

## SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2018)

Renewable energy (% of TFEC)	51.4	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	1.8	Access to clean cooking (% of population)	30
Public flows renewables (2018 USD M)	206.1	Per capita renewable capacity (W/person)	101.879

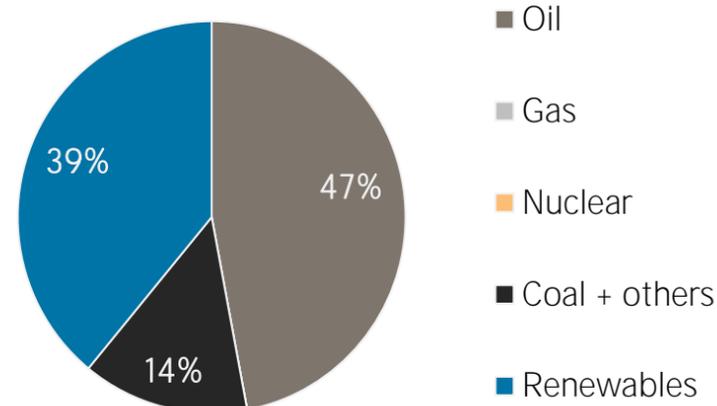
## TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2013	2018
Non-renewable (TJ)	196 161	267 891
Renewable (TJ)	181 922	171 526
Total (TJ)	378 083	439 417
Renewable share (%)	48	39

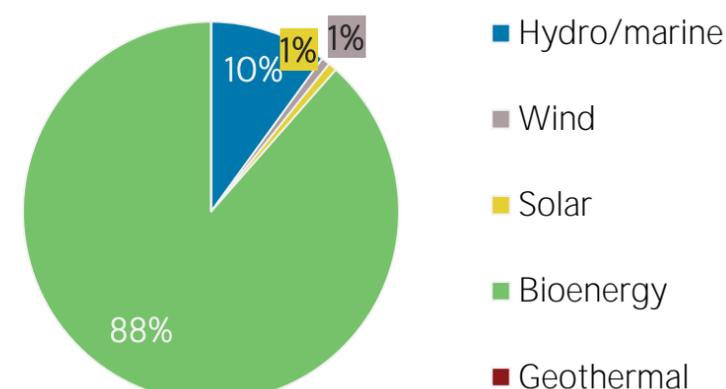
Growth in TPES	2013-18	2017-18
Non-renewable (%)	+36.6	-8.7
Renewable (%)	-5.7	-2.6
Total (%)	+16.2	-6.4

Primary energy trade	2013	2018
Imports (TJ)	220 040	317 060
Exports (TJ)	5 755	3 943
Net trade (TJ)	- 214 285	- 313 117
Imports (% of supply)	58	72
Exports (% of production)	3	2
Energy self-sufficiency (%)	48	39
Net trade (USD million)	- 4 168	n.a.
Net trade (% of GDP)	-5.6	n.a.

## Total primary energy supply in 2018



## Renewable energy supply in 2018



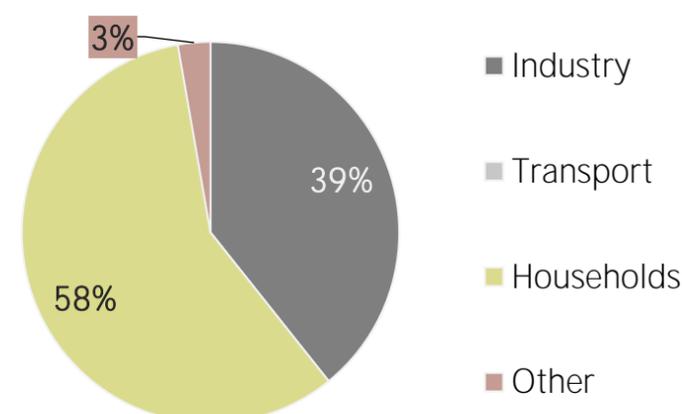
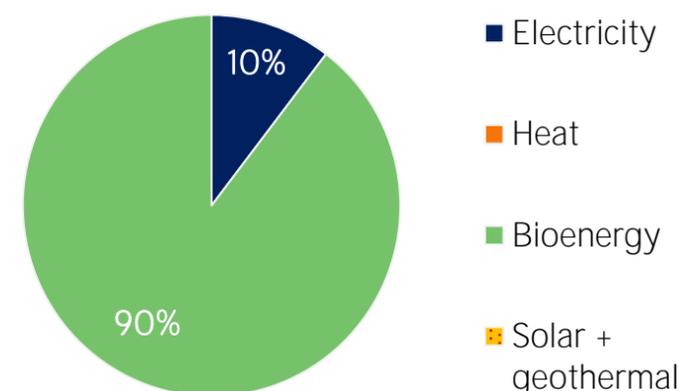
## RENEWABLE ENERGY CONSUMPTION

Consumption by source	2013	2018
Electricity (TJ)	20 603	17 248
Heat (TJ)	0	0
Bioenergy (TJ)	158 001	148 885
Solar + geothermal (TJ)	0	0
<b>Total (TJ)</b>	<b>178 604</b>	<b>166 133</b>
Electricity share (%)	12	10

Consumption growth	2013-18	2017-18
Renewable electricity (%)	-16.3	-25.0
Other renewables (%)	-5.8	-0.9
<b>Total (%)</b>	<b>-7.0</b>	<b>-4.1</b>

Consumption by sector	2013	2018
Industry (TJ)	60 637	65 177
Transport (TJ)	0	0
Households (TJ)	112 206	96 340
Other (TJ)	5 761	4 616
Renewable share of TFEC	59.9	51.4

## Renewable energy consumption in 2018

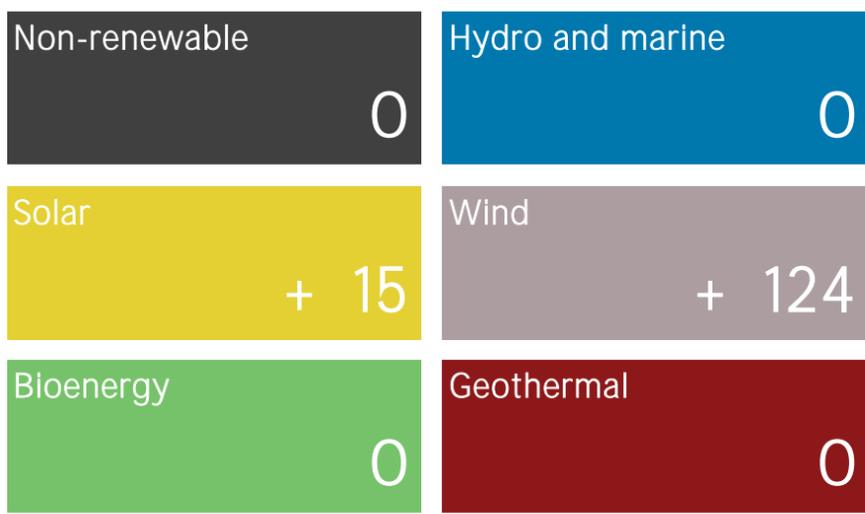


# ELECTRICITY CAPACITY AND GENERATION

Capacity in 2020	MW	%
Non-renewable	2 182	48
Renewable	2 352	52
Hydro/marine	1 815	40
Solar	230	5
Wind	252	6
Bioenergy	54	1
Geothermal	0	0
<b>Total</b>	<b>4 534</b>	<b>100</b>

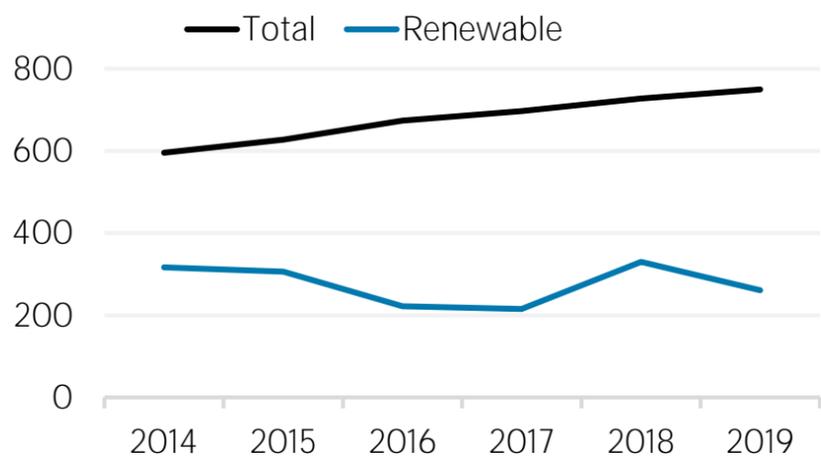
Capacity change (%)	2015-20	2019-20
Non-renewable	+ 5	0.0
Renewable	+ 25	+ 6.3
Hydro/marine	+ 7	0.0
Solar	+ 639	+ 7.2
Wind	+ 92	+ 96.1
Bioenergy	+ 108	0.0
Geothermal	0	0.0
<b>Total</b>	<b>+ 14</b>	<b>+ 3.2</b>

## Net capacity change in 2020 (MW)

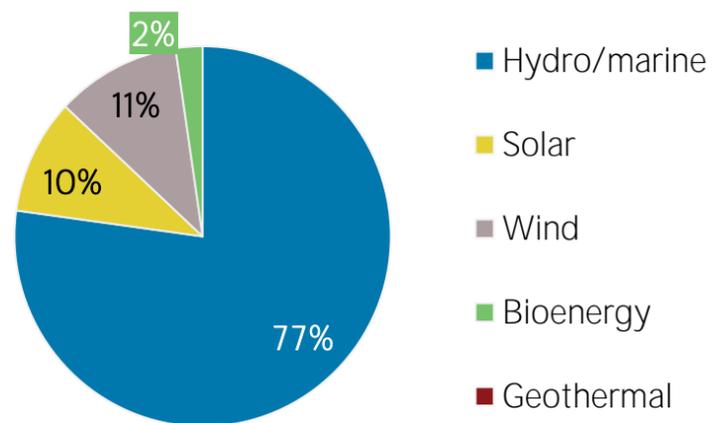


Generation in 2019	GWh	%
Non-renewable	10 415	65
Renewable	5 564	35
Hydro and marine	4 802	30
Solar	357	2
Wind	348	2
Bioenergy	57	0
Geothermal	0	0
<b>Total</b>	<b>15 979</b>	<b>100</b>

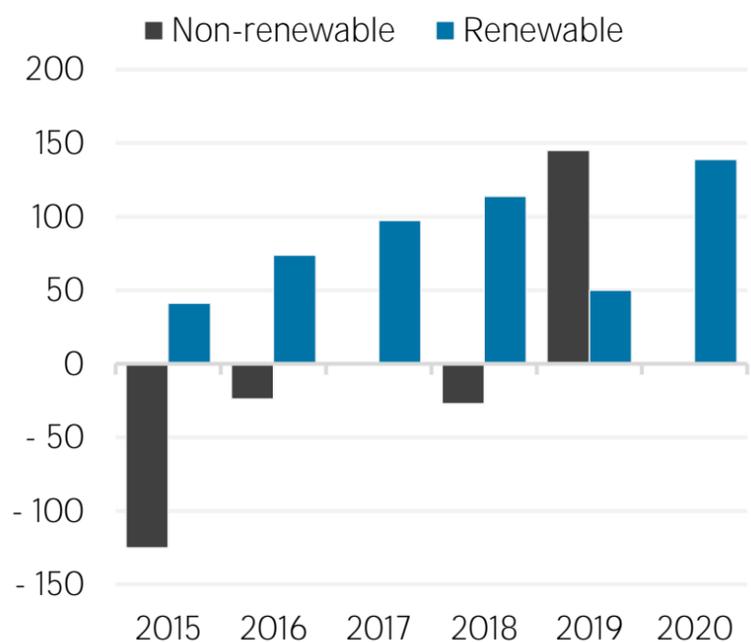
## Per capita electricity generation (kWh)



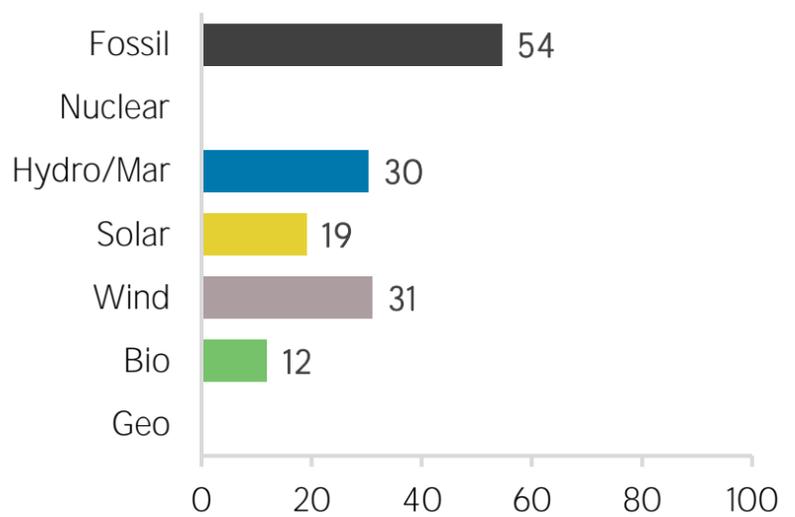
## Renewable capacity in 2020



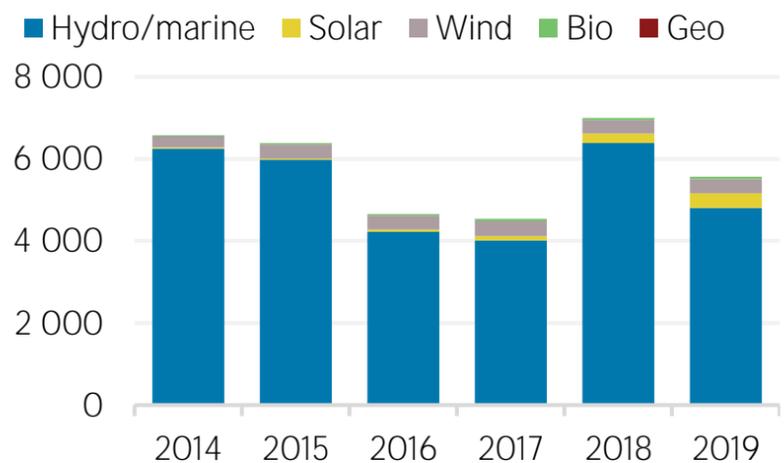
## Net capacity change (MW)



## Capacity utilisation in 2019 (%)



## Renewable generation (GWh)



## TARGETS, POLICIES AND MEASURES

### Most immediate clean energy targets & NDCs

	year	target
<b>Renewable energy:</b>	<b>2050</b>	<b>100 %</b>
Renewable electricity:	2020	60 %
Renewable capacity:		
Renewable transport:		
Liquid Biofuel blending mandate:		
Other transport targets:		
Renewable heating/cooling:		
Renewable Hydropower		
Off-grid renewable technologies:		
Energy efficiency (Energy):		
Energy efficiency (Electricity):		

### Latest policies, programmes and legislation

1 Energy Performance Standards of Appliances (Ceiling Fans) Regulations No. 1 of 2012

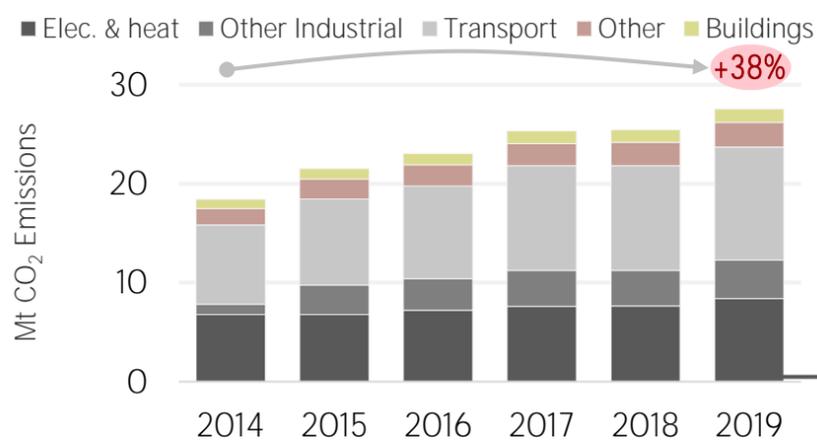
2013

### References to sustainable energy in Nationally Determined Contribution (NDC)

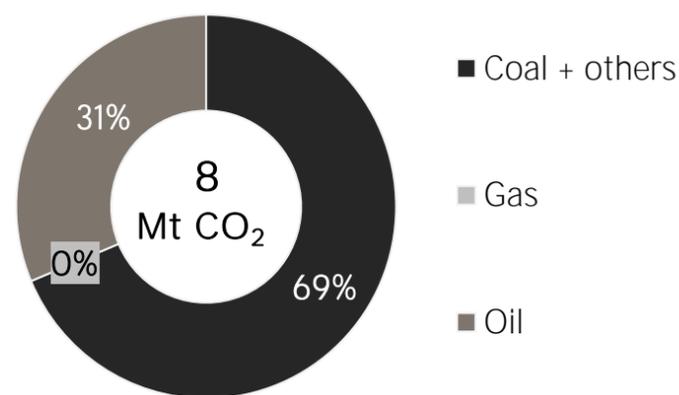
	Conditional	Unconditional	unit
- <b>Renewable energy</b>			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

## ENERGY AND EMISSIONS

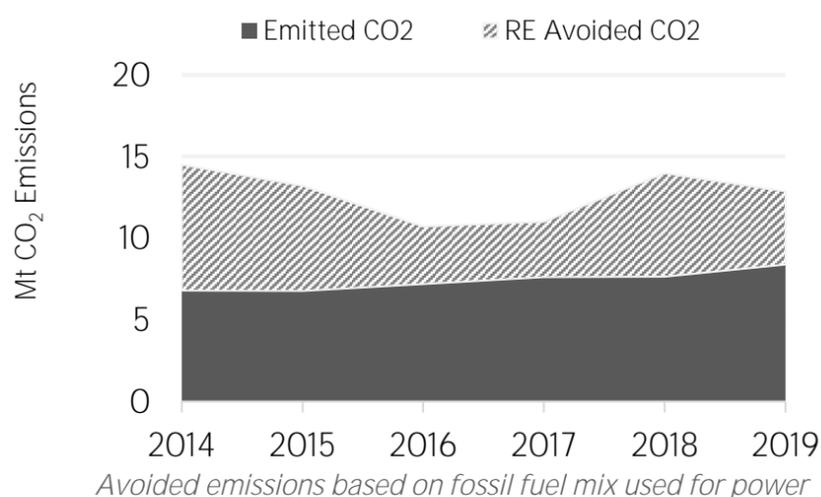
Energy-related CO<sub>2</sub> emissions by sector



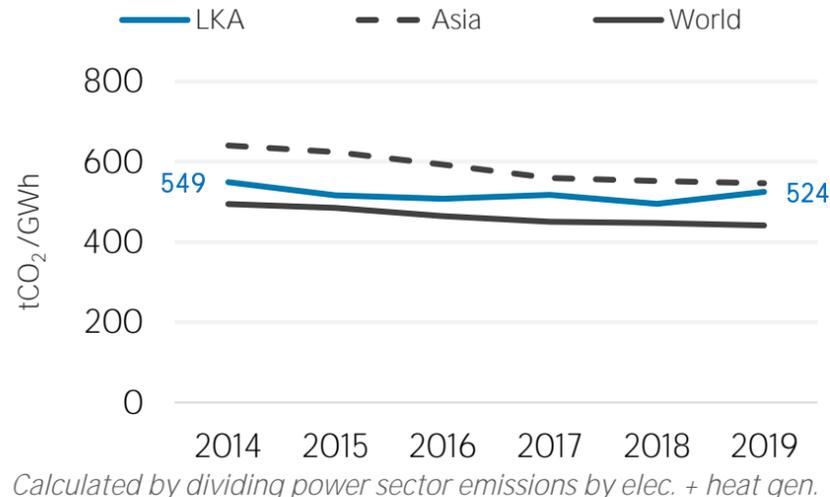
Elec. & heat generation CO<sub>2</sub> emissions in 2019



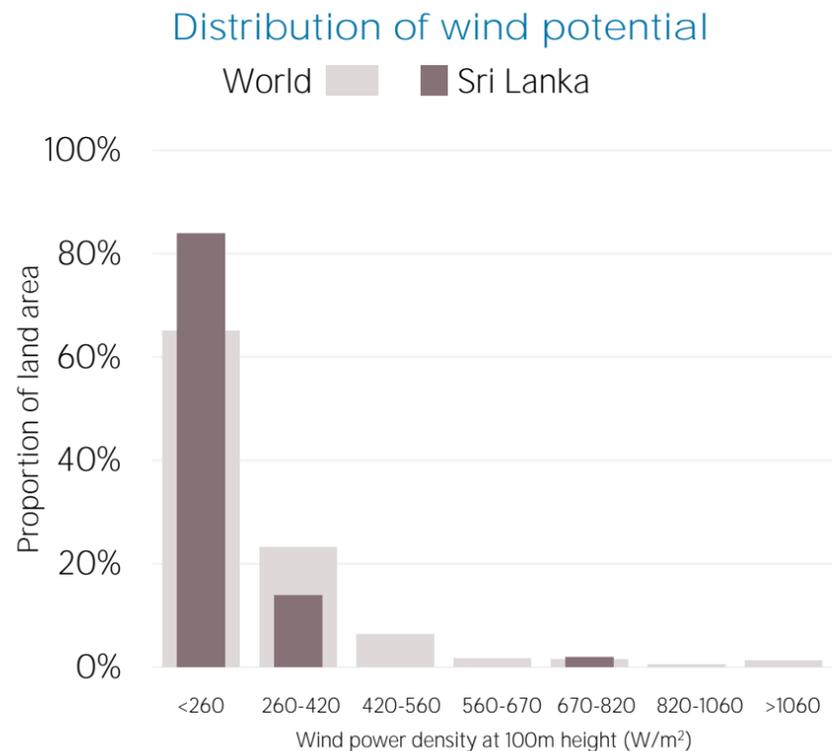
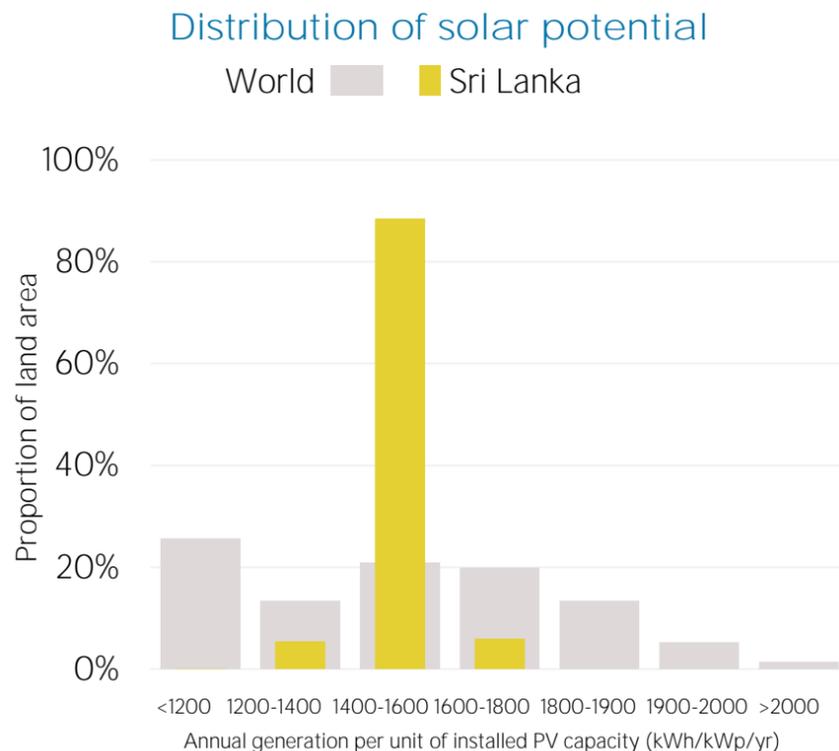
Avoided emissions from renewable elec. & heat



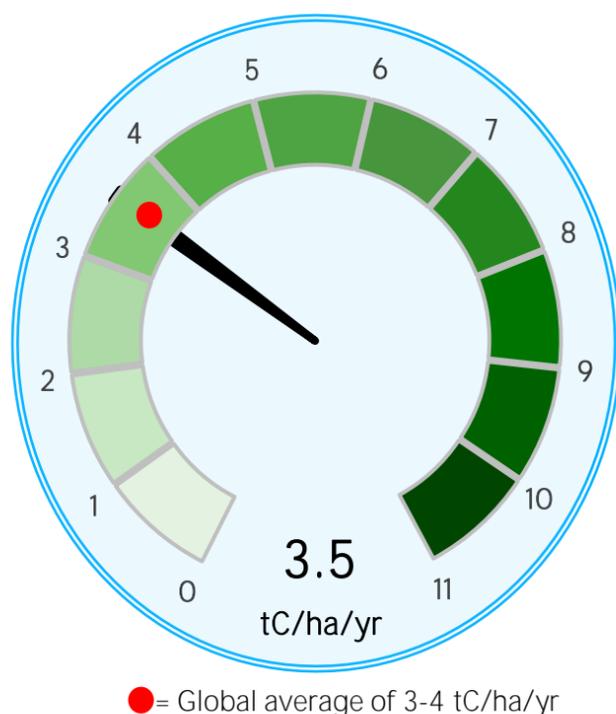
CO<sub>2</sub> emission factor for elec. & heat generation



## 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/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 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](mailto:statistics@irena.org).

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