

Nigeria

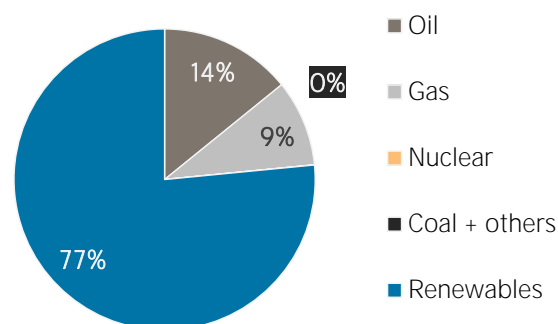
Sustainable Development Goal 7.2: Energy Indicators (2016)

Renewable energy (% of TFEC)	82.4	Access to electricity (% of population)	59.3
Energy efficiency (MJ per \$1 of GDP)	6.2	Access to clean cooking (% of population)	6

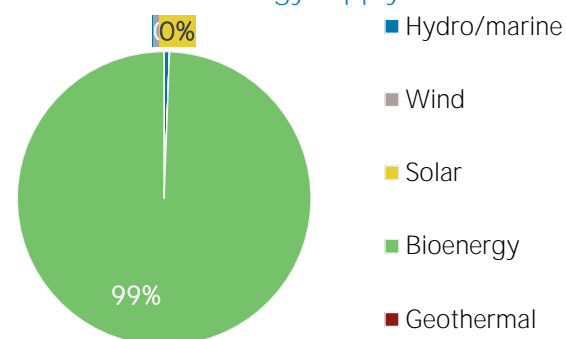
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2011	2016
Non-renewable (TJ)	1 516 996	1 472 795
Renewable (TJ)	4 299 492	4 804 916
Total (TJ)	5 816 488	6 277 711
Renewable share (%)	74	77
Growth in TPES		
	2011-16	2015-16
Non-renewable (%)	-2.9	+7.0
Renewable (%)	+11.8	+2.2
Total (%)	+7.9	+3.3
Primary energy trade		
	2011	2016
Imports (TJ)	836 190	824 762
Exports (TJ)	5 798 331	4 492 134
Net trade (TJ)	4 962 141	3 667 372
Imports (% of supply)	14	13
Exports (% of production)	54	45
Energy self-sufficiency (%)	186	159
Net trade (USD million)	+ 105 689	+ 21 666
Net trade (% of GDP)	+25.8	+5.4

Total primary energy supply in 2016



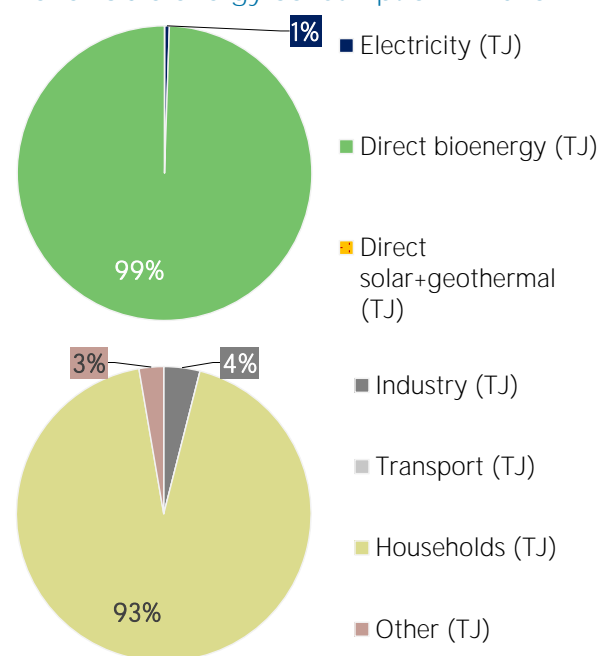
Renewable energy supply in 2016



RENEWABLE ENERGY CONSUMPTION

Consumption by source	2011	2016
Electricity (TJ)	15 571	23 233
Direct bioenergy (TJ)	3 953 943	4 397 713
Direct solar+geothermal (TJ)	0	0
Total (TJ)	3 969 514	4 420 946
Electricity share (%)	0	1
Consumption growth		
	2011-16	2015-16
Renewable electricity (%)	+49.2	-5.2
Other renewables (%)	+11.2	+2.3
Total (%)	+11.4	+2.2
Consumption by sector		
	2011	2016
Industry (TJ)	280 167	175 467
Transport (TJ)	0	0
Households (TJ)	3 611 383	4 126 176
Other (TJ)	77 964	119 303
Renewable share of TFEC	86.4	82.4

Renewable energy consumption in 2016

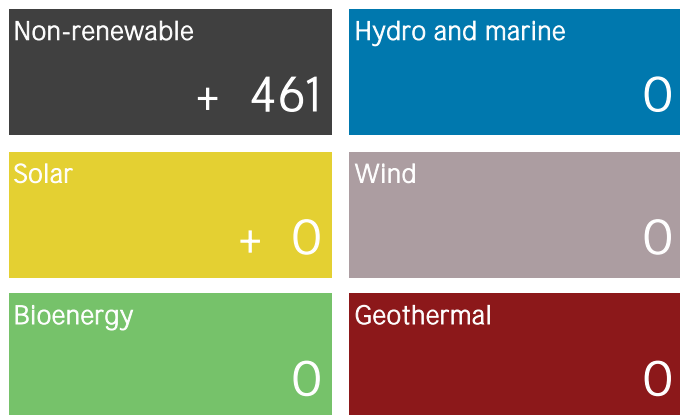


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2018	MW	%
Non-renewable	10 894	84
Renewable	2 143	16
Hydro/marine	2 111	16
Solar	19	0
Wind	3	0
Bioenergy	10	0
Geothermal	0	0
Total	13 037	100

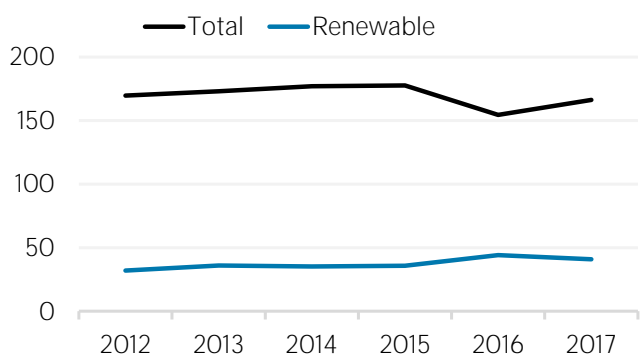
Capacity change (%)	2013-18	2017-18
Non-renewable	+ 38	+ 4.4
Renewable	+ 0	+ 0.0
Hydro/marine	+ 0	0.0
Solar	+ 24	+ 0.9
Wind	+ 45	0.0
Bioenergy	+ 36	0.0
Geothermal	0	0.0
Total	+ 30	+ 3.7

Net capacity change in 2018 (MW)

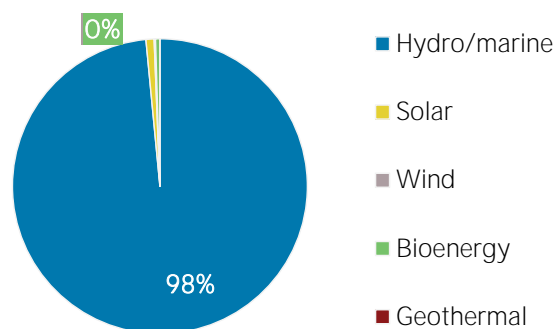


Generation in 2017	GWh	%
Non-renewable	23 950	75
Renewable	7 803	25
Hydro and marine	7 747	24
Solar	28	0
Wind	3	0
Bioenergy	25	0
Geothermal	0	0
Total	31 753	100

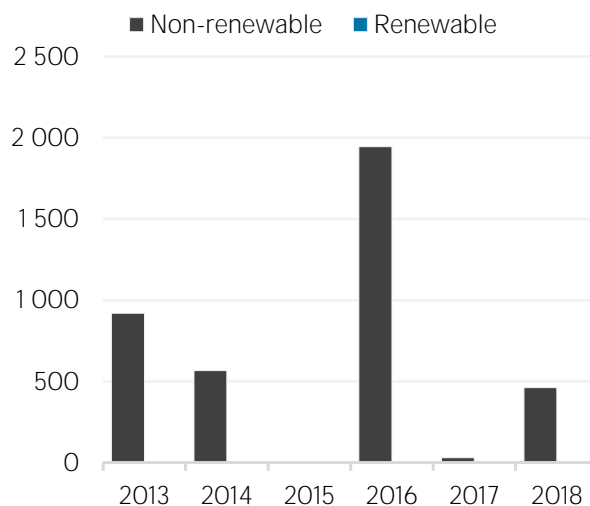
Per capita electricity generation (kWh)



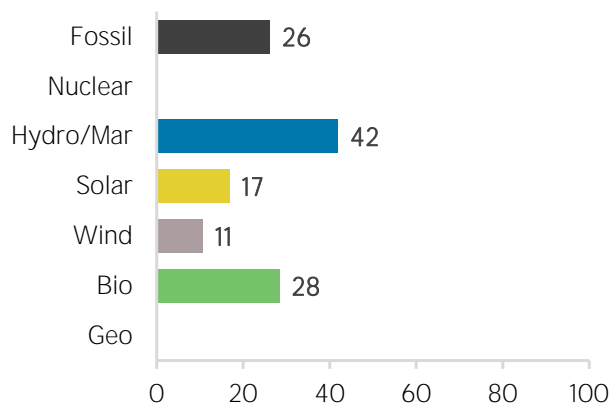
Renewable capacity in 2018



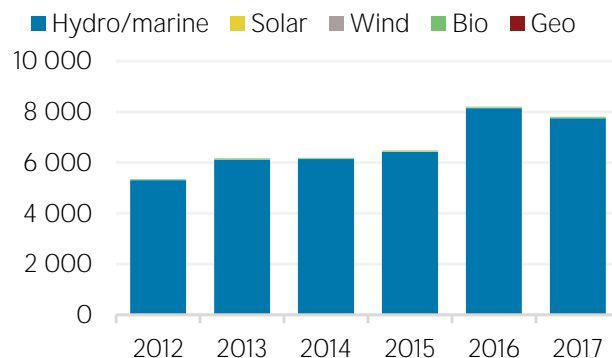
Net capacity change (MW)



Capacity utilisation in 2017 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target	unit
Renewable energy:			
Renewable electricity:	2020	38	%
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):			

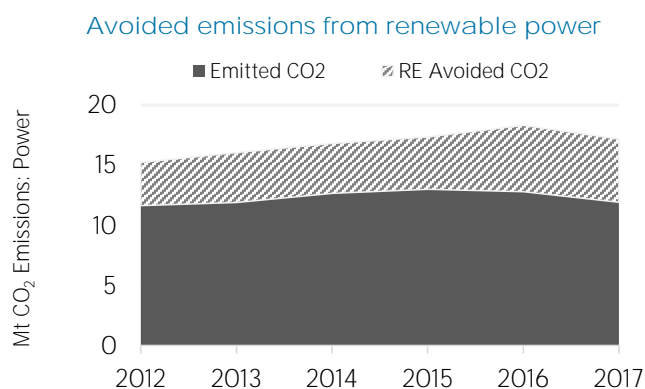
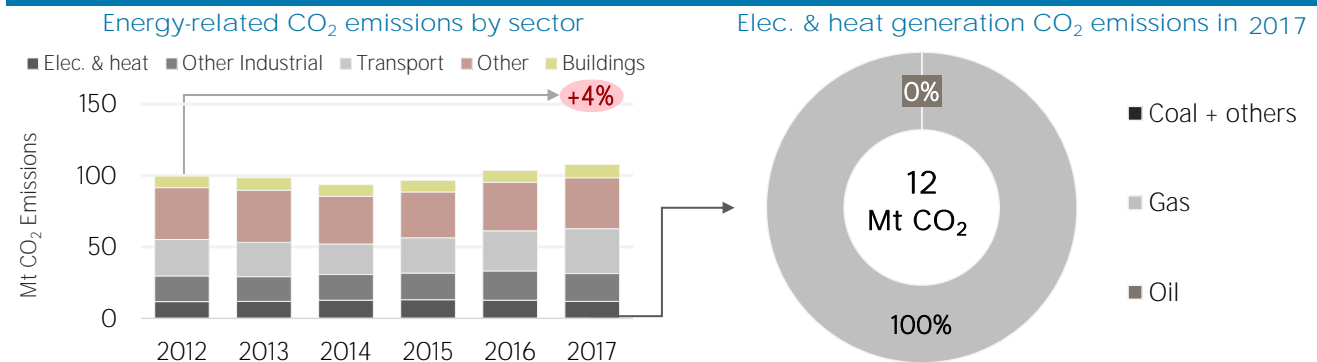
Latest policies, programmes and legislation

1 Nigeria Feed-in Tariff for Renewable Energy Sourced Electricity	2016
2 Nigerian Electricity Regulatory Commission Mini-Grid Regulation 2016	2016
3 Biofuels blending mandate	2013
4 Nigeria Renewable Energy Master Plan	2011
5 Rural Electrification Strategy and Implementation Plan of Nigeria	2006

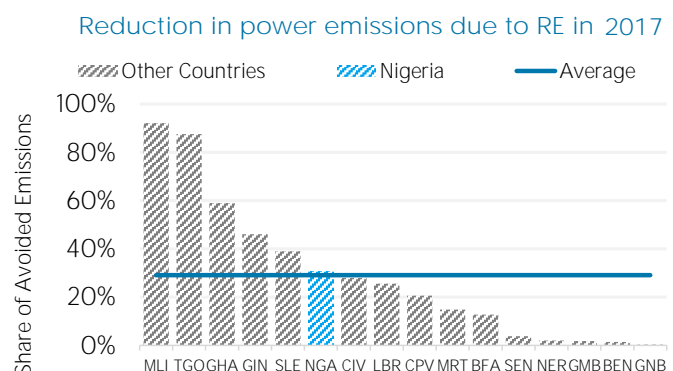
References to sustainable energy in Nationally Determined Contribution (NDC)

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

ENERGY AND EMISSIONS

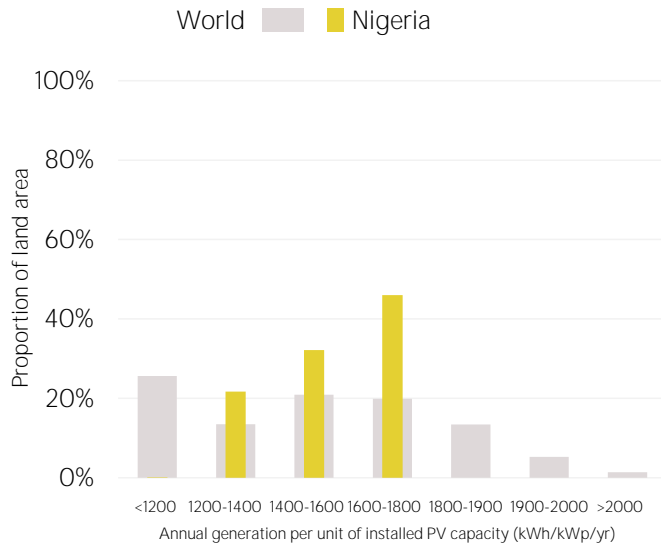


Avoided emissions based on fossil fuel mix used for power

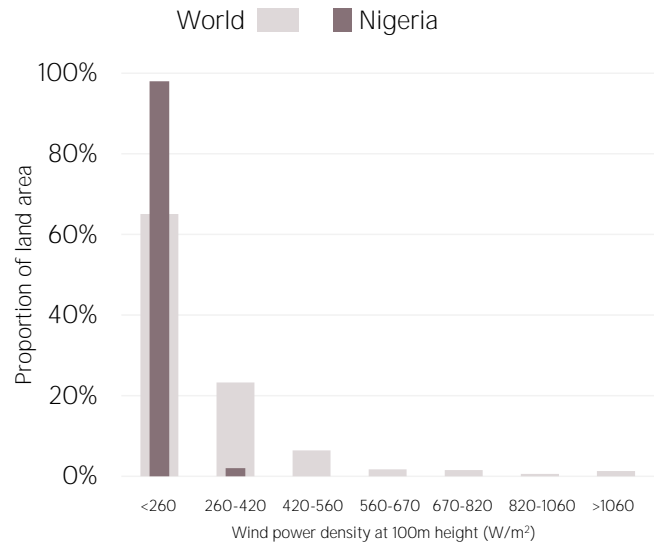


Reduction is RE Avoided divided by sum of avoided and emitted

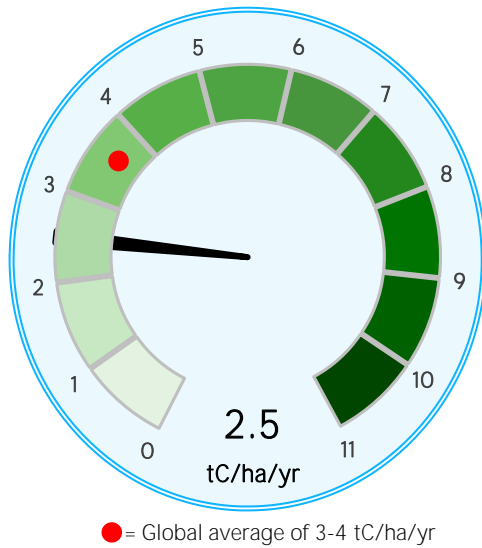
Distribution of solar potential



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/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 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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