

SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2018)

Renewable energy (% of TFEC)	13.1	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	6.3	Access to clean cooking (% of population)	64
Public flows renewables (2018 USD M)	325.5	Per capita renewable capacity (W/person)	487.157

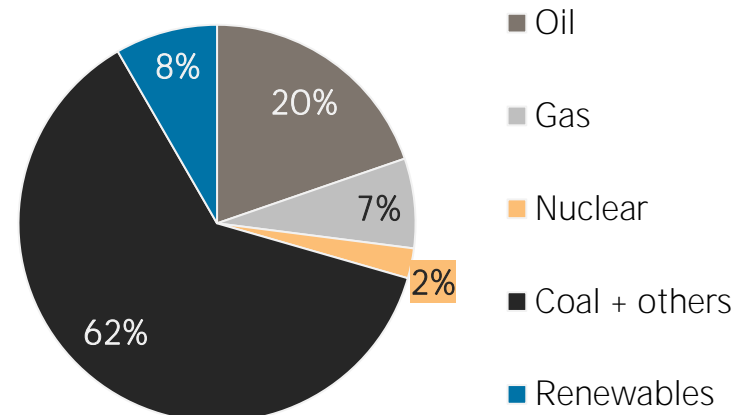
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2013	2018
Non-renewable (TJ)	110 808 173	119 381 082
Renewable (TJ)	8 213 984	10 855 741
Total (TJ)	119 022 156	130 236 823
Renewable share (%)	7	8

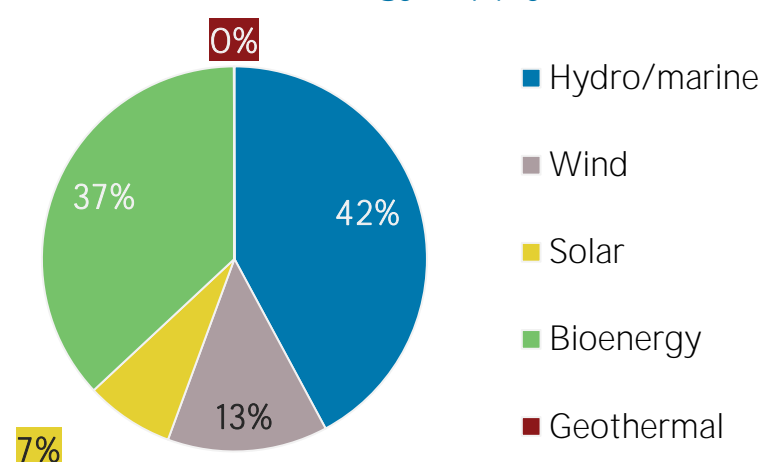
Growth in TPES	2013-18	2017-18
Non-renewable (%)	+7.7	+4.8
Renewable (%)	+32.2	+6.1
Total (%)	+9.4	+4.9

Primary energy trade	2013	2018
Imports (TJ)	21 366 378	31 447 980
Exports (TJ)	1 884 116	3 387 369
Net trade (TJ)	-19 482 262	-28 060 611
Imports (% of supply)	18	24
Exports (% of production)	2	3
Energy self-sufficiency (%)	86	80
Net trade (USD million)	- 281 433	- 301 152
Net trade (% of GDP)	-2.9	-2.2

Total primary energy supply in 2018



Renewable energy supply in 2018



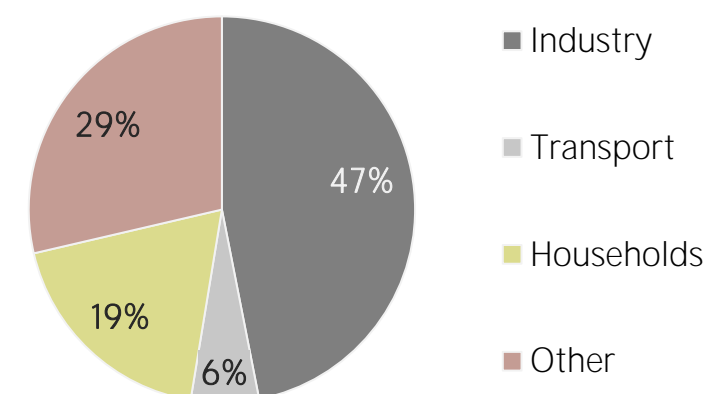
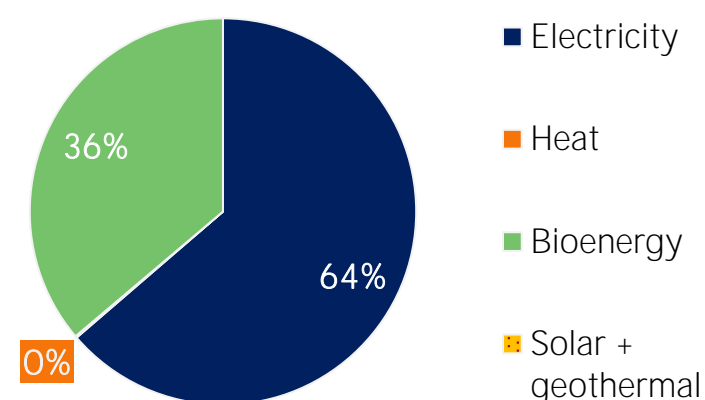
RENEWABLE ENERGY CONSUMPTION

Consumption by source	2013	2018
Electricity (TJ)	3 800 068	6 045 640
Heat (TJ)	9 934	14 107
Bioenergy (TJ)	3 442 117	3 433 791
Solar + geothermal (TJ)	0	0
Total (TJ)	7 252 120	9 493 538
Electricity share (%)	52	64

Consumption growth	2013-18	2017-18
Renewable electricity (%)	+59.1	+10.8
Other renewables (%)	-0.1	+1.2
Total (%)	+30.9	+7.1

Consumption by sector	2013	2018
Industry (TJ)	3 406 676	4 453 654
Transport (TJ)	362 252	539 608
Households (TJ)	1 135 797	1 781 540
Other (TJ)	2 347 395	2 718 736
Renewable share of TFEC	11.5	13.1

Renewable energy consumption in 2018

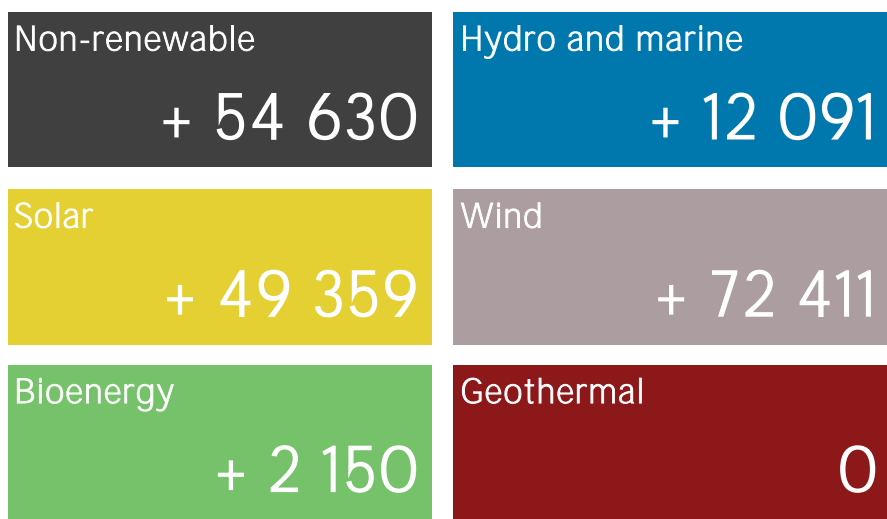


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2020	MW	%
Non-renewable	1 306 693	59
Renewable	894 879	41
Hydro/marine	339 845	15
Solar	254 355	12
Wind	281 993	13
Bioenergy	18 687	1
Geothermal	0	0
Total	2 201 572	100

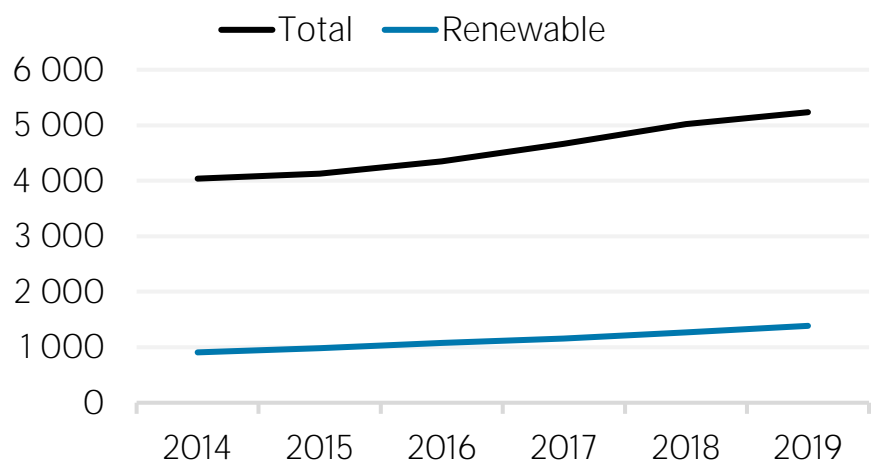
Capacity change (%)	2015-20	2019-20
Non-renewable	+ 27	+ 4.4
Renewable	+ 87	+ 17.9
Hydro/marine	+ 15	+ 3.7
Solar	+ 484	+ 24.1
Wind	+ 115	+ 34.6
Bioenergy	+ 134	+ 13.0
Geothermal	- 100	0.0
Total	+ 46	+ 9.5

Net capacity change in 2020 (MW)

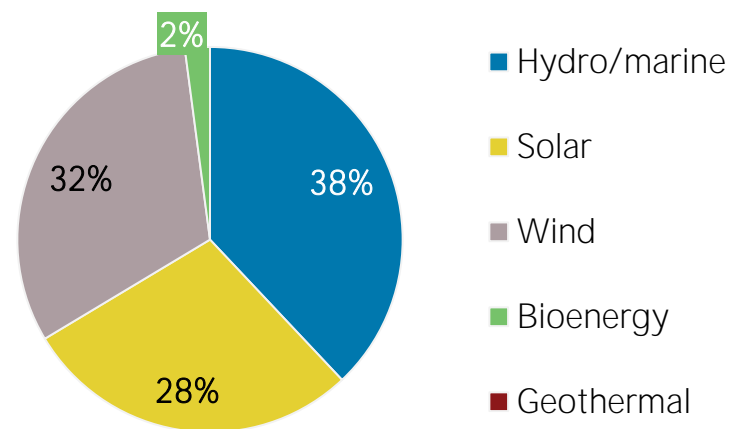


Generation in 2019	GWh	%
Non-renewable	5 518 446	74
Renewable	1 986 041	26
Hydro and marine	1 272 547	17
Solar	224 541	3
Wind	406 560	5
Bioenergy	82 250	1
Geothermal	144	0
Total	7 504 487	100

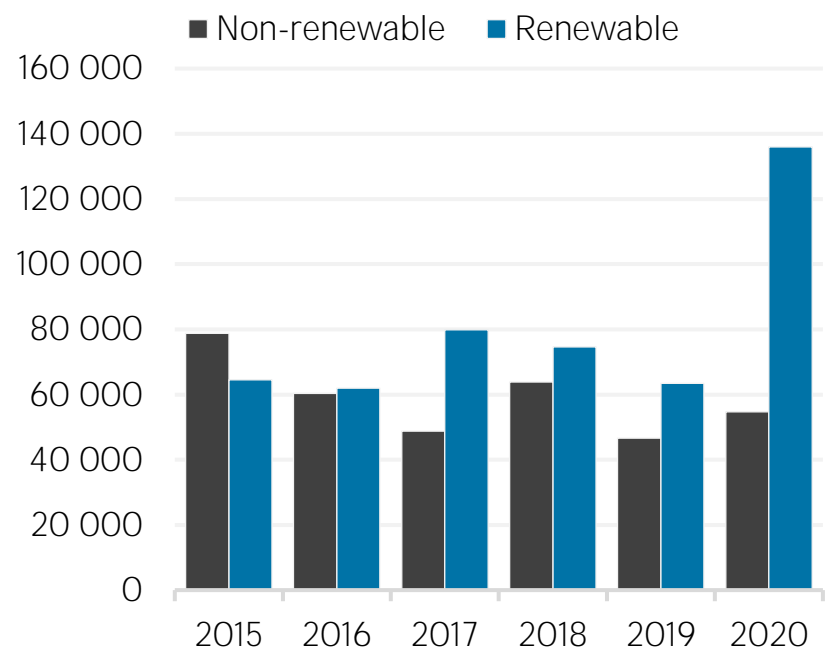
Per capita electricity generation (kWh)



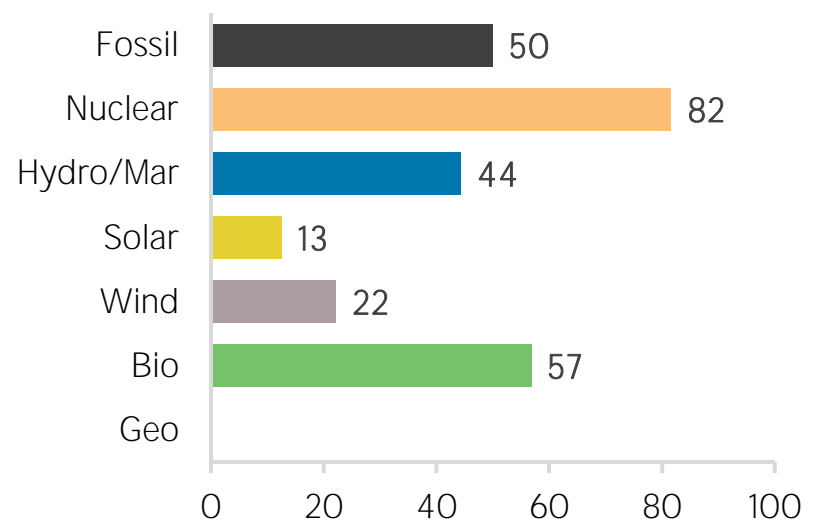
Renewable capacity in 2020



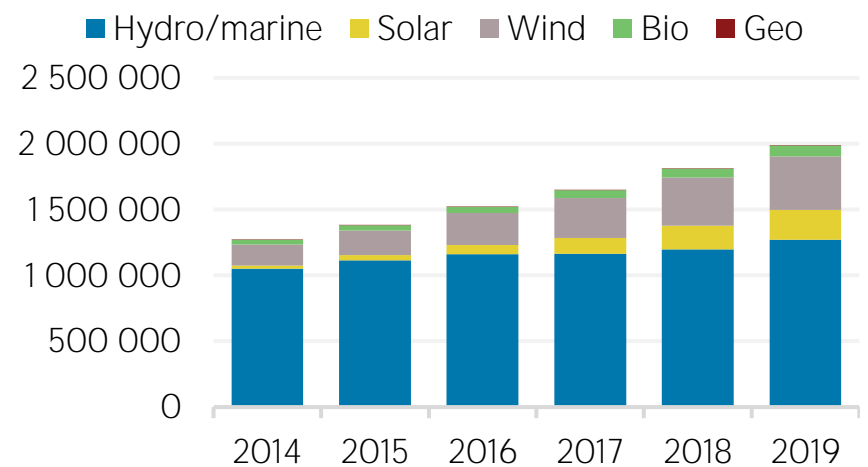
Net capacity change (MW)



Capacity utilisation in 2019 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target
Renewable energy:		
Renewable electricity:	2020	27 %
Renewable capacity:		
Renewable transport:		
Liquid Biofuel blending mandate:		
Other transport targets:		
Renewable heating/cooling:		
Renewable Hydropower	2030	5 %
Off-grid renewable technologies:		
Energy efficiency (Energy):		
Energy efficiency (Electricity):		

Latest policies, programmes and legislation

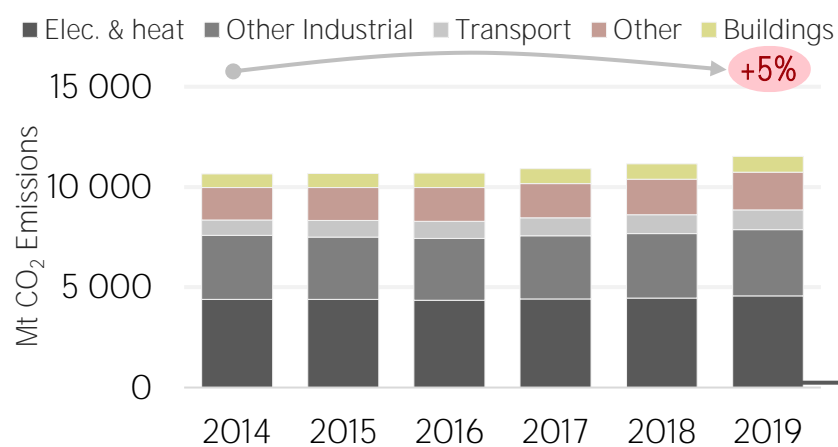
1	Government Work Report: 13th National People's Congress - Development of transportation project	2021
2	Interim rules for carbon emissions trading	2021
3	New Energy Automobile Industry Development Plan (2021-2035)	2021
4	Adjusting and Improving Subsidy Policies for New Energy Vehicles	2020
5	Carbon neutrality target before 2060	2020

References to sustainable energy in Nationally Determined Contribution (NDC)

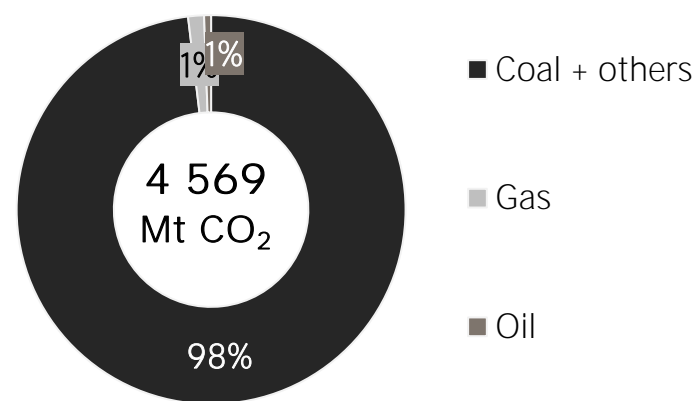
	Conditional	Unconditional	unit
- Renewable energy			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

ENERGY AND EMISSIONS

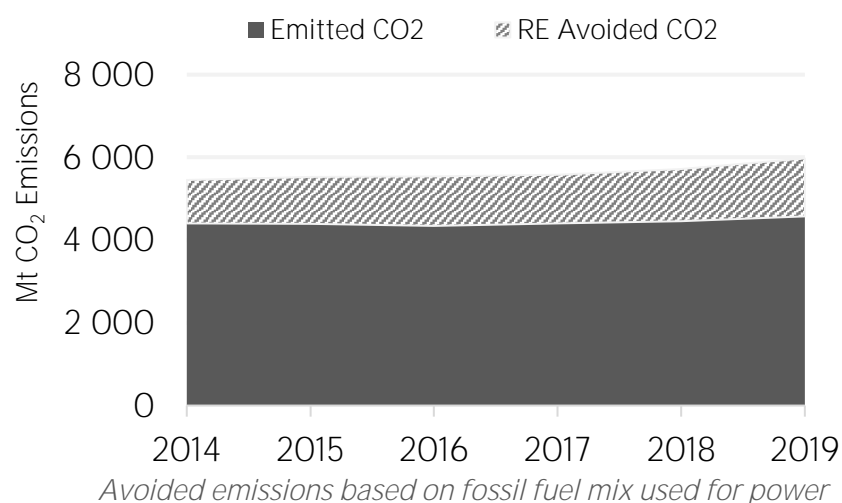
Energy-related CO₂ emissions by sector



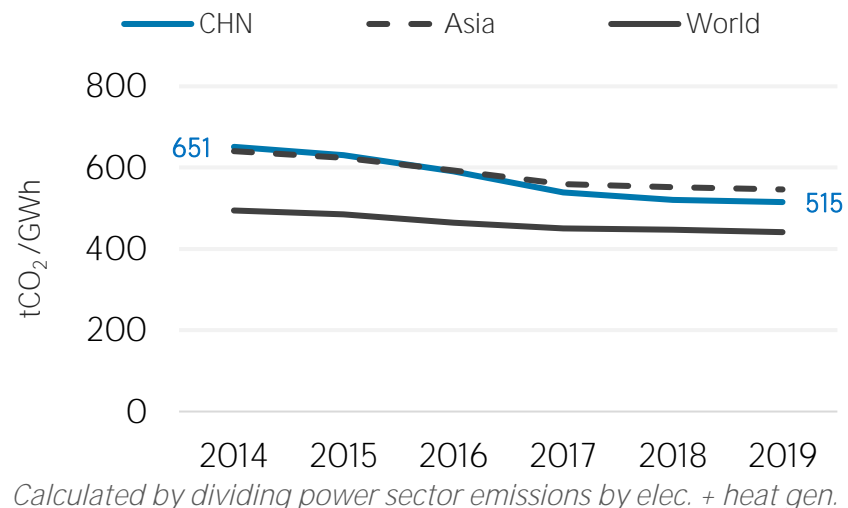
Elec. & heat generation CO₂ emissions in 2019



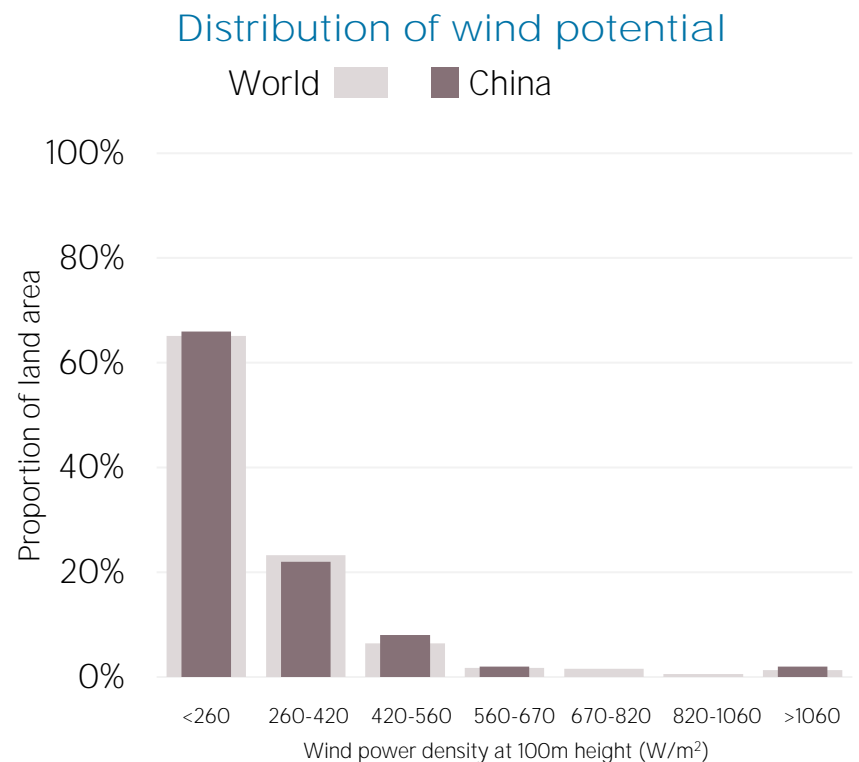
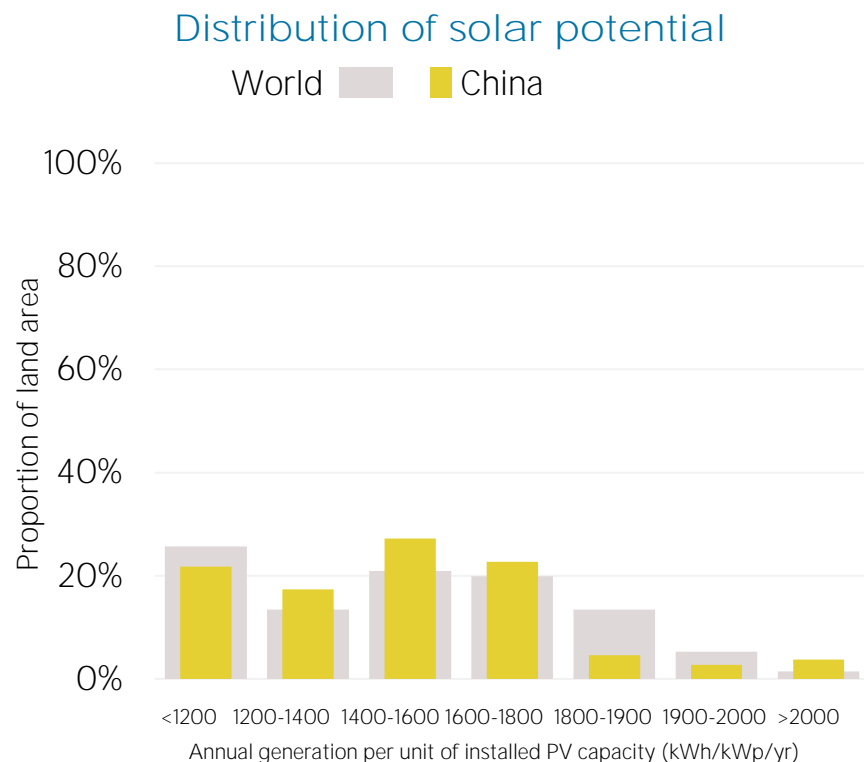
Avoided emissions from renewable elec. & heat



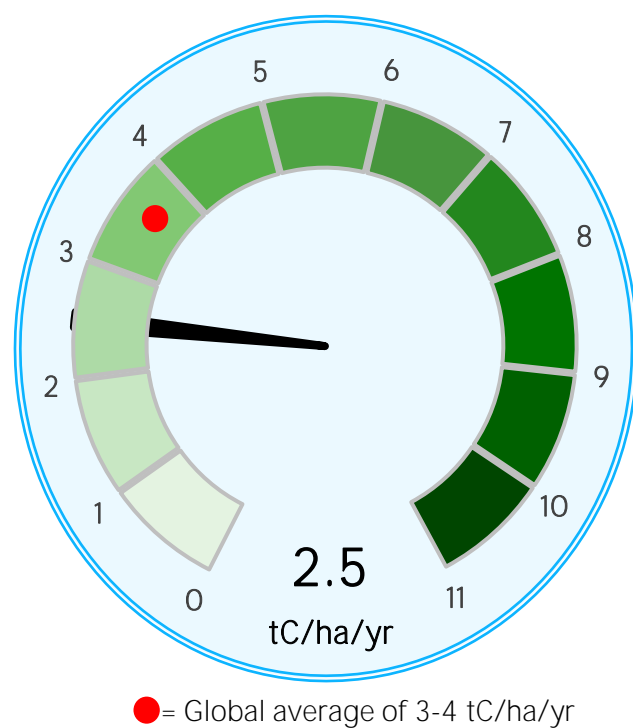
CO₂ emission factor for elec. & heat generation



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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