

SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2017)

Renewable energy (% of TFEC)	12.4	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	4.4	Access to clean cooking (% of population)	>95
Public flows renewables (2017 USD M)	n.a.	Per capita renewable capacity (W/person)	n.a.

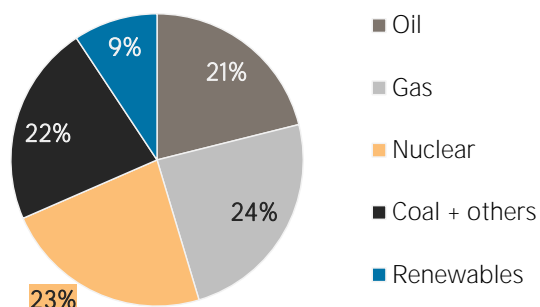
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2012	2017
Non-renewable (TJ)	631 423	647 664
Renewable (TJ)	60 493	66 485
Total (TJ)	691 916	714 149
Renewable share (%)	9	9

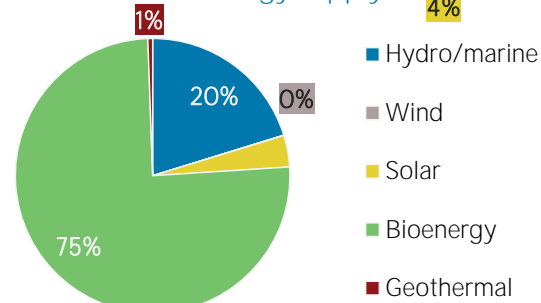
Growth in TPES	2012-17	2016-17
Non-renewable (%)	+2.6	+4.6
Renewable (%)	+9.9	-2.1
Total (%)	+3.2	+3.9

Primary energy trade	2012	2017
Imports (TJ)	629 727	688 060
Exports (TJ)	205 322	222 258
Net trade (TJ)	- 424 405	- 465 802
Imports (% of supply)	91	96
Exports (% of production)	78	85
Energy self-sufficiency (%)	38	37
Net trade (USD million)	- 4 889	- 3 363
Net trade (% of GDP)	-5.2	-3.5

Total primary energy supply in 2017



Renewable energy supply in 2017



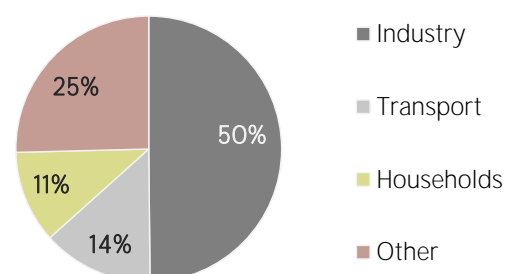
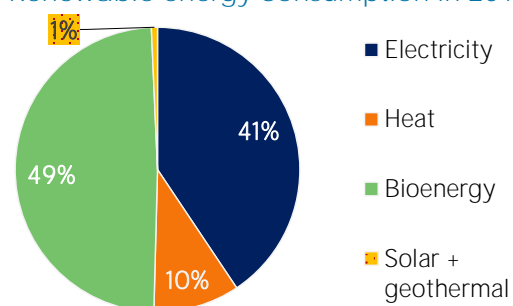
RENEWABLE ENERGY CONSUMPTION

Consumption by source	2012	2017
Electricity (TJ)	19 372	19 634
Heat (TJ)	5 584	4 737
Bioenergy (TJ)	18 240	23 637
Solar + geothermal (TJ)	277	335
Total (TJ)	43 473	48 342
Electricity share (%)	45	41

Consumption growth	2012-17	2016-17
Renewable electricity (%)	+1.4	-10.4
Other renewables (%)	+19.1	+1.7
Total (%)	+11.2	-3.6

Consumption by sector	2012	2017
Industry (TJ)	21 906	24 095
Transport (TJ)	4 372	6 533
Households (TJ)	5 725	5 433
Other (TJ)	11 470	12 281
Renewable share of TFEC		12.4

Renewable energy consumption in 2017

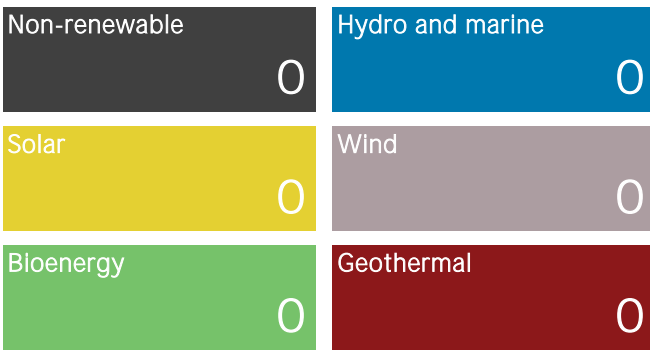


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2019	MW	%
Non-renewable	5 295	69
Renewable	2 330	31
Hydro/marine	1 612	21
Solar	472	6
Wind	3	0
Bioenergy	243	3
Geothermal	0	0
Total	7 625	100

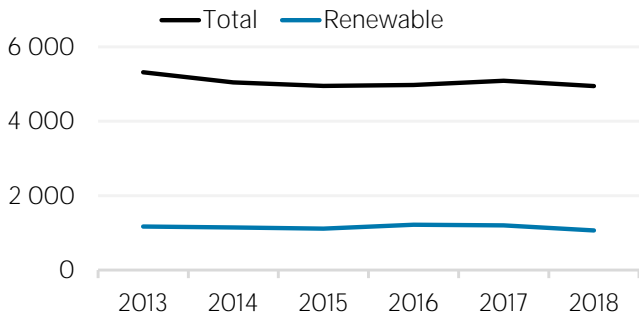
Capacity change (%)	2014-19	2018-19
Non-renewable	- 7	0.0
Renewable	- 2	0.0
Hydro/marine	+ 0	0.0
Solar	- 11	0.0
Wind	0	0.0
Bioenergy	+ 3	0.0
Geothermal	0	0.0
Total	- 6	0.0

Net capacity change in 2019 (MW)

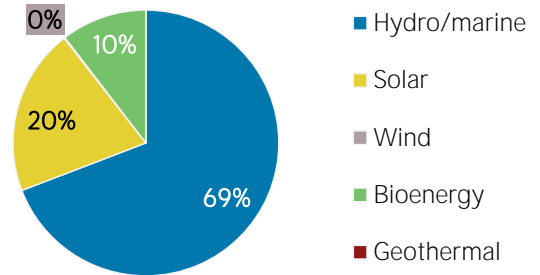


Generation in 2018	GWh	%
Non-renewable	21 165	78
Renewable	5 806	22
Hydro and marine	3 590	13
Solar	585	2
Wind	6	0
Bioenergy	1 625	6
Geothermal	0	0
Total	26 971	100

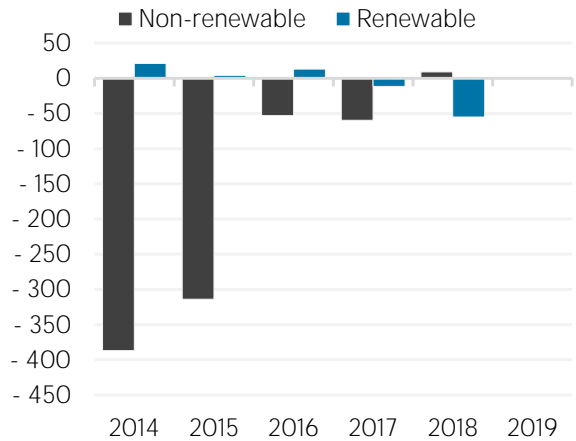
Per capita electricity generation (kWh)



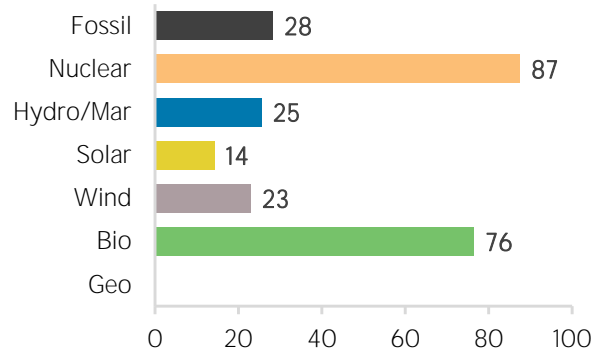
Renewable capacity in 2019



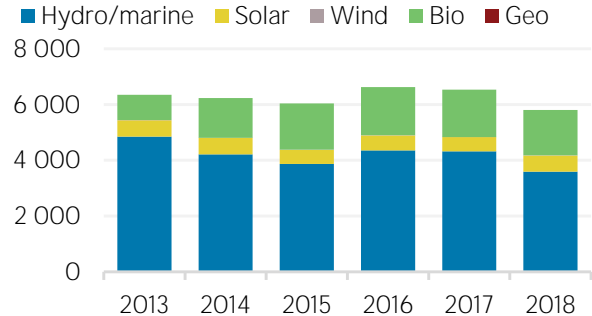
Net capacity change (MW)



Capacity utilisation in 2018 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target	unit
Renewable energy:	2020	14	%
Renewable electricity:	2020	24	%
Renewable capacity:			
Renewable transport:	2020	10	%
Liquid Biofuel blending mandate:			
Other transport targets:			
Renewable heating/cooling:	2020	15	%
Renewable Hydropower			
Off-grid renewable technologies:			
Energy efficiency (Energy):			
Energy efficiency (Electricity):			

Latest policies, programmes and legislation

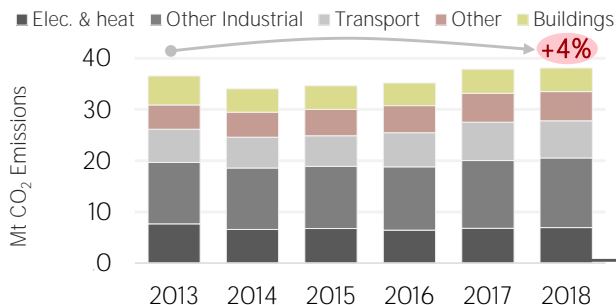
1	Local incentives EV	2017
2	Registration tax benefits EV	2017
3	Strategy for the development of electromobility in the Slovak Republic and its impact on the national economy of the Slovak Republic	2015
4	2014 Energy Policy (2035 and 2050 Horizon)	2014
5	3rd Energy Efficiency Action Plan for years 2014 - 2016 with outlook to 2020	2014

References to sustainable energy in Nationally Determined Contribution (NDC)

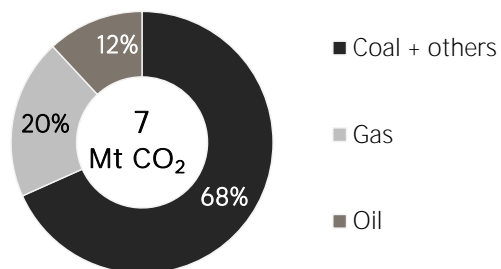
- | | Conditional | Unconditional | unit |
|---------------------------|-------------|---------------|------|
| - Renewable energy | | | |
| - electricity | | | |
| - transport | | | |
| - heating/cooling | | | |
| - Energy efficiency | | | |

ENERGY AND EMISSIONS

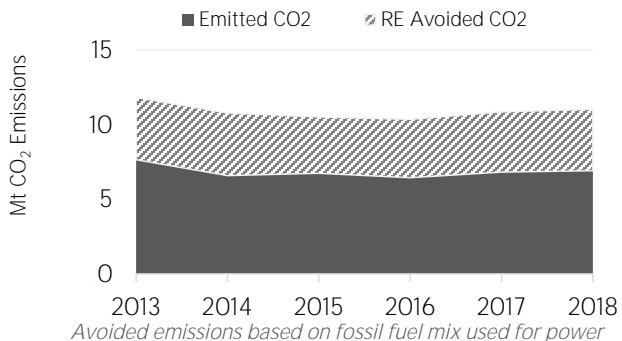
Energy-related CO₂ emissions by sector



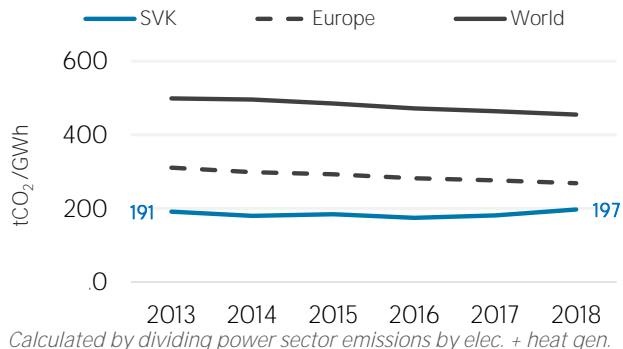
Elec. & heat generation CO₂ emissions in 2018



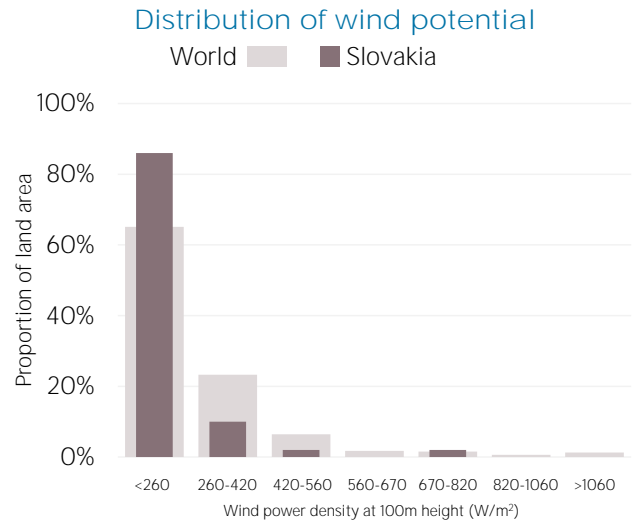
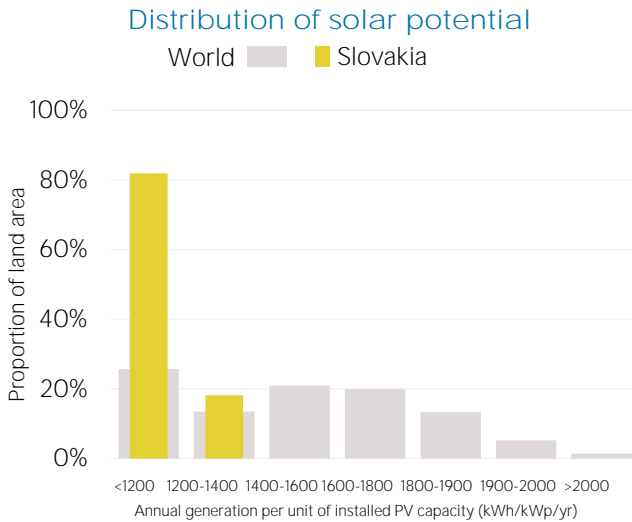
Avoided emissions from renewable elec. & heat



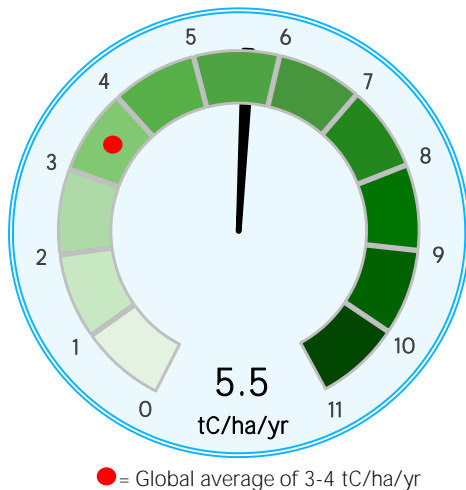
CO₂ emission factor for elec. & heat generation



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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