

SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2017)

Renewable energy (% of TFEC)	10.4	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	3.2	Access to clean cooking (% of population)	>95
Public flows renewables (2017 USD M)	116.8	Per capita renewable capacity (W/person)	71.2

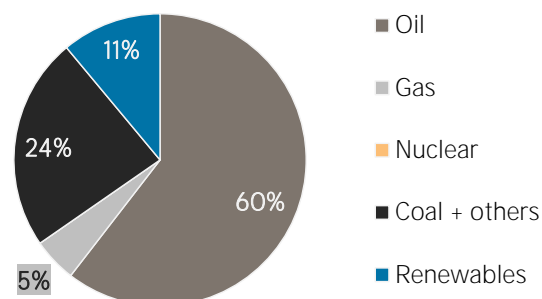
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2012	2017
Non-renewable (TJ)	716 284	782 260
Renewable (TJ)	58 490	97 193
Total (TJ)	774 774	879 453
Renewable share (%)	8	11

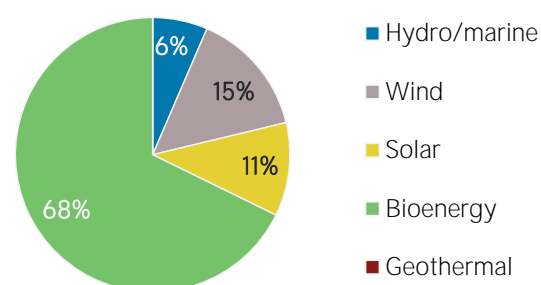
Growth in TPES	2012-17	2016-17
Non-renewable (%)	+9.2	+5.2
Renewable (%)	+66.2	+11.6
Total (%)	+13.5	+5.9

Primary energy trade	2012	2017
Imports (TJ)	868 037	817 149
Exports (TJ)	48 334	580
Net trade (TJ)	- 819 703	- 816 569
Imports (% of supply)	112	93
Exports (% of production)	77	1
Energy self-sufficiency (%)	8	11
Net trade (USD million)	- 11 122	- 6 921
Net trade (% of GDP)	-11.3	-6.3

Total primary energy supply in 2017



Renewable energy supply in 2017



RENEWABLE ENERGY CONSUMPTION

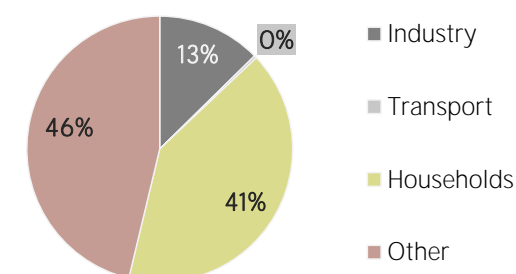
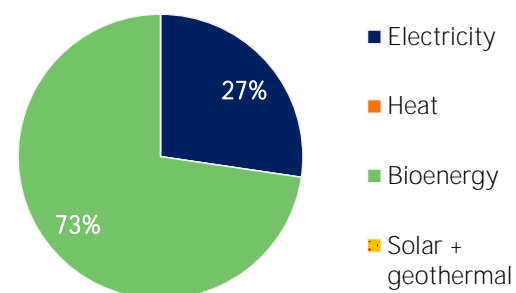
Consumption by source	2012	2017
Electricity (TJ)	15 051	23 309
Heat (TJ)	0	0
Bioenergy (TJ)	40 725	62 000
Solar + geothermal (TJ)	0	0
Total (TJ)	55 776	85 309
Electricity share (%)	27	27

Consumption growth	2012-17	2016-17
Renewable electricity (%)	+54.9	+40.9
Other renewables (%)	+52.2	-1.2
Total (%)	+52.9	+7.6

Consumption by sector	2012	2017
Industry (TJ)	7 277	10 788
Transport (TJ)	176	264
Households (TJ)	24 373	34 798
Other (TJ)	23 950	39 459

Renewable share of TFEC	10.4
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Renewable energy consumption in 2017

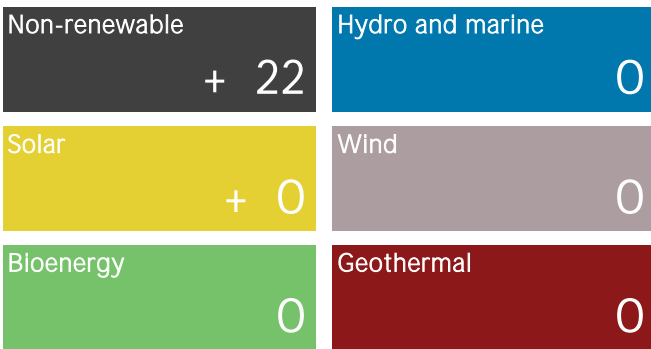


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2019	MW	%
Non-renewable	7 723	70
Renewable	3 267	30
Hydro/marine	1 306	12
Solar	734	7
Wind	1 225	11
Bioenergy	2	0
Geothermal	0	0
Total	10 990	100

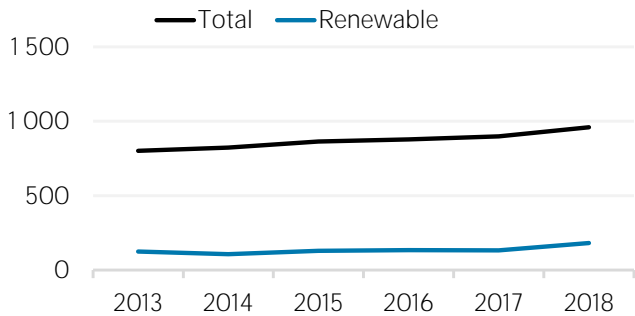
Capacity change (%)	2014-19	2018-19
Non-renewable	+ 31	+ 0.3
Renewable	+ 52	+ 0.0
Hydro/marine	- 0	0.0
Solar	+ 1 754	+ 0.0
Wind	+ 54	0.0
Bioenergy	+ 145	0.0
Geothermal	0	0.0
Total	+ 37	+ 0.2

Net capacity change in 2019 (MW)

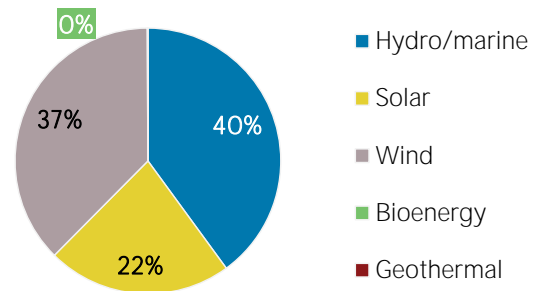


Generation in 2018	GWh	%
Non-renewable	28 035	81
Renewable	6 542	19
Hydro and marine	1 693	5
Solar	980	3
Wind	3 856	11
Bioenergy	13	0
Geothermal	0	0
Total	34 577	100

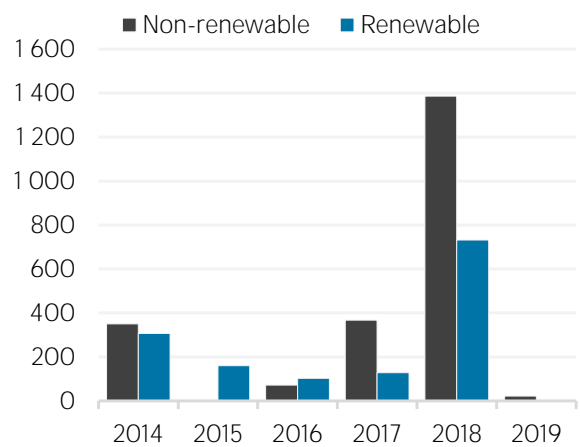
Per capita electricity generation (kWh)



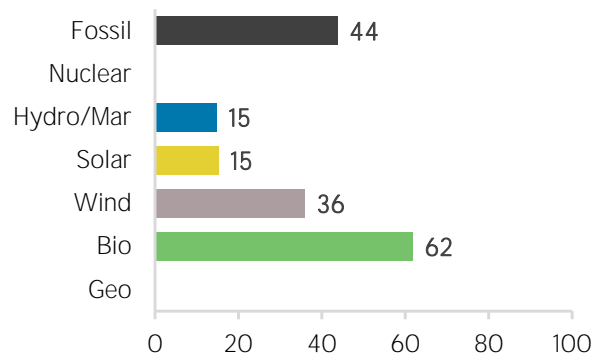
Renewable capacity in 2019



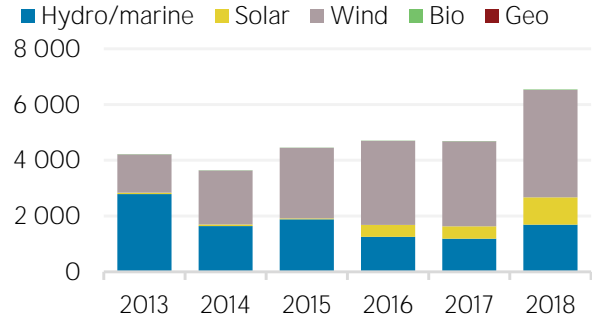
Net capacity change (MW)



Capacity utilisation in 2018 (%)



Renewable generation (GWh)



Most immediate clean energy targets & NDCs

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

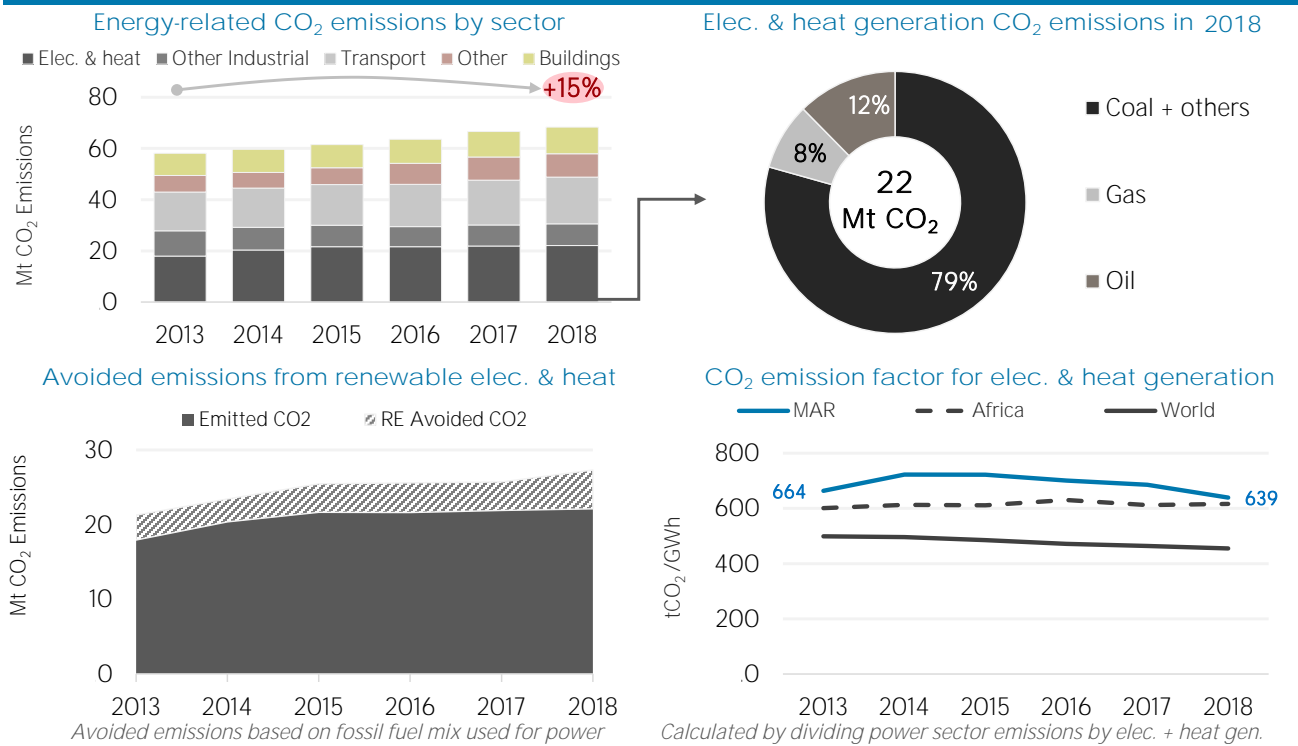
Latest policies, programmes and legislation

1	Decree n. 2-17-746 on Mandatory energy audits and energy audit organisations	2019
2	Decree n. 2-18-165 on mandatory energy audits	2019
3	Energy Efficiency program for public buildings	2019
4	MEPS for Air Conditioners	2018
5	Circulation tax exemption Morocco	2017

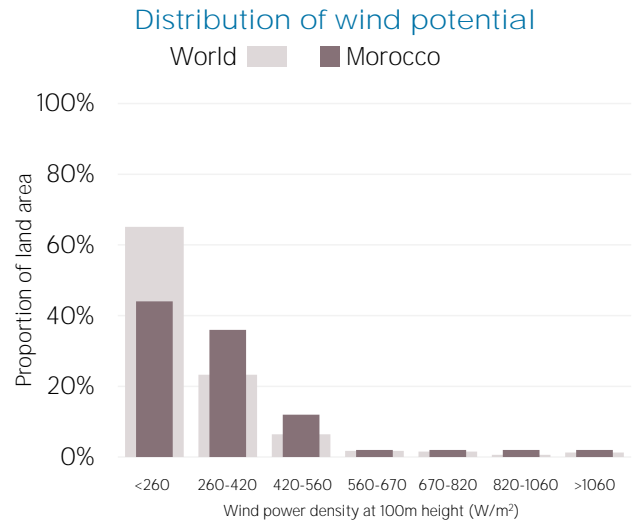
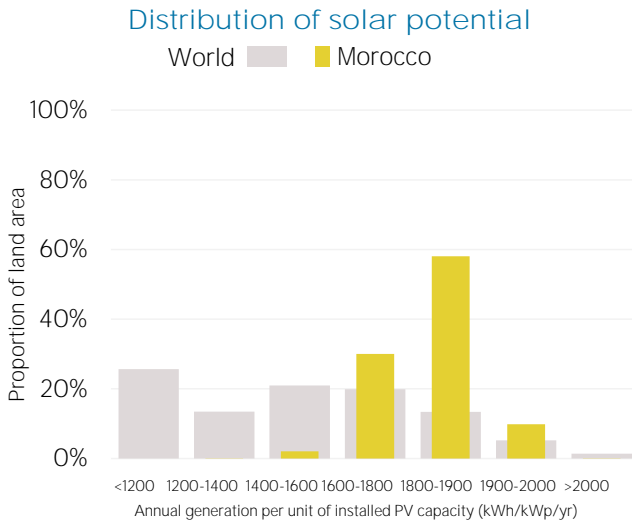
References to sustainable energy in Nationally Determined Contribution (NDC)

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

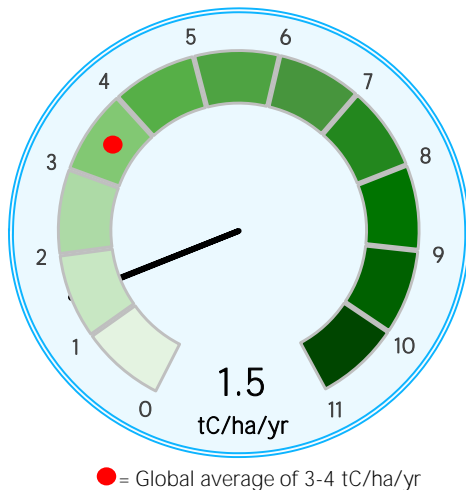
ENERGY AND EMISSIONS



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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