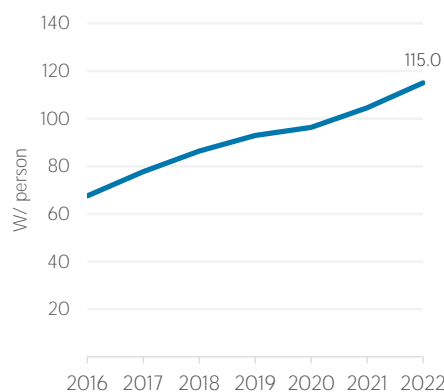
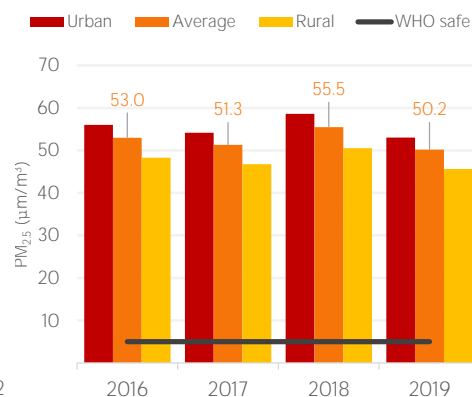
7.3.1 Energy intensity


 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

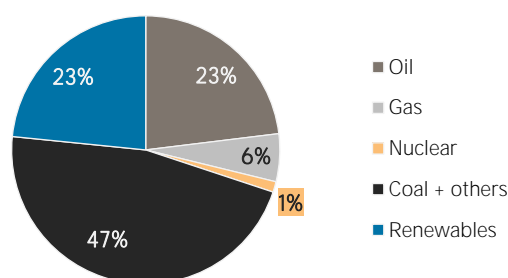
11.6.2 Air particulate matter (PM<sub>2.5</sub>)

## TOTAL ENERGY SUPPLY (TES)

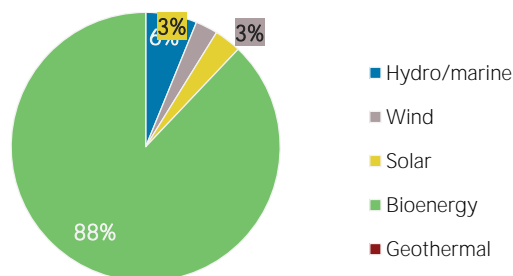
Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	28 125 028	30 679 825
Renewable (TJ)	7 950 081	9 374 221
Total (TJ)	36 075 109	40 054 045
Renewable share (%)	22	23

Growth in TES	2016-21	2020-21
Non-renewable (%)	+9.1	+5.5
Renewable (%)	+17.9	+3.3
Total (%)	+11.0	+5.0

Total energy supply in 2021



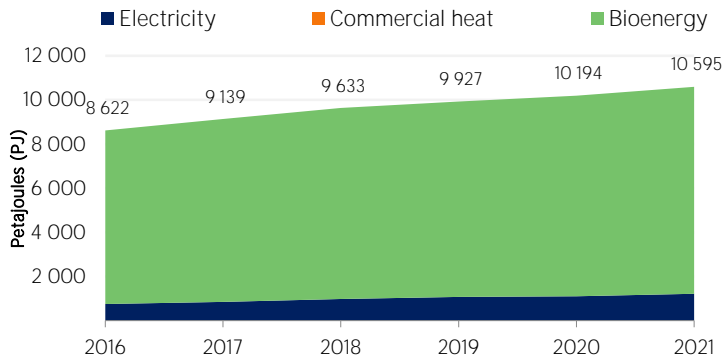
Renewable energy supply in 2021



Primary energy trade	2016	2021
Imports (TJ)	16 514 222	17 308 398
Exports (TJ)	2 868 701	2 898 887
Net trade (TJ)	-13 645 521	-14 409 511
Imports (% of supply)	46	43
Exports (% of production)	13	12
Energy self-sufficiency (%)	62	63

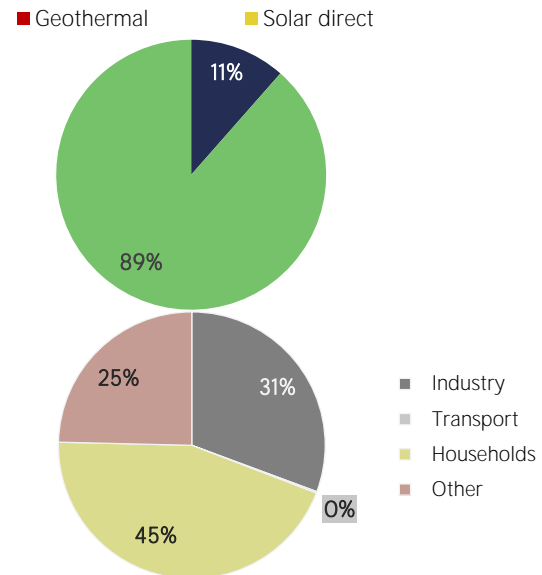
## RENEWABLE ENERGY CONSUMPTION (TFEC)

### Renewable TFEC trend



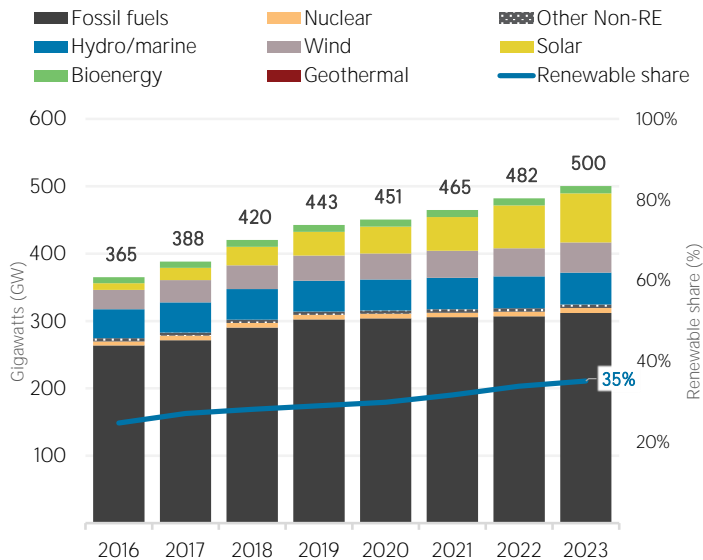
Consumption by sector	2016	2021
Industry (TJ)	2 450 242	3 247 032
Transport (TJ)	12 141	19 978
Households (TJ)	4 375 308	4 719 004
Other (TJ)	1 784 552	2 608 543

### Renewable energy consumption in 2021

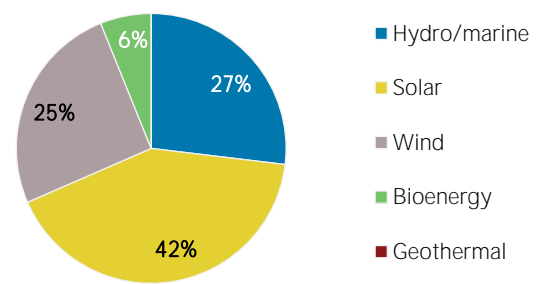


## ELECTRICITY CAPACITY

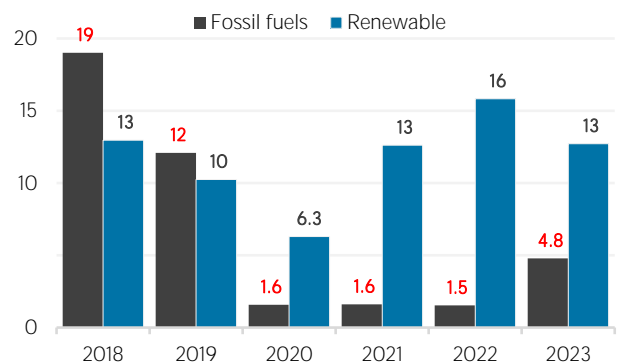
### Installed capacity trend



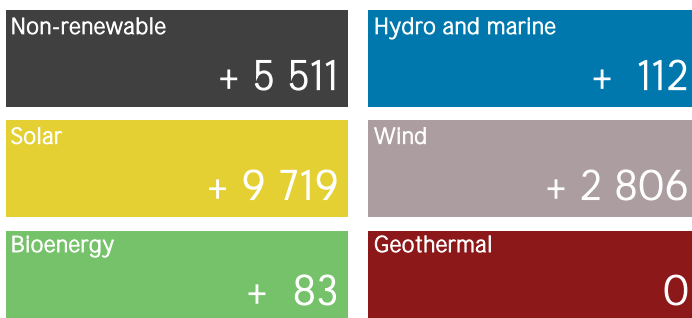
### Renewable capacity in 2023



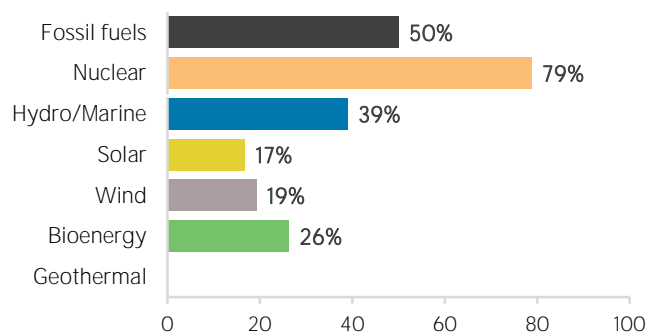
### Net capacity change (GW)



### Net capacity change in 2023 (MW)



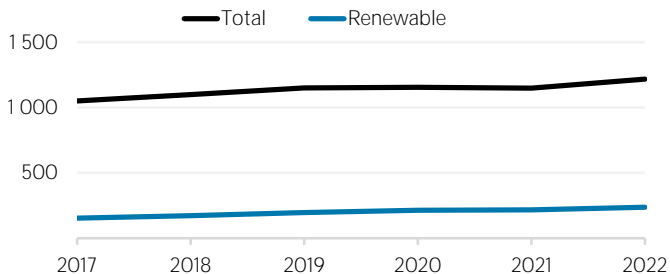
### Capacity utilisation in 2022 (%)



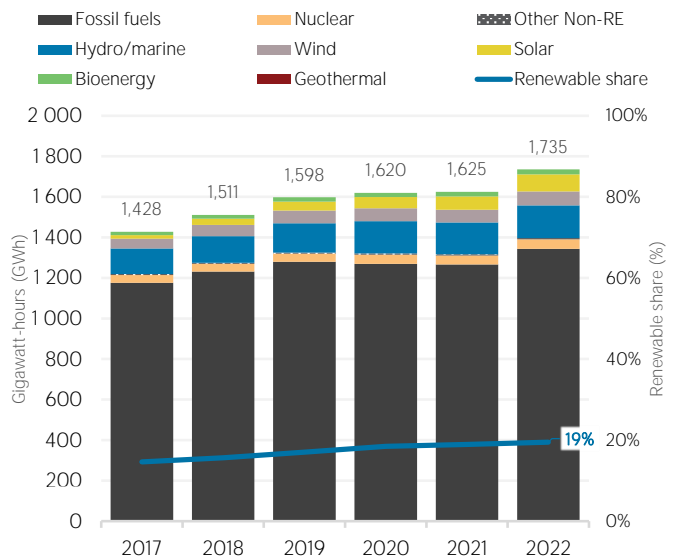
## ELECTRICITY GENERATION

Generation in 2022	GWh	%
Non-renewable	1 397 129	81
Renewable	338 189	19
Hydro and marine	160 573	9
Solar	83 632	5
Wind	69 434	4
Bioenergy	24 551	1
Geothermal	0	0
<b>Total</b>	<b>1 735 318</b>	<b>100</b>

Per capita electricity generation (kWh)



Electricity generation trend

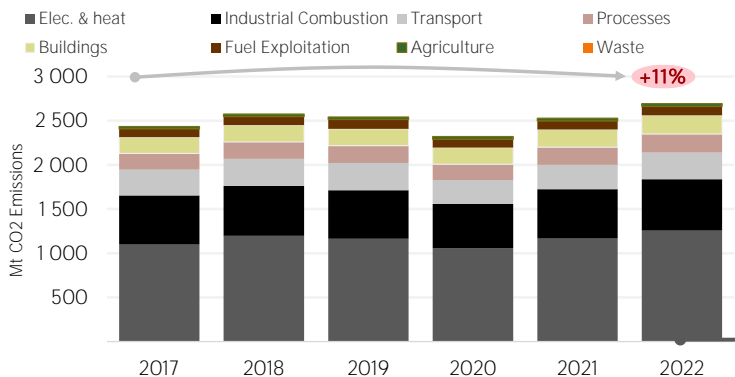


## LATEST POLICIES, PROGRAMMES AND LEGISLATION

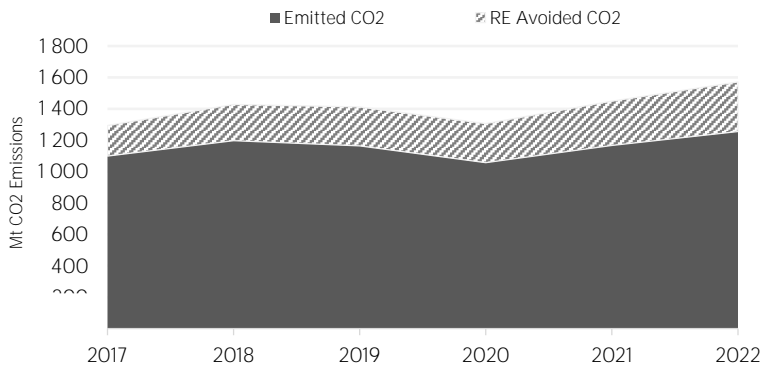
- 1 Mines and Minerals (Development & Regulation) Amendment Act, 2023 2023
- 2 National Green Hydrogen Mission 2023
- 3 Quad Statement of Principles on Clean Energy Supply Chains in the Indo-Pacific 2023
- 4 Revised Domestic Gas Pricing 2023
- 5 2022 Expansion of fertiliser subsidy 2022

## ENERGY AND EMISSIONS

CO<sub>2</sub> emissions by sector

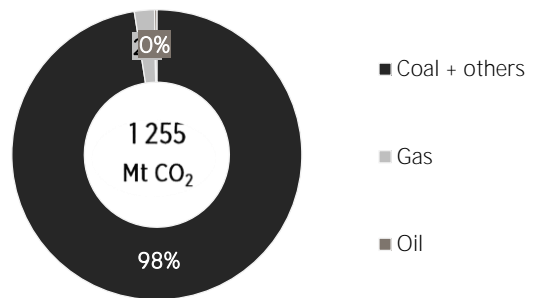


Avoided emissions from renewable elec. & heat

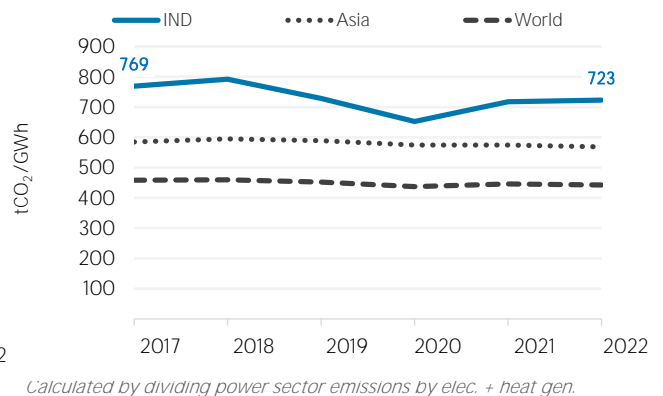


Avoided emissions based on fossil fuel mix used for power

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

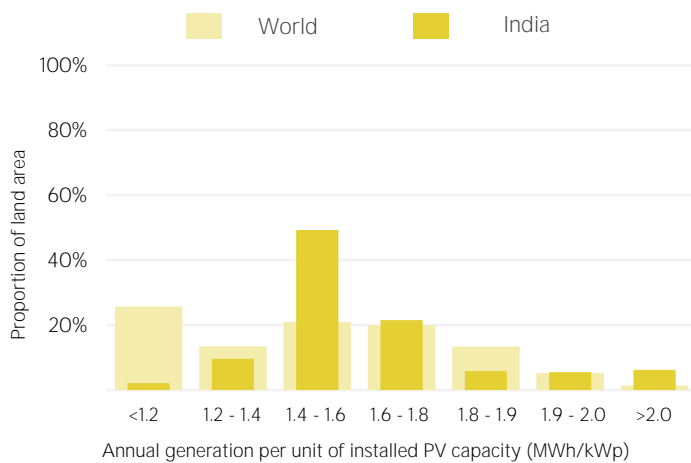


CO<sub>2</sub> emission factor for elec. & heat generation

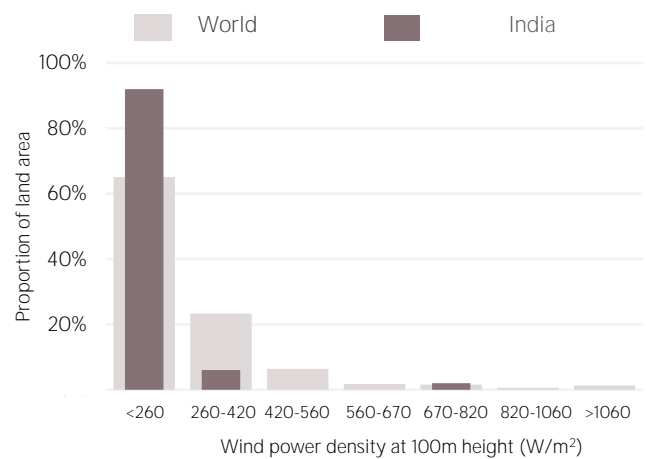


Calculated by dividing power sector emissions by elec. + heat gen.

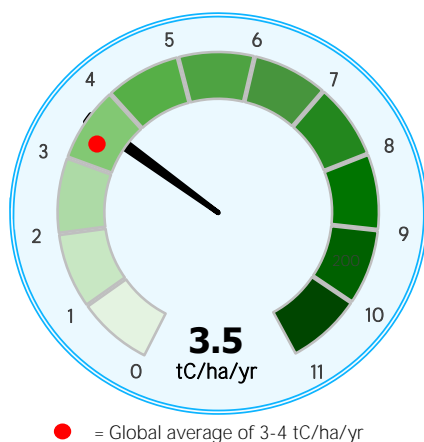
### Distribution of solar potential



### 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 ( $W/m^2$ ) 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).

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