STATISTICAL PROFILE

France

Sustainable Development Goal 7.2: Energy Indicators (2016)

Renewable energy (% of TFEC)	14.7	Access to electricity (% of population)	100.0
Energy efficiency (MJ per $1 of GDP)	4.0	Access to clean cooking (% of population)	>95

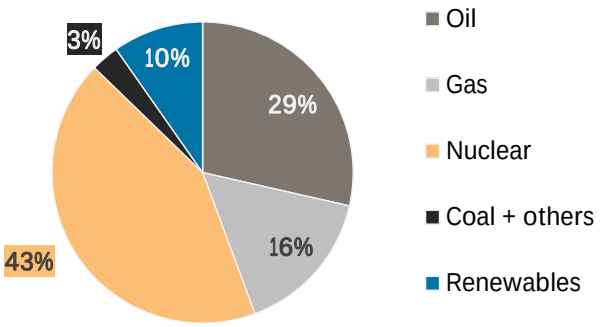
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2011	2016
Non-renewable (TJ)	9 812 775	9 164 490
Renewable (TJ)	818 769	988 135
Total (TJ)	10 631 544	10 152 625
Renewable share (%)	8	10

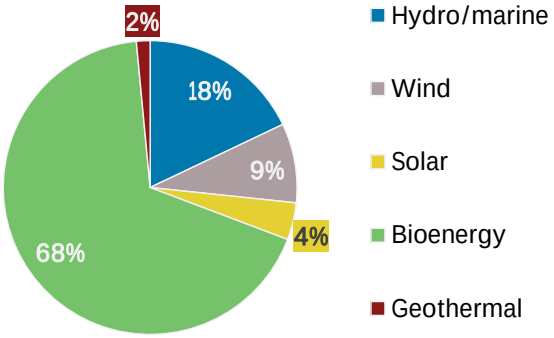
Growth in TPES	2011-16	2015-16
Non-renewable (%)	-6.6	-2.9
Renewable (%)	+20.7	+6.0
Total (%)	-4.5	-2.1

Primary energy trade	2011	2016
Imports (TJ)	6 788 081	6 184 514
Exports (TJ)	1 476 347	1 244 716
Net trade (TJ)	-5 311 734	-4 939 798
Imports (% of supply)	64	61
Exports (% of production)	26	23
Energy self-sufficiency (%)	54	54
Net trade (USD million)	n.a.	n.a.
Net trade (% of GDP)	n.a.	n.a.

Total primary energy supply in 2016



Renewable energy supply in 2016



RENEWABLE ENERGY CONSUMPTION

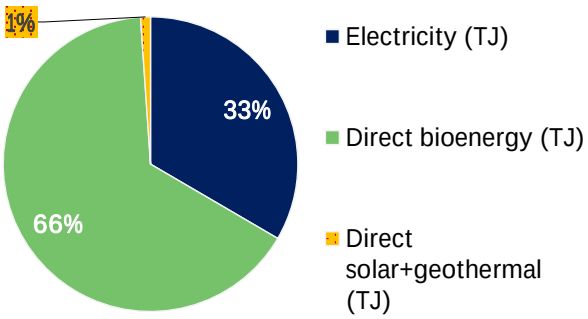
Consumption by source	2011	2016
Electricity (TJ)	235 933	265 762
Direct bioenergy (TJ)	410 693	521 022
Direct solar+geothermal (TJ)	6 459	8 629
Total (TJ)	**653 085**	**795 413**
Electricity share (%)	36	33

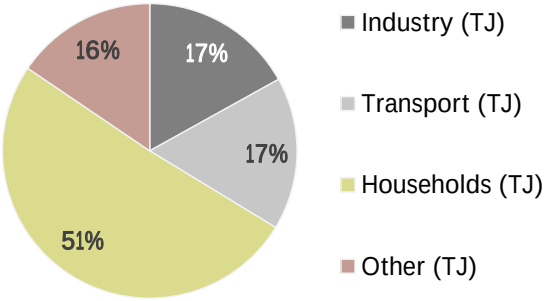
Consumption growth	2011-16	2015-16
Renewable electricity (%)	+12.6	-3.1
Other renewables (%)	+27.0	+9.4
Total (%)	**+21.8**	**+4.9**

Consumption by sector	2011	2016
Industry (TJ)	115 813	134 718
Transport (TJ)	107 259	133 331
Households (TJ)	327 406	403 858
Other (TJ)	102 608	123 506

Renewable share of TFEC	10.9	14.7

Renewable energy consumption in 2016





ELECTRICITY CAPACITY AND GENERATION

Capacity in 2018	MW	%
Non-renewable	**82 930**	**62**
Renewable	**50 527**	**38**
Hydro/marine	24 283	18
Solar	9 617	7
Wind	14 900	11
Bioenergy	1 711	1
Geothermal	16	0
Total	**133 457**	**100**

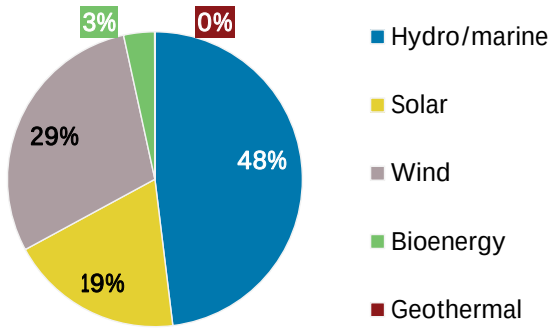
Capacity change (%)	2013-18	2017-18
Non-renewable	**- 9**	**- 2.7**
Renewable	**+ 31**	**+ 5.7**
Hydro/marine	+ 1	+ 0.4
Solar	+ 82	+ 11.7
Wind	+ 83	+ 10.4
Bioenergy	+ 49	+ 14.8
Geothermal	- 2	0.0
Total	**+ 3**	**+ 0.3**

Net capacity change in 2018 (MW)

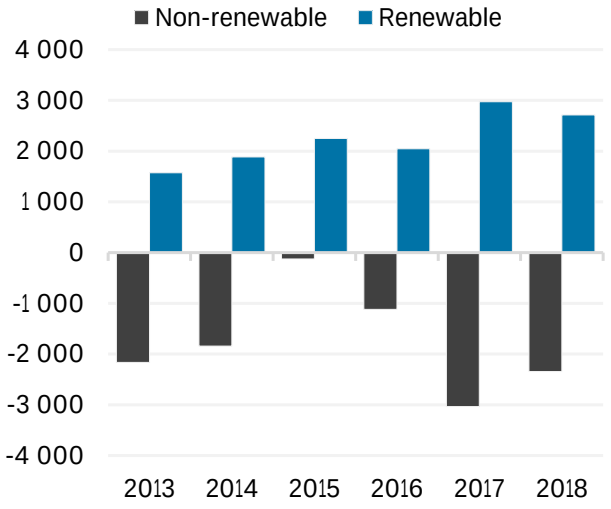
Non-renewable **- 2 345**	Hydro and marine **+ 85**
Solar **+ 1 007**	Wind **+ 1 401**
Bioenergy **+ 220**	Geothermal **0**

Generation in 2017	GWh	%
Non-renewable	**469 314**	**84**
Renewable	**92 617**	**16**
Hydro and marine	50 523	9
Solar	9 585	2
Wind	24 609	4
Bioenergy	7 766	1
Geothermal	133	0
Total	**561 930**	**100**

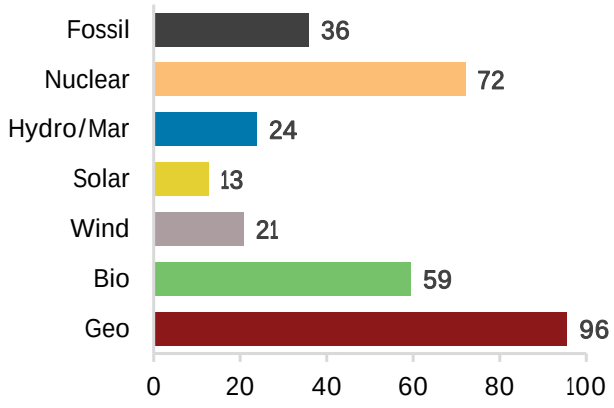
Renewable capacity in 2018



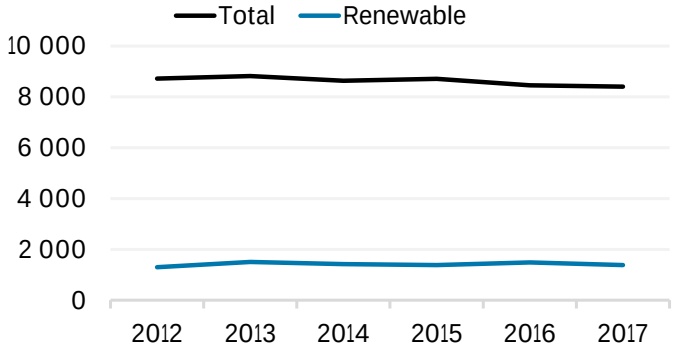
Net capacity change (MW)



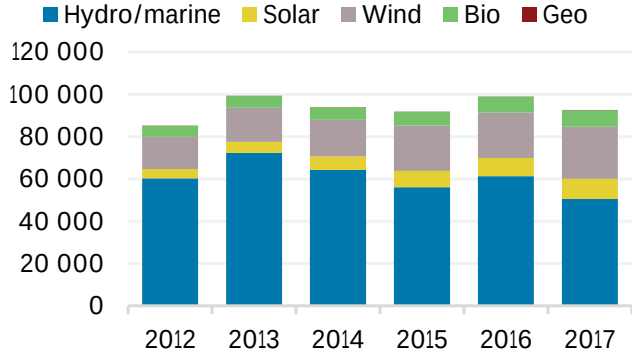
Capacity utilisation in 2017 (%)



Per capita electricity generation (kWh)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target	unit
Renewable energy:	2020	23	%
Renewable electricity:	2020	27	%
Renewable capacity:			
Renewable transport:	2020	11	%
Liquid Biofuel blending mandate:			
Other transport targets:			
Renewable heating/cooling:	2020	33	%
Renewable Hydropower			
Off-grid renewable technologies:			

Energy efficiency (Energy):

Energy efficiency (Electricity):

Latest policies, programmes and legislation

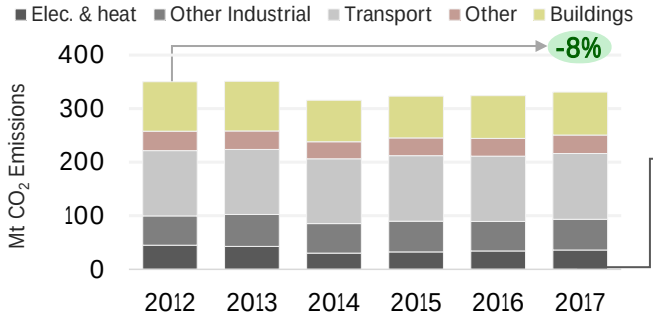
1	Decree of 24 of April 2016 on renewable energy developments objectives (Arrêté du 24 avril 2016 relatif aux objectifs de développement des énergies renouvelables)	2016
2	Support scheme for electricity produced from renewable energy sources (LOI n° 2015-992 du 17 août 2015 relative à la transition énergétique pour la croissance verte)	2016
3	Energy Transition Act	2015
4	Biomethane injection into the natural gas grid	2011
5	Offshore wind tendering mechanism	2011

References to sustainable energy in Nationally Determined Contribution (NDC)

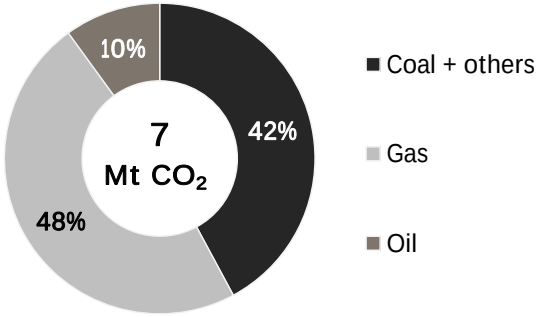
	Conditional	Unconditional	unit
- **Renewable energy**			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

ENERGY AND EMISSIONS

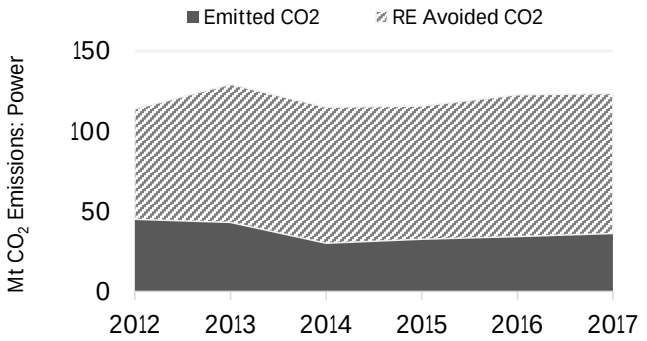
Energy-related CO_2 emissions by sector



Elec. & heat generation CO_2 emissions in 2017

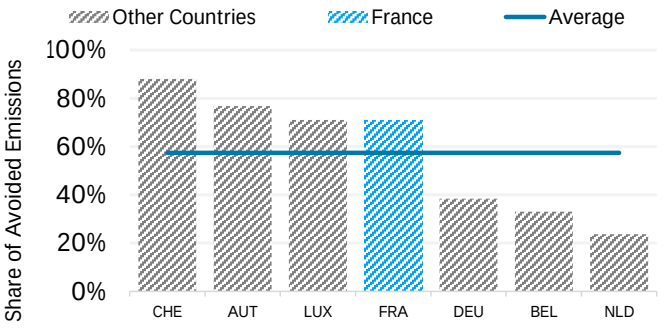


Avoided emissions from renewable power



Avoided emissions based on fossil fuel mix used for power

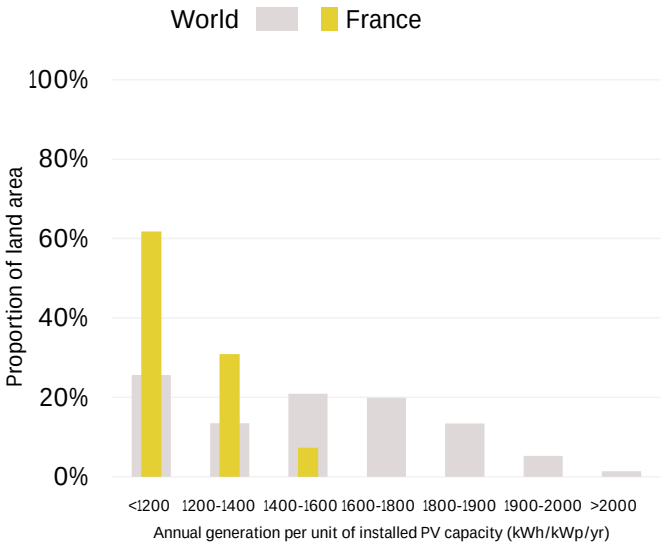
Reduction in power emissions due to RE in 2017



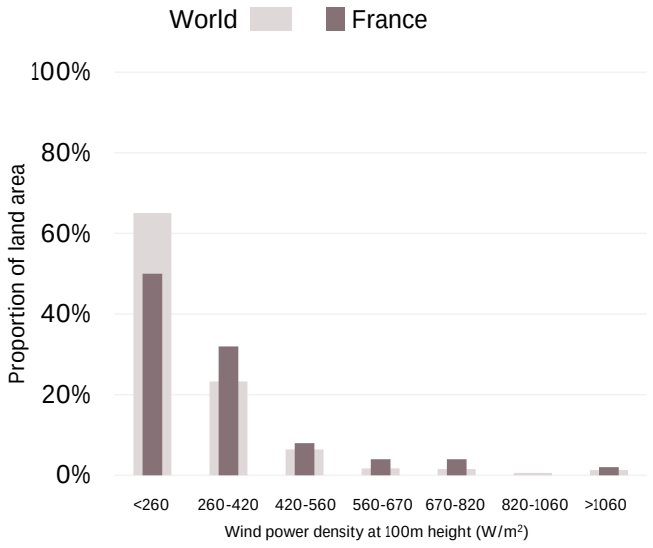
Reduction is RE Avoided divided by sum of avoided and emitted

RENEWABLE RESOURCE POTENTIAL

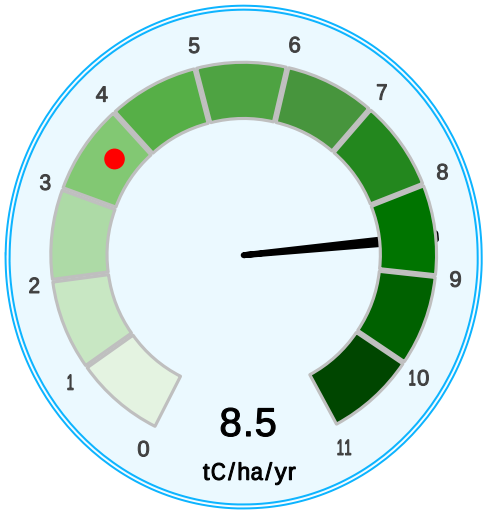
Distribution of solar potential



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 per year.

Sources: IRENA statistics, plus data from the following sources: UN SDG Indicators Database (original sources: WHO; World Bank; IEA; IRENA; and UNSD); 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: Energy self-sufficiency has been defined as total primary energy production divided by total primary energy supply. The value of energy trade has been defined as including all commodities in Chapter 27 of the Harmonised System (HS). Capacity utilisation has been calculated as annual generation divided by capacity x 8,760. Avoided emissions from renewable power have been calculated as renewable generation divided by fossil fuel generation multiplied by reported emissions from the power secrtor. 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.

This note has been produced to provide policy makers with a brief overview of developments in renewable energy in a country. 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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