

United Kingdom

Sustainable Development Goal 7.2: Energy Indicators (2016)

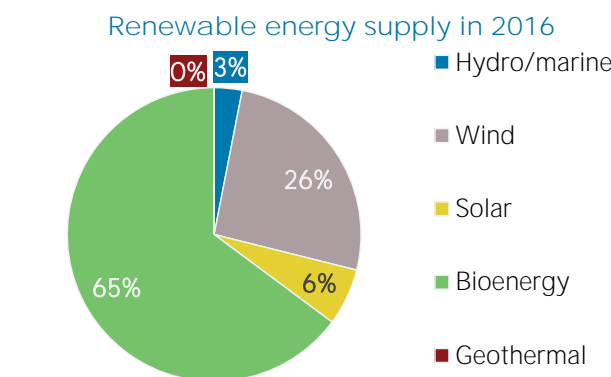
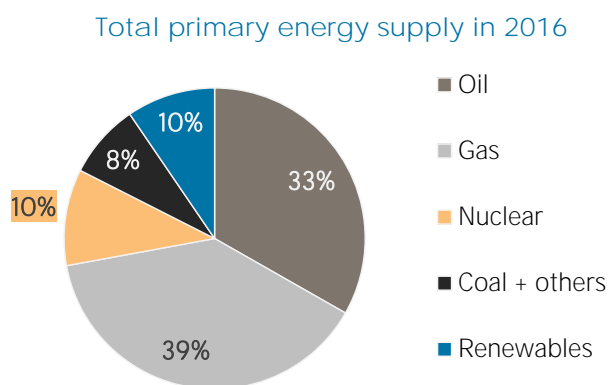
Renewable energy (% of TFEC)	8.8	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	2.9	Access to clean cooking (% of population)	>95

TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2011	2016
Non-renewable (TJ)	7 464 864	6 763 638
Renewable (TJ)	357 952	712 313
Total (TJ)	7 822 816	7 475 951
Renewable share (%)	5	10

Growth in TPES	2011-16	2015-16
Non-renewable (%)	-9.4	-1.9
Renewable (%)	+99.0	+12.2
Total (%)	-4.4	-0.7

Primary energy trade	2011	2016
Imports (TJ)	6 325 900	5 758 690
Exports (TJ)	3 233 852	2 911 478
Net trade (TJ)	-3 092 048	-2 847 212
Imports (% of supply)	81	77
Exports (% of production)	60	58
Energy self-sufficiency (%)	69	67
Net trade (USD million)	- 25 551	- 13 985
Net trade (% of GDP)	-1.0	-0.5

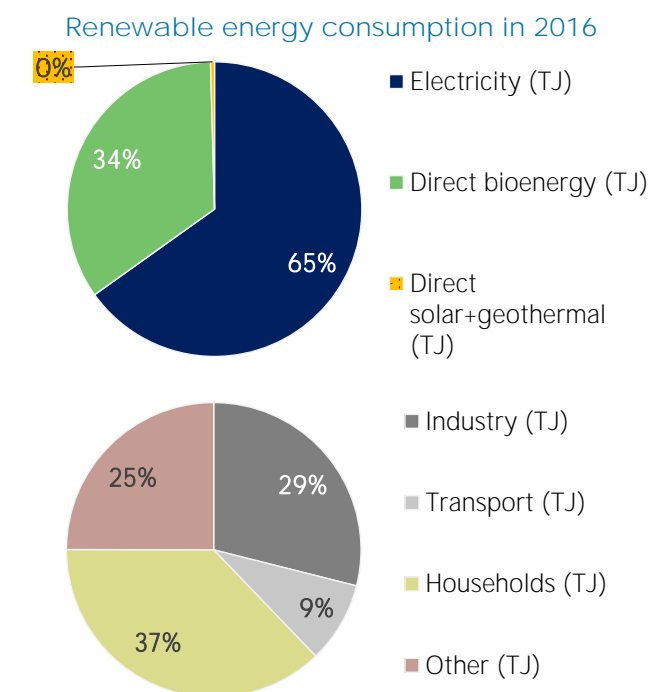


RENEWABLE ENERGY CONSUMPTION

Consumption by source	2011	2016
Electricity (TJ)	129 483	324 415
Direct bioenergy (TJ)	108 264	171 472
Direct solar+geothermal (TJ)	1 832	2 178
Total (TJ)	239 579	498 065
Electricity share (%)	54	65

Consumption growth	2011-16	2015-16
Renewable electricity (%)	+150.5	+20.1
Other renewables (%)	+57.7	+9.1
Total (%)	+107.9	+16.0

Consumption by sector	2011	2016
Industry (TJ)	58 314	144 092
Transport (TJ)	45 881	44 328
Households (TJ)	86 076	185 311
Other (TJ)	49 307	124 334
Renewable share of TFEC	4.4	8.8

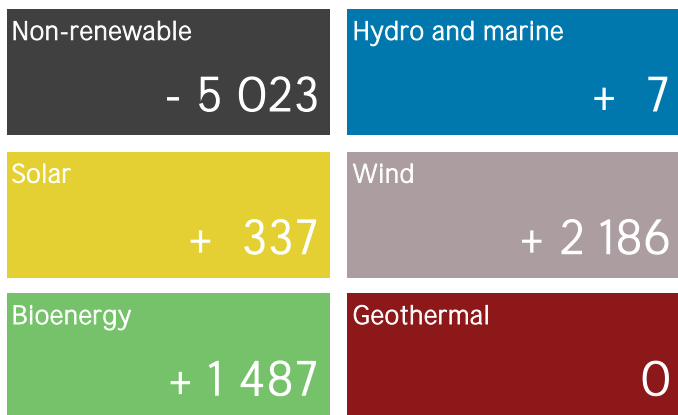


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2018	MW	%
Non-renewable	64 229	59
Renewable	44 051	41
Hydro/marine	2 199	2
Solar	13 118	12
Wind	21 770	20
Bioenergy	6 963	6
Geothermal	0	0
Total	108 279	100

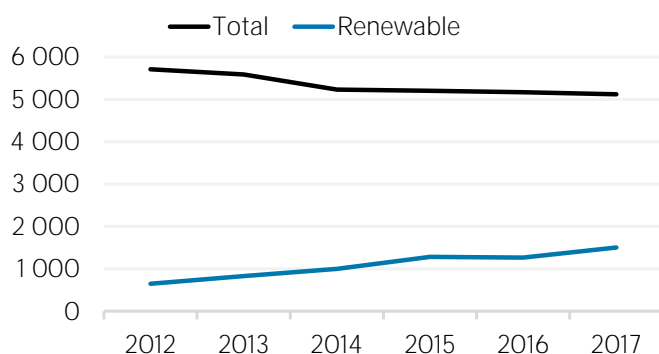
Capacity change (%)	2013-18	2017-18
Non-renewable	- 13	- 7.3
Renewable	+ 120	+ 10.0
Hydro/marine	+ 9	+ 0.3
Solar	+ 347	+ 2.6
Wind	+ 93	+ 11.2
Bioenergy	+ 84	+ 27.2
Geothermal	0	0.0
Total	+ 16	- 0.9

Net capacity change in 2018 (MW)

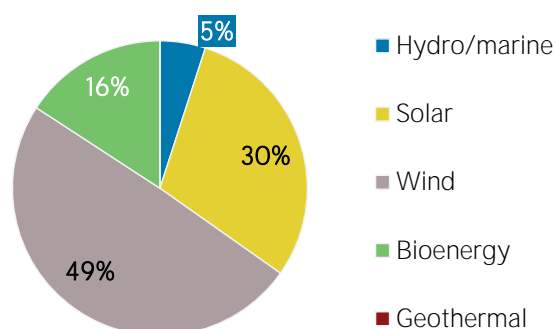


Generation in 2017	GWh	%
Non-renewable	239 005	71
Renewable	99 331	29
Hydro and marine	5 932	2
Solar	11 525	3
Wind	50 004	15
Bioenergy	31 870	9
Geothermal	0	0
Total	338 336	100

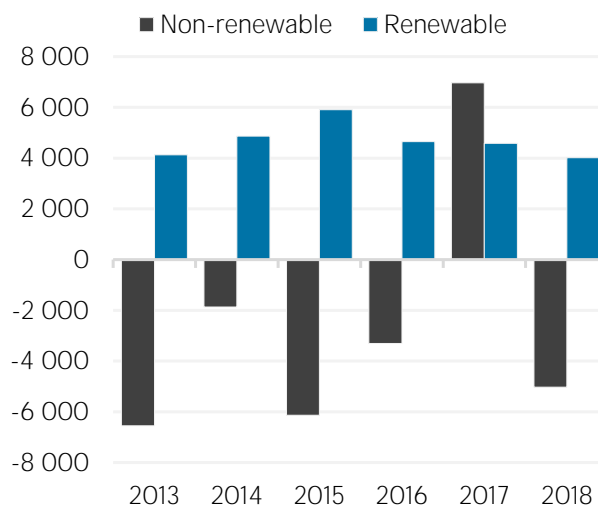
Per capita electricity generation (kWh)



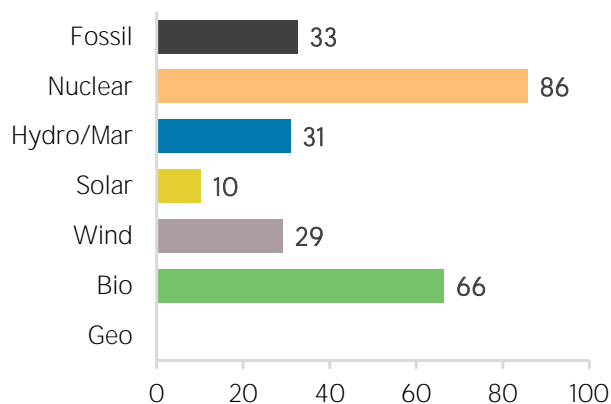
Renewable capacity in 2018



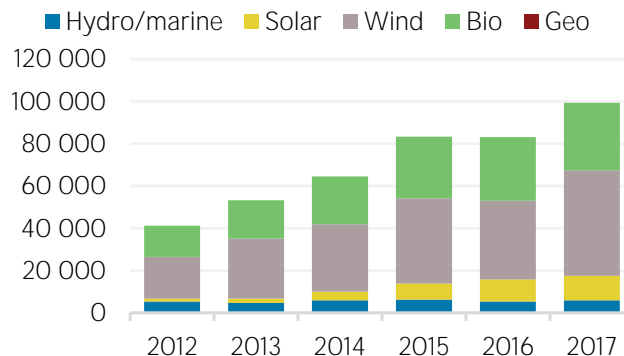
Net capacity change (MW)



Capacity utilisation in 2017 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target	unit
Renewable energy:	2020	15	%
Renewable electricity:	2020	31	%
Renewable capacity:			
Renewable transport:	2020	10	%
Liquid Biofuel blending mandate:			
Other transport targets:			
Renewable heating/cooling:	2020	10	%
Renewable Hydropower			
Off-grid renewable technologies:			

Energy efficiency (Energy):

Energy efficiency (Electricity):

Latest policies, programmes and legislation

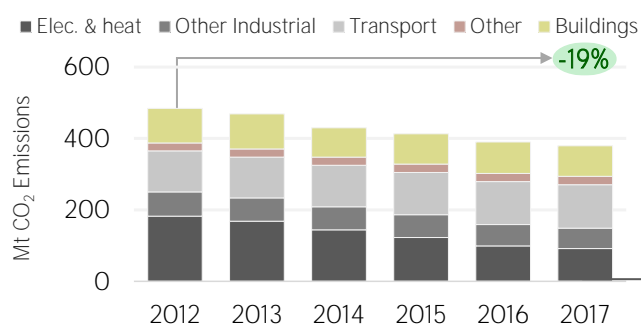
1 Contract for Difference (CfD)	2014
2 Electricity Market Reform (EMR)	2013
3 Renewable Heat Incentive (RHI) for domestic and non-domestic generators	2011
4 Feed-in Tariffs for renewable electricity for PV and non-PV technologies	2010
5 National Renewable Energy Action Plan (NREAP)	2010

References to sustainable energy in Nationally Determined Contribution (NDC)

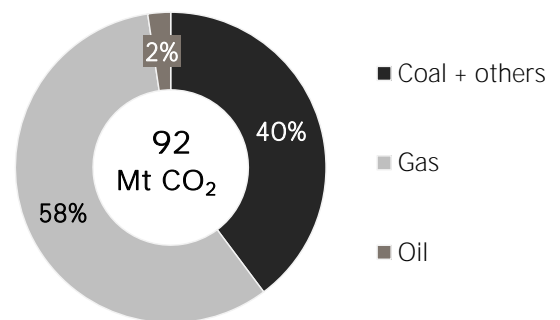
	Conditional	Unconditional	unit
- Renewable energy			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

ENERGY AND EMISSIONS

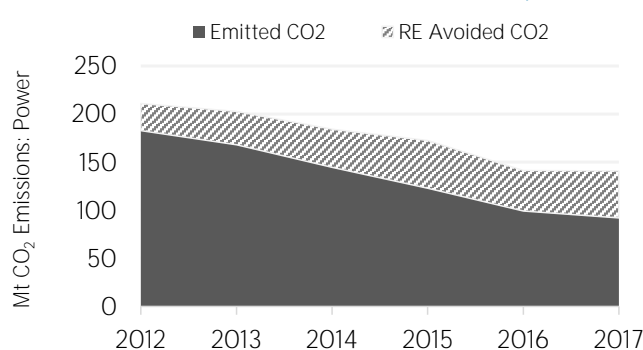
Energy-related CO₂ emissions by sector



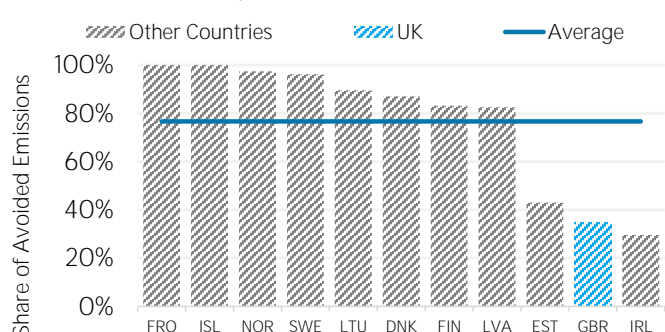
Elec. & heat generation CO₂ emissions in 2017



Avoided emissions from renewable power



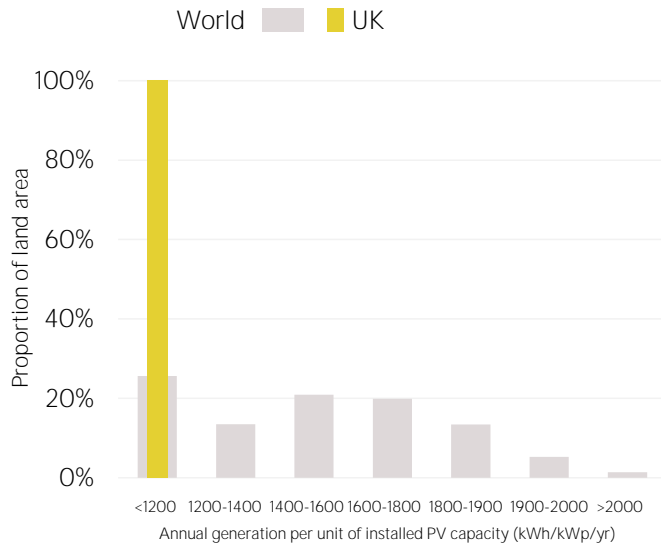
Reduction in power emissions due to RE in 2017



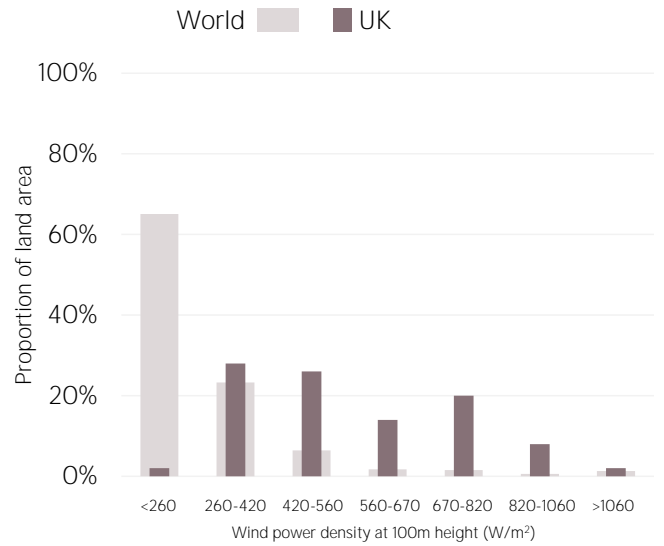
Avoided emissions based on fossil fuel mix used for power

Reduction is RE Avoided divided by sum of avoided and emitted

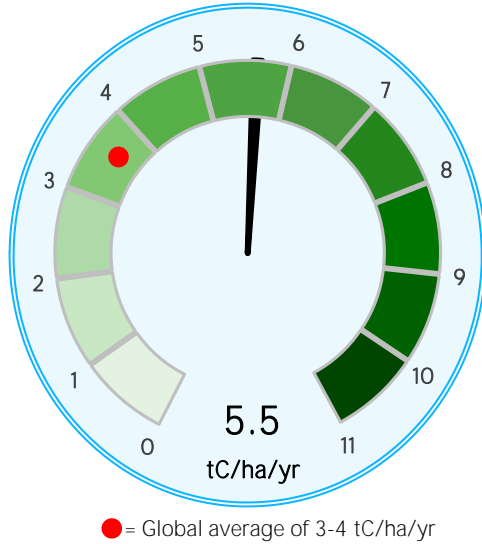
Distribution of solar potential



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 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.

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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IRENA Headquarters
 Masdar City
 P.O. Box 236, Abu Dhabi
 United Arab Emirates
www.irena.org