

Viet Nam

Sustainable Development Goal 7.2: Energy Indicators (2016)

Renewable energy (% of TFEC)	32.7	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	6.1	Access to clean cooking (% of population)	67

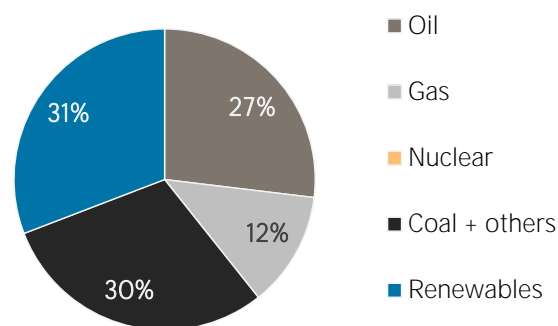
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2011	2016
Non-renewable (TJ)	1 647 703	2 079 537
Renewable (TJ)	859 765	926 879
Total (TJ)	2 507 468	3 006 416
Renewable share (%)	34	31

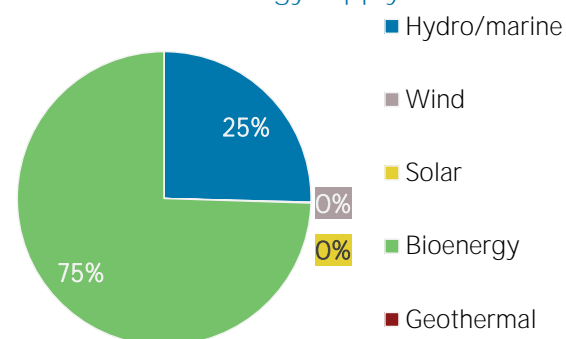
Growth in TPES	2011-16	2015-16
Non-renewable (%)	+26.2	+0.0
Renewable (%)	+7.8	+0.6
Total (%)	+19.9	+0.2

Primary energy trade	2011	2016
Imports (TJ)	561 076	706 647
Exports (TJ)	846 651	449 372
Net trade (TJ)	285 575	- 257 275
Imports (% of supply)	22	24
Exports (% of production)	30	16
Energy self-sufficiency (%)	114	96
Net trade (USD million)	- 1 577	- 4 162
Net trade (% of GDP)	-1.2	-2.0

Total primary energy supply in 2016



Renewable energy supply in 2016



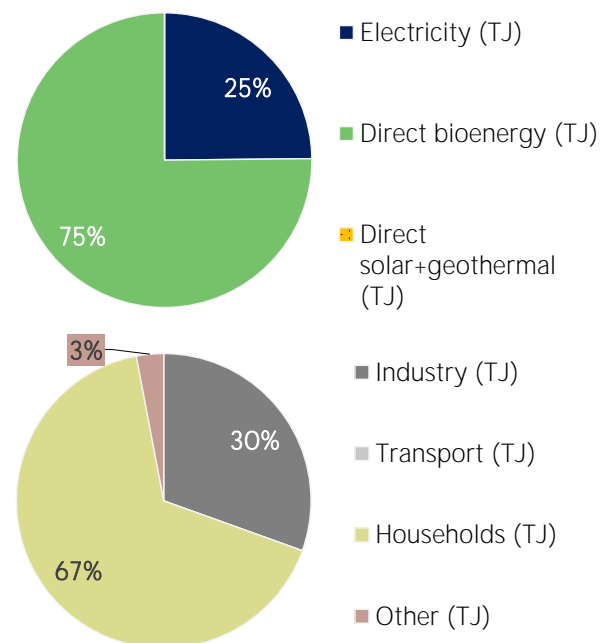
RENEWABLE ENERGY CONSUMPTION

Consumption by source	2011	2016
Electricity (TJ)	183 965	214 608
Direct bioenergy (TJ)	610 732	649 400
Direct solar+geothermal (TJ)	0	0
Total (TJ)	794 697	864 008
Electricity share (%)	23	25

Consumption growth	2011-16	2015-16
Renewable electricity (%)	+16.7	+1.5
Other renewables (%)	+6.3	+0.8
Total (%)	+8.7	+1.0

Consumption by sector	2011	2016
Industry (TJ)	234 884	263 488
Transport (TJ)	0	0
Households (TJ)	542 015	574 719
Other (TJ)	17 798	25 801
Renewable share of TFEC	36.5	32.7

Renewable energy consumption in 2016

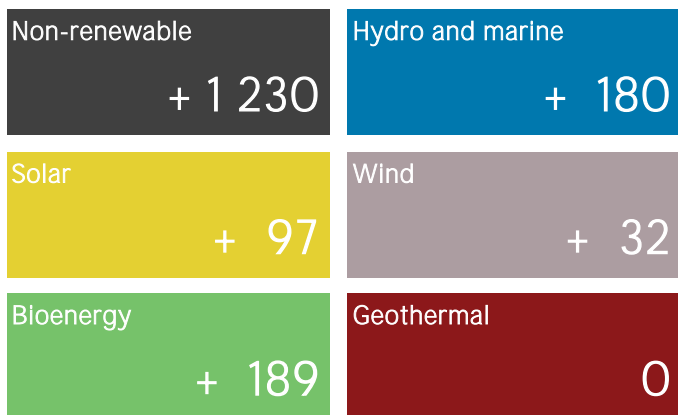


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2018	MW	%
Non-renewable	26 740	59
Renewable	18 712	41
Hydro/marine	17 989	40
Solar	106	0
Wind	237	1
Bioenergy	380	1
Geothermal	0	0
Total	45 451	100

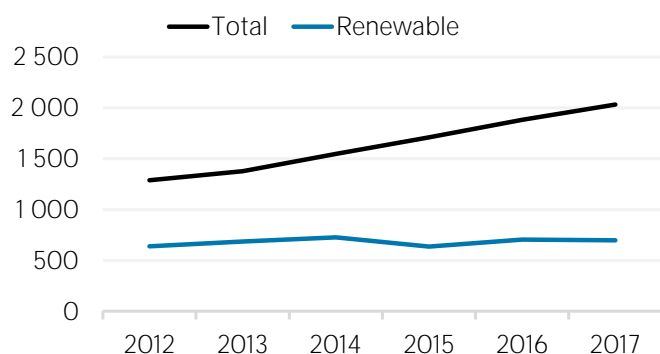
Capacity change (%)	2013-18	2017-18
Non-renewable	+ 51	+ 4.8
Renewable	+ 26	+ 2.7
Hydro/marine	+ 22	+ 1.0
Solar	+ 1 912	+ 1 111.1
Wind	+ 347	+ 15.6
Bioenergy	+ 204	+ 98.4
Geothermal	0	0.0
Total	+ 39	+ 4.0

Net capacity change in 2018 (MW)

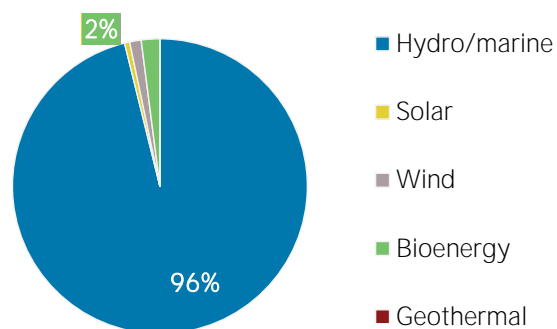


Generation in 2017	GWh	%
Non-renewable	126 405	66
Renewable	65 919	34
Hydro and marine	65 301	34
Solar	9	0
Wind	268	0
Bioenergy	340	0
Geothermal	0	0
Total	192 324	100

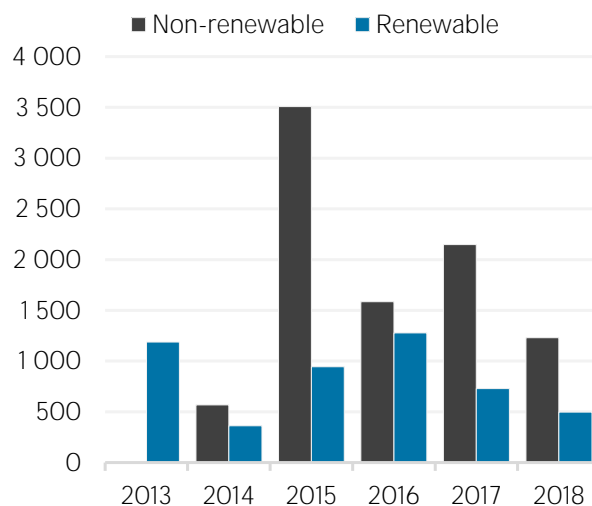
Per capita electricity generation (kWh)



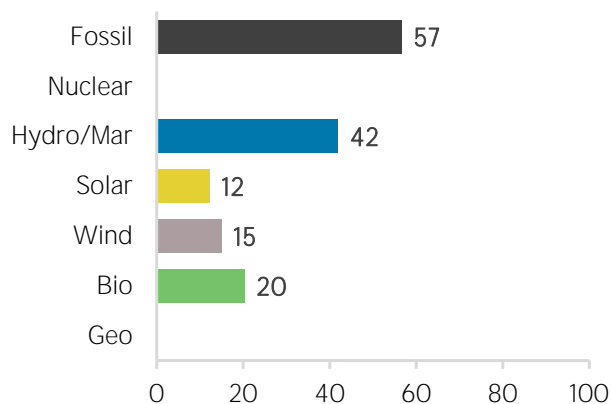
Renewable capacity in 2018



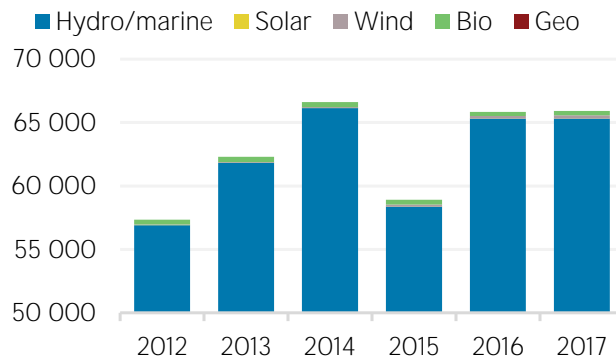
Net capacity change (MW)



Capacity utilisation in 2017 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target	unit
Renewable energy:	2050	100	%
Renewable electricity:	2020	7	%
Renewable capacity:			
Renewable transport:			
Liquid Biofuel blending mandate:			
Other transport targets:			
Renewable heating/cooling:			
Renewable Hydropower	2025	23 400	MW
Off-grid renewable technologies:			
Energy efficiency (Energy):			
Energy efficiency (Electricity):			

Latest policies, programmes and legislation

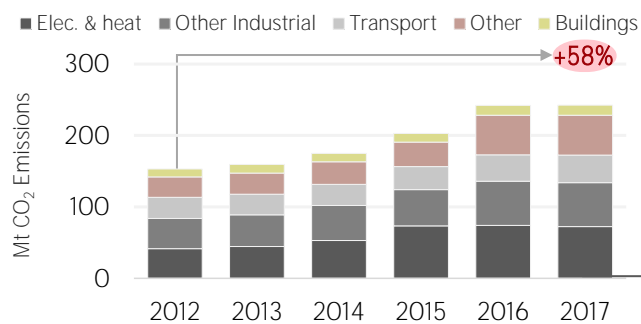
1	National Power Development Plan 7 (PDP7 - revised)	2016
2	Vietnam Renewable Energy Development Strategy 2016-2030 with outlook until 2050 (REDS)	2016
3	Decision on support mechanisms for the development of biomass power project in Vietnam (biomass feed-in tariff)	2014
4	Decision on support mechanisms for the development of waste-to-energy power projects in Vietnam (feed-in tariff)	2014
5	Accelerated depreciation tax relief for renewable energy projects	2013

References to sustainable energy in Nationally Determined Contribution (NDC)

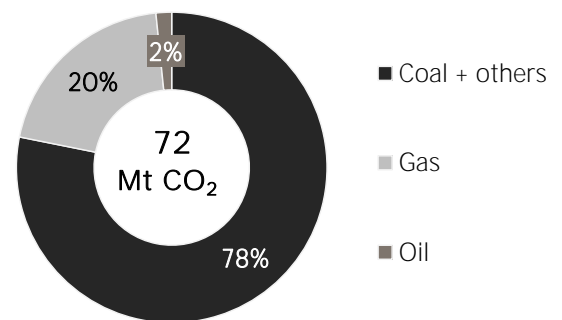
- | | Conditional | Unconditional | unit |
|---------------------------|-------------|---------------|------|
| - Renewable energy | | | |
| - electricity | | | |
| - transport | | | |
| - heating/cooling | | | |
| - Energy efficiency | | | |

ENERGY AND EMISSIONS

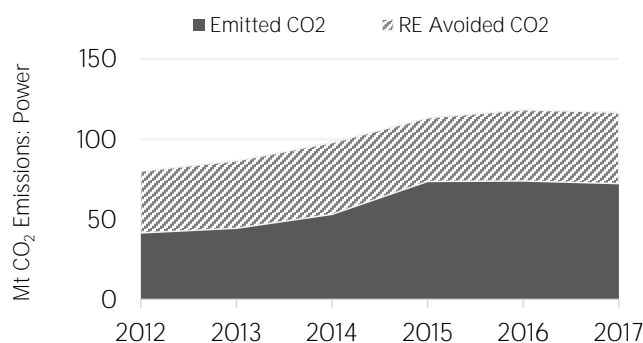
Energy-related CO₂ emissions by sector



Elec. & heat generation CO₂ emissions in 2017

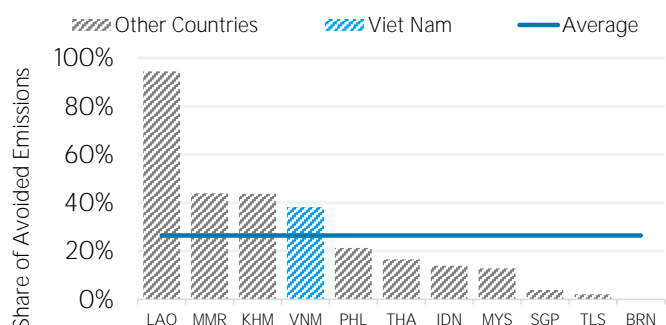


Avoided emissions from renewable power



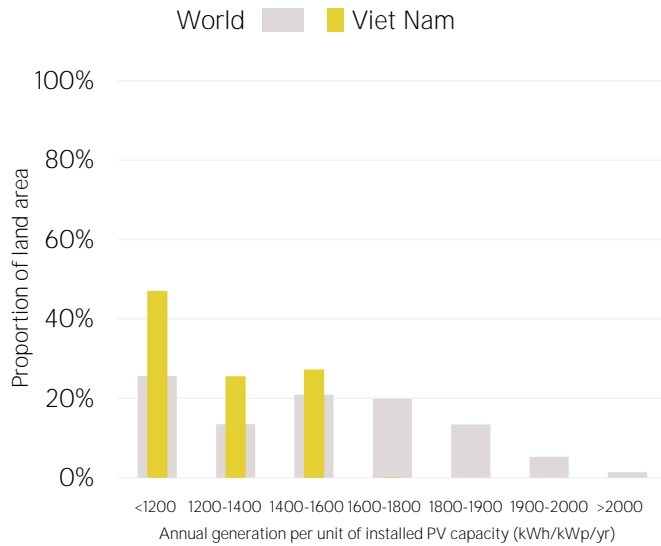
Avoided emissions based on fossil fuel mix used for power

Reduction in power emissions due to RE in 2017

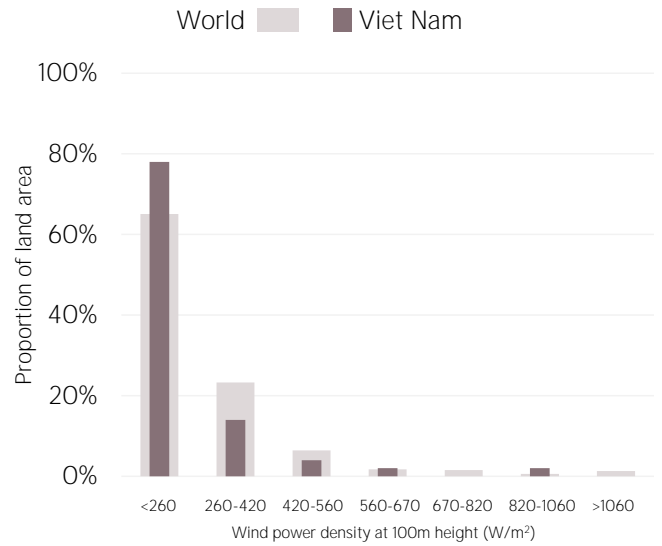


Reduction is RE Avoided divided by sum of avoided and emitted

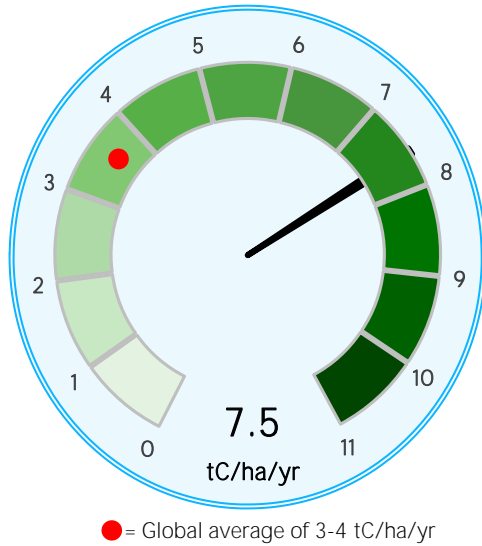
Distribution of solar potential



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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