

## SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2017)

Renewable energy (% of TFEC)	2.8	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	6.4	Access to clean cooking (% of population)	>95
Public flows renewables (2017 USD M)	n.a.	Per capita renewable capacity (W/person)	206.2

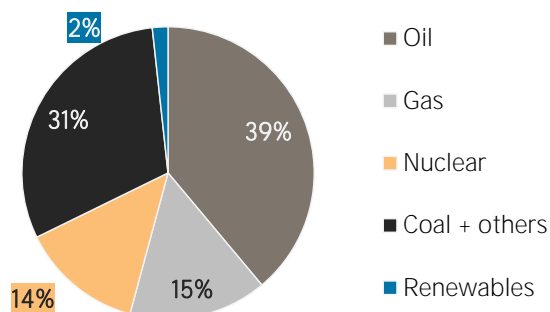
## TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2012	2017
Non-renewable (TJ)	10 895 122	11 625 197
Renewable (TJ)	99 292	204 172
<b>Total (TJ)</b>	<b>10 994 414</b>	<b>11 829 369</b>
Renewable share (%)	1	2

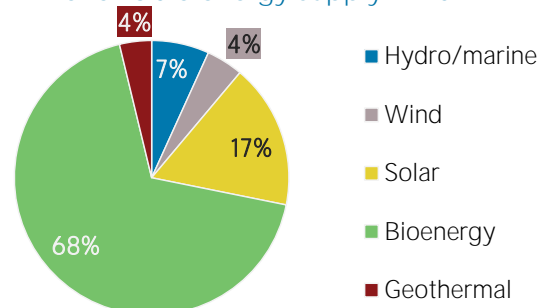
Growth in TPES	2012-17	2016-17
Non-renewable (%)	+6.7	+0.4
Renewable (%)	+105.6	+11.0
<b>Total (%)</b>	<b>+7.6</b>	<b>+0.5</b>

Primary energy trade	2012	2017
Imports (TJ)	12 002 031	13 252 324
Exports (TJ)	2 458 525	2 799 376
<b>Net trade (TJ)</b>	<b>-9 543 506</b>	<b>-10 452 948</b>
Imports (% of supply)	109	112
Exports (% of production)	129	137
Energy self-sufficiency (%)	17	17
Net trade (USD million)	- 128 698	- 73 553
Net trade (% of GDP)	-10.1	-4.5

## Total primary energy supply in 2017



## Renewable energy supply in 2017



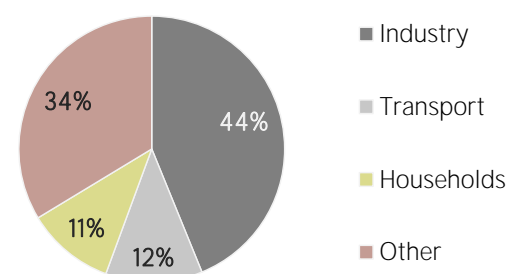
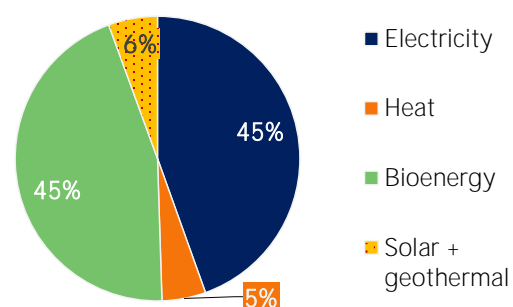
## RENEWABLE ENERGY CONSUMPTION

Consumption by source	2012	2017
Electricity (TJ)	28 658	74 868
Heat (TJ)	7 610	8 363
Bioenergy (TJ)	49 275	75 535
Solar + geothermal (TJ)	3 832	9 370
<b>Total (TJ)</b>	<b>89 374</b>	<b>168 136</b>
Electricity share (%)	32	45

Consumption growth	2012-17	2016-17
Renewable electricity (%)	+161.2	+23.8
Other renewables (%)	+53.6	+10.5
<b>Total (%)</b>	<b>+88.1</b>	<b>+16.0</b>

Consumption by sector	2012	2017
Industry (TJ)	37 530	73 701
Transport (TJ)	12 425	19 804
Households (TJ)	7 580	18 028
Other (TJ)	31 839	56 602
Renewable share of TFEC		2.8

## Renewable energy consumption in 2017

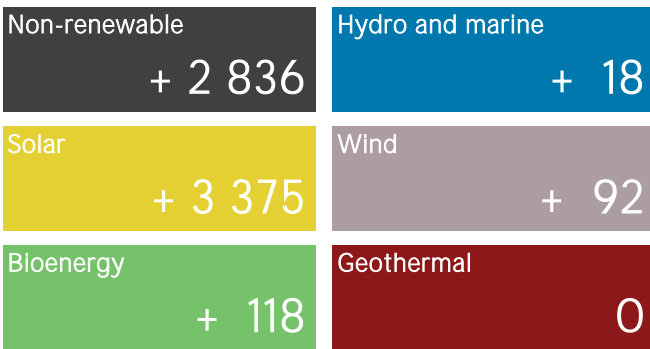


## ELECTRICITY CAPACITY AND GENERATION

Capacity in 2019	MW	%
<b>Non-renewable</b>	<b>117 217</b>	<b>88</b>
<b>Renewable</b>	<b>15 653</b>	<b>12</b>
Hydro/marine	2 064	2
Solar	10 505	8
Wind	1 512	1
Bioenergy	1 572	1
Geothermal	0	0
<b>Total</b>	<b>132 870</b>	<b>100</b>

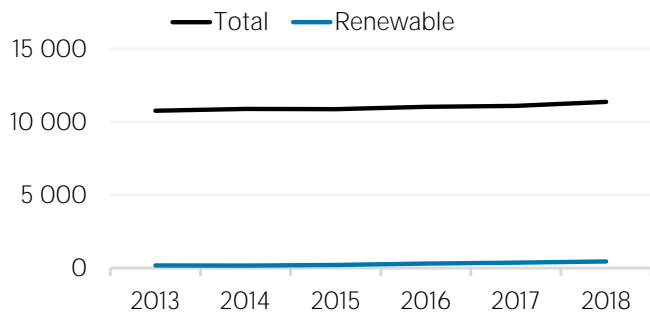
Capacity change (%)	2014-19	2018-19
<b>Non-renewable</b>	<b>+ 24</b>	<b>+ 2.5</b>
<b>Renewable</b>	<b>+ 174</b>	<b>+ 29.9</b>
Hydro/marine	+ 2	+ 0.9
Solar	+ 323	+ 47.3
Wind	+ 147	+ 6.5
Bioenergy	+ 162	+ 8.1
Geothermal	0	0.0
<b>Total</b>	<b>+ 33</b>	<b>+ 5.1</b>

### Net capacity change in 2019 (MW)

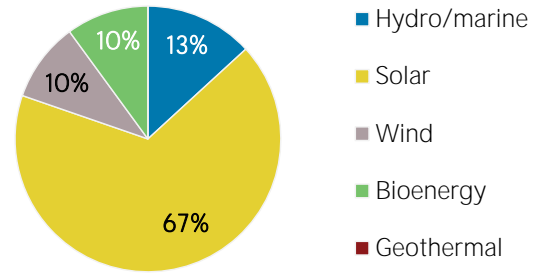


Generation in 2018	GWh	%
<b>Non-renewable</b>	<b>558 885</b>	<b>96</b>
<b>Renewable</b>	<b>23 090</b>	<b>4</b>
Hydro and marine	3 845	1
Solar	9 208	2
Wind	2 465	0
Bioenergy	7 572	1
Geothermal	0	0
<b>Total</b>	<b>581 975</b>	<b>100</b>

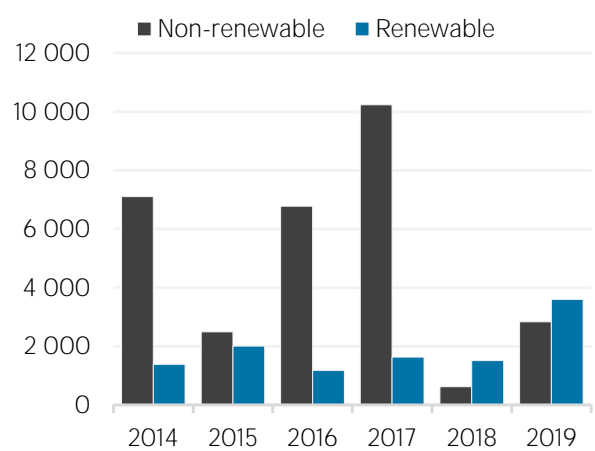
### Per capita electricity generation (kWh)



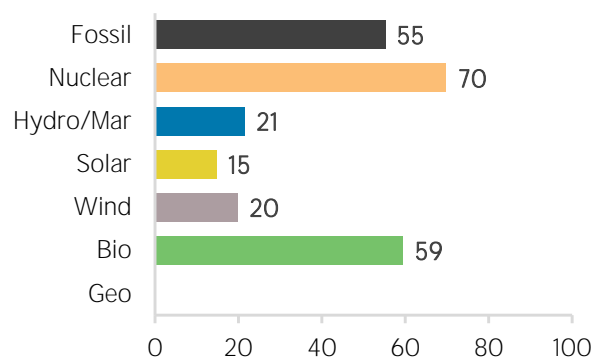
### Renewable capacity in 2019



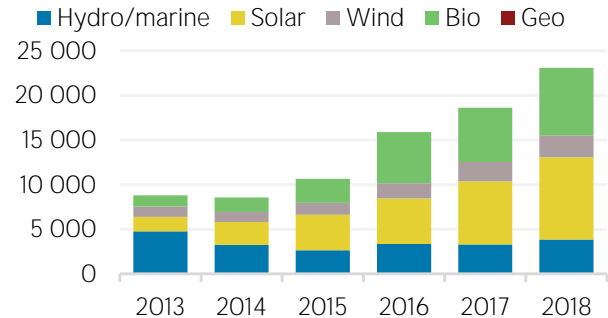
### Net capacity change (MW)



### Capacity utilisation in 2018 (%)



### Renewable generation (GWh)



## TARGETS, POLICIES AND MEASURES

### Most immediate clean energy targets & NDCs

	year	target	unit
<b>Renewable energy:</b>			
Renewable electricity:	2012	2	%
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

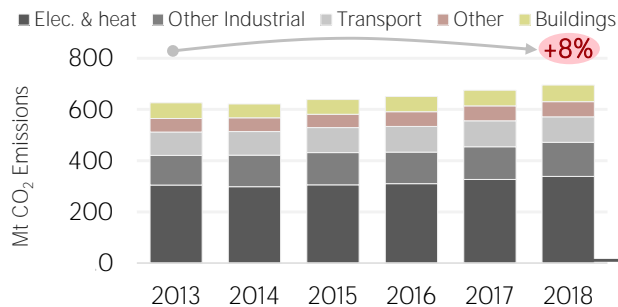
1	Creation of national heat map	2020
2	Korea draft Energy Basic Plan	2019
3	Korea Hydrogen Economy Roadmap 2040	2019
4	Refund for purchase of appliances entitled to energy efficiency grade 1	2019
5	Energy efficiency labelling and standard for air cleaner	2018

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

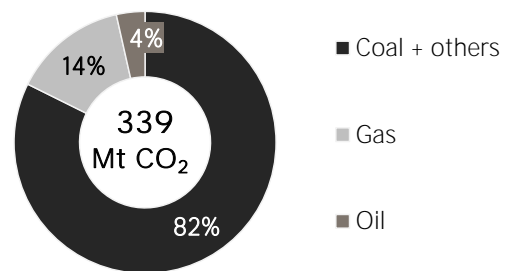
	Conditional	Unconditional	unit
- <b>Renewable energy</b>			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

## ENERGY AND EMISSIONS

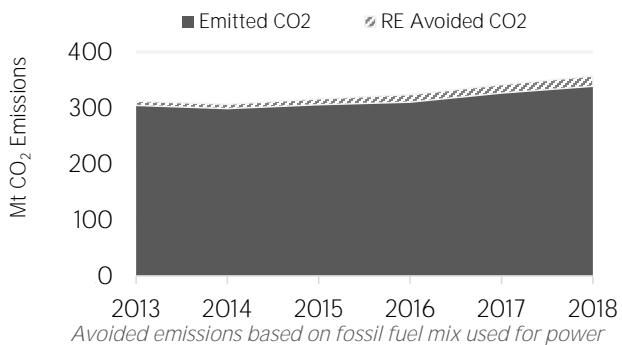
Energy-related CO<sub>2</sub> emissions by sector



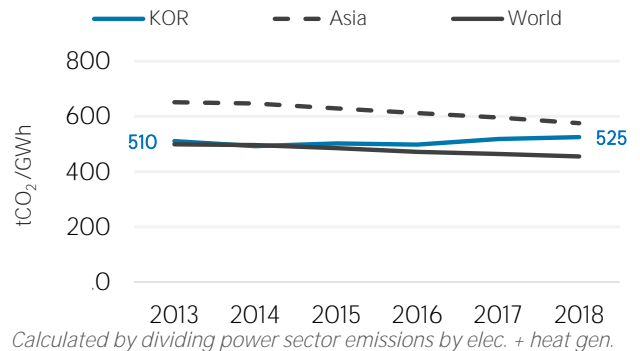
Elec. & heat generation CO<sub>2</sub> emissions in 2018



Avoided emissions from renewable elec. & heat



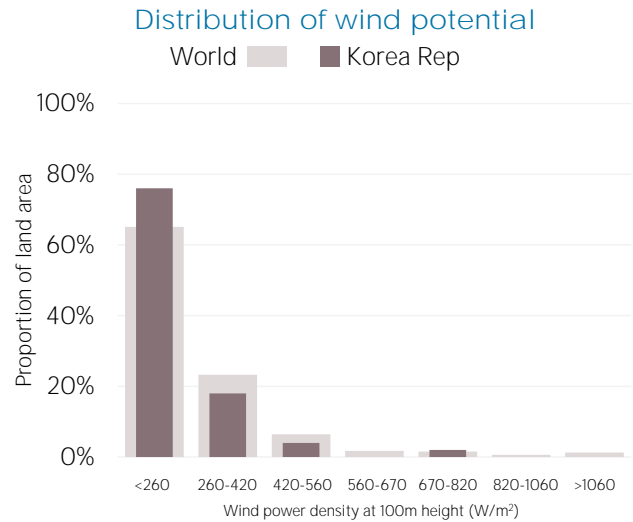
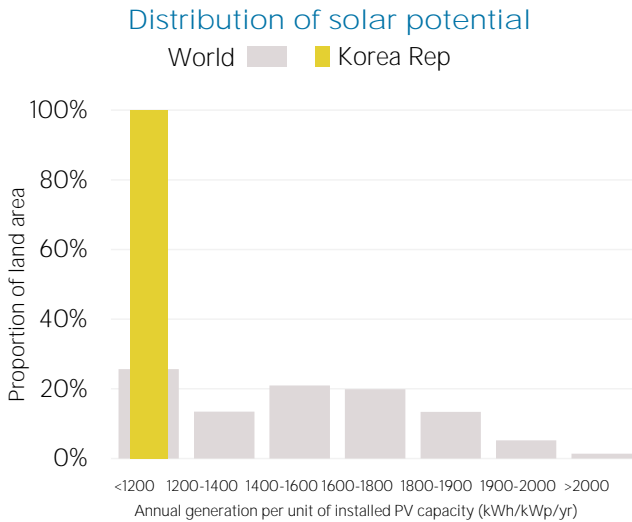
CO<sub>2</sub> emission factor for elec. & heat generation



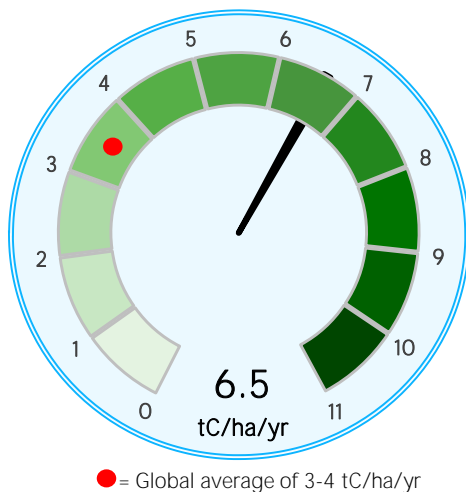
Avoided emissions based on fossil fuel mix used for power

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/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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