

Energy supply and consumption

2017, 4th quarter

Use of renewable energy continued growing in 2017

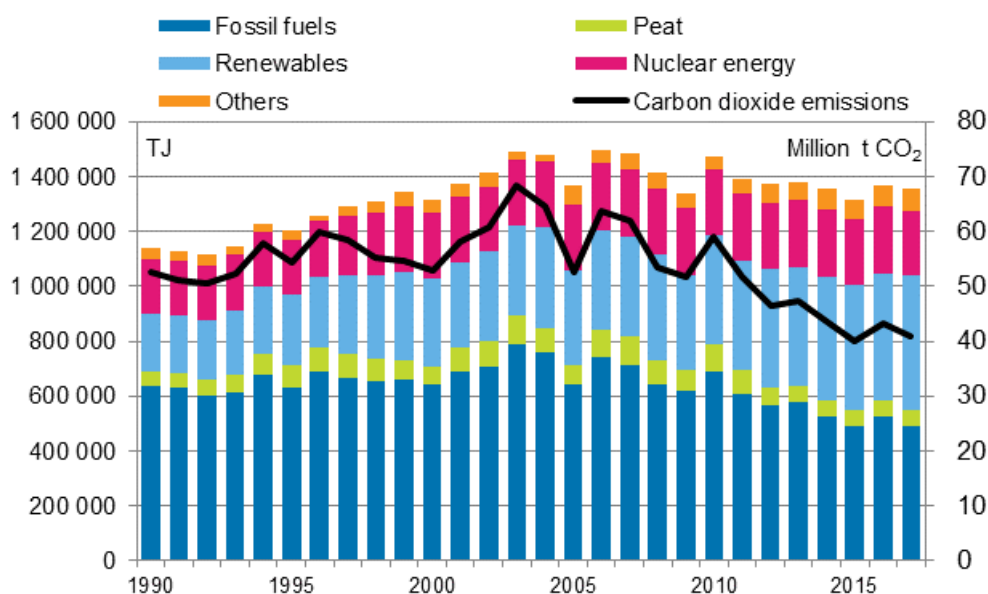
Figures were corrected on 29 March 2018

Text was corrected on 6 April 2018. The correction is indicated in red.

Figure were corrected on 15 May 2018

According to Statistics Finland's preliminary data, total consumption of energy in 2017 amounted to 1.36 million terajoule (TJ), which corresponded to a drop of one per cent compared with the previous year. Electricity consumption amounted to 85.5 terawatt hours (TWh), which is almost the same as one year earlier. The use of renewable energy sources continued growing and their share was record high, 36 per cent of total energy consumption. The share of renewable energy in total consumption has risen by nearly 10 percentage points in the 2010s. The use of fossil fuel and peat decreased by five per cent, and correspondingly carbon dioxide emissions from energy production decreased by five per cent in 2017.

Total energy consumption and carbon dioxide emissions 1990–2017*
 (The unit of the left vertical axis has been corrected on 14 May 2018)



In 2017, the consumption of renewable energy sources grew by nearly 6 per cent and their share of total energy consumption was record high, 36 per cent. The consumption of wood fuels grew by 3.5 per cent and they remained the most important individual energy source in Finland with a share of 27 per cent. The growth was due to an increase in the burning of by-products and waste wood from the forest industry. Of renewable energy sources, wind power grew relatively most as its production rose by as much as 57 per cent. In total energy consumption, the share of wind power is still low, 1.3 per cent. The use of biofuels in road transport started to rise again after decrease in the preceding year.

EU targets for renewable energy are calculated relative to final energy consumption. Calculated in this manner, the share of renewable energy sources in Finland rose to more than 40 per cent in 2017 according to Statistics Finland's preliminary data. Finland's target for the share of renewable energy is 38 per cent of final energy consumption in 2020, and this share was reached for the first time in 2014. Share of renewable energy in final consumption in Finland is the **second** largest in the EU.

The use of fossil fuels decreased by six per cent from the previous year and their share in total energy consumption was 36 per cent. Of fossil fuels, the consumption of coal (including hard coal, coke, and blast furnace and coke oven gas) and natural gas both decreased by eight per cent. Finland's first liquefied natural gas terminal was for the first time in year-round use in 2017. The consumption of oil fell by three per cent, but it retained its position as the second most important individual energy source in Finland with its share of 23 per cent in total energy consumption. The consumption of energy peat remained almost unchanged from the year before.

Domestic production of electricity was 65 TWh in 2017, which was around two per cent less than one year ago. Around one-third of electricity was produced with nuclear energy. Combined heat and power production had the second biggest share in electricity production, 32 per cent. Hydro power accounted for 23 per cent of electricity production. The water situation in Finland has been weaker than usual in the past few years and the production of hydro power went down by six per cent in 2017. The production of wind power continued its yearly growth by an increase of 57 per cent and its share of electricity production reached seven per cent last year. According to preliminary data, the production of solar power grew by 49 per cent, but its share of Finland's electricity production was still under half a per mil.

Net imports of electricity to Finland amounted to 20.4 TWh, which corresponded to 24 per cent of total electricity consumption. Compared with 2016, net imports of electricity grew by eight per cent, which was mainly caused by a 44 per cent fall in exports of electricity. Finland's largest electricity import countries in 2017 were Sweden and Russia. Most electricity was imported from Sweden, 15.3 TWh. Electricity imports from Russia were 5.8 TWh. Almost all exports of electricity from Finland were directed to Estonia, amounting to 1.7 TWh.

Last year, diverse energy products were imported into Finland to the value of EUR 8.8 billion, which was 21 per cent more than one year earlier. Most energy products were imported from Russia, whose share of the value of imports was around 61 per cent. Respectively, energy products were exported from Finland to the value of EUR 4.7 billion, which was seven per cent up on the year before.

Final consumption of energy went up by one per cent. Of final consumption sectors, the change in manufacturing was biggest with a growth of two per cent and its share of total final consumption was 46 per cent. Nearly the same amount of energy for space heating was consumed as in the previous year, which corresponded to a share of 26 per cent in final energy consumption. Energy use of transport remained nearly unchanged with a share of 17 per cent.

Total energy consumption by source (TJ) and CO2 emissions (Mt)

Energy source, TJ ⁴⁾	2017*	Annual change-%*	Percentage share of total energy consumption*
Oil	314,169	-3	23
Coal ¹⁾	116,319	-8	9
Natural gas	66,074	-8	5
Nuclear energy ²⁾	235,367	-3	17
Net imports of electricity ³⁾	73,532	8	5
Hydro power ³⁾	52,712	-6	4
Wind power ³⁾	17,286	57	1
Peat	56,123	0	4
Wood fuels	361,432	4	27
Others	62,693	4	5
TOTAL ENERGY CONSUMPTION	1,355,707	-1	100
Bunkers	43,064	11	.
CO2 emissions from energy sector	41	-5	.

1) Coal: includes hard coal, coke, blast furnace gas and coke oven gas.

2) Conversion of electricity generation into fuel units: Nuclear power: 10.91 TJ/GWh (33% total efficiency)

3) Conversion of electricity generation into fuel units: Hydro power, wind power and net imports of electricity: 3.6 TJ/GWh (100%)

4) *Preliminary

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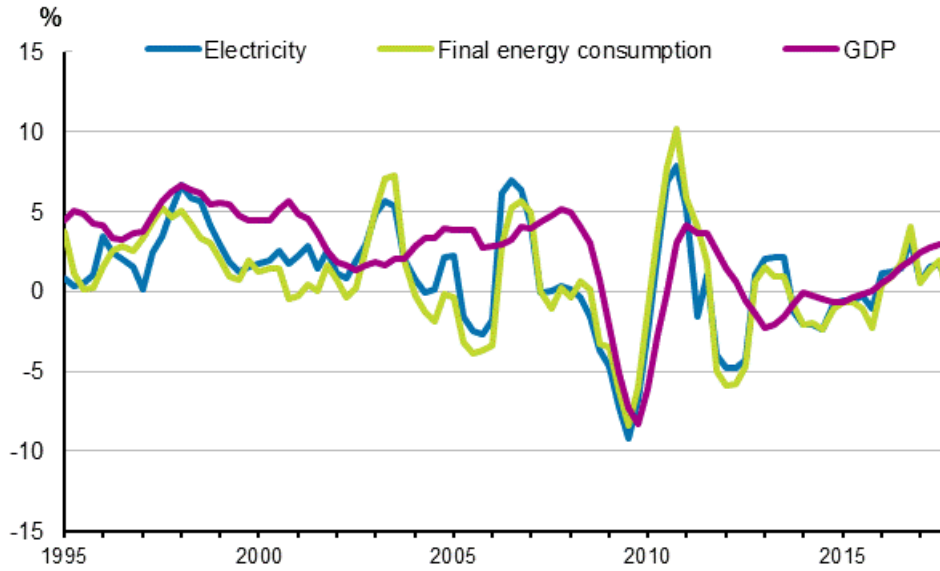
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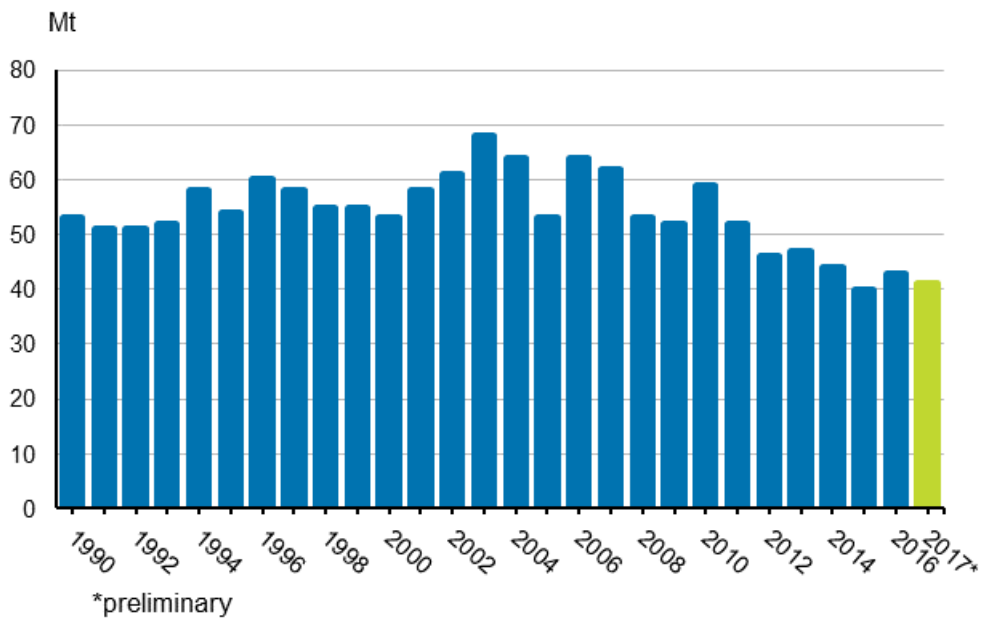
Appendix figures

Appendix figure 1. Changes in GDP, Final energy consumption and electricity consumption 1995–2017*



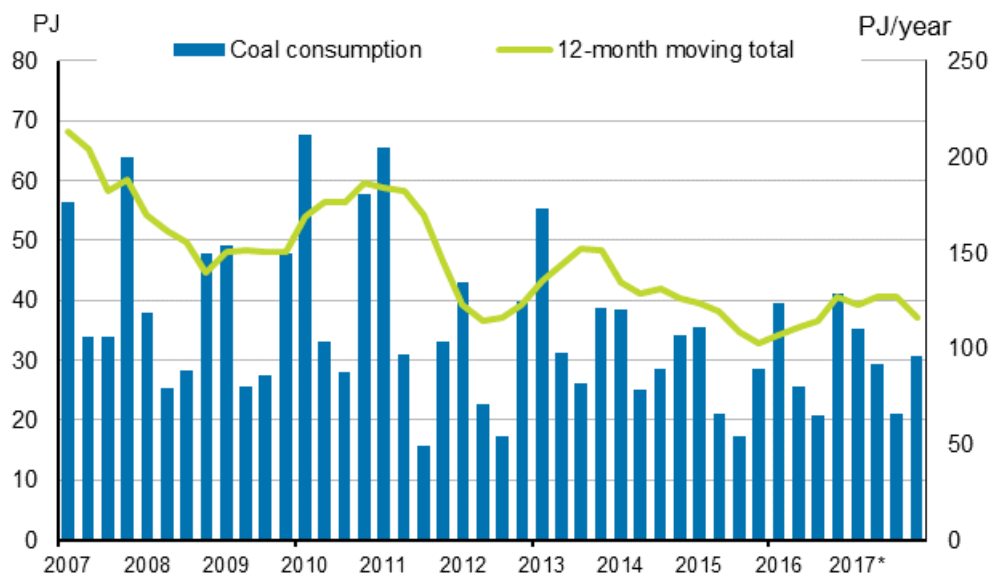
*preliminary

Appendix figure 2. Carbon dioxide emissions from fossil fuels and peat use



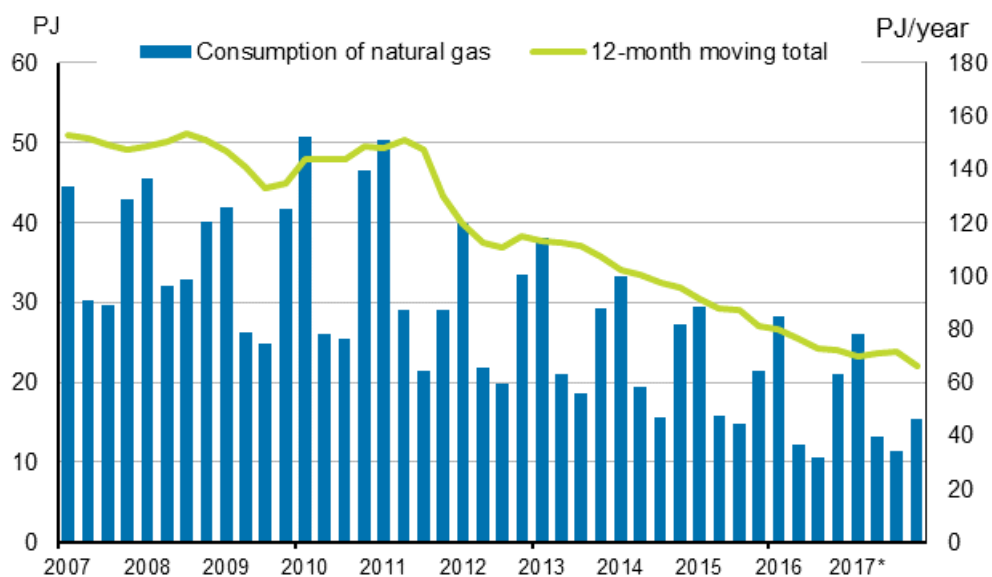
*preliminary

Appendix figure 3. Coal consumption



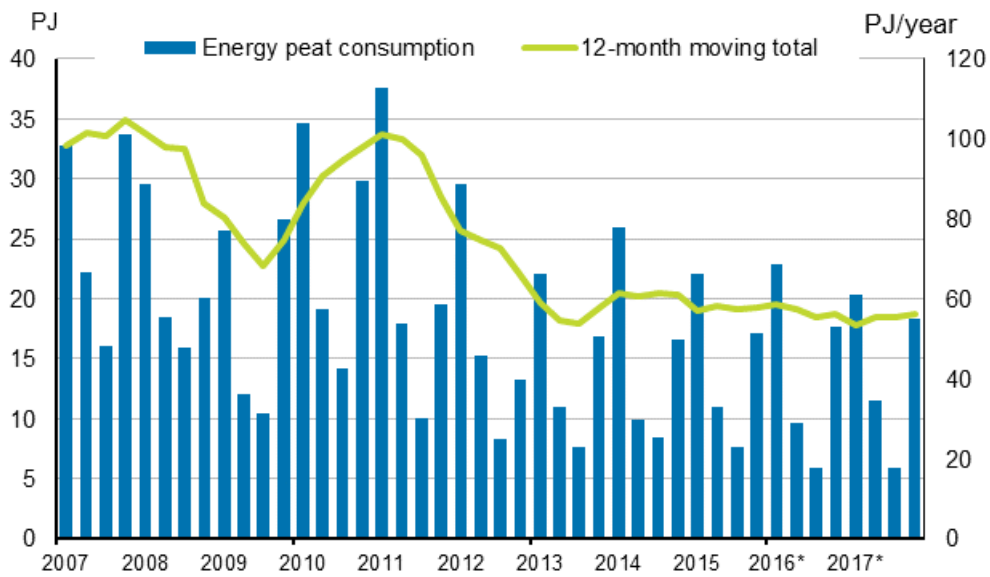
*preliminary

Appendix figure 4. Consumption of natural gas



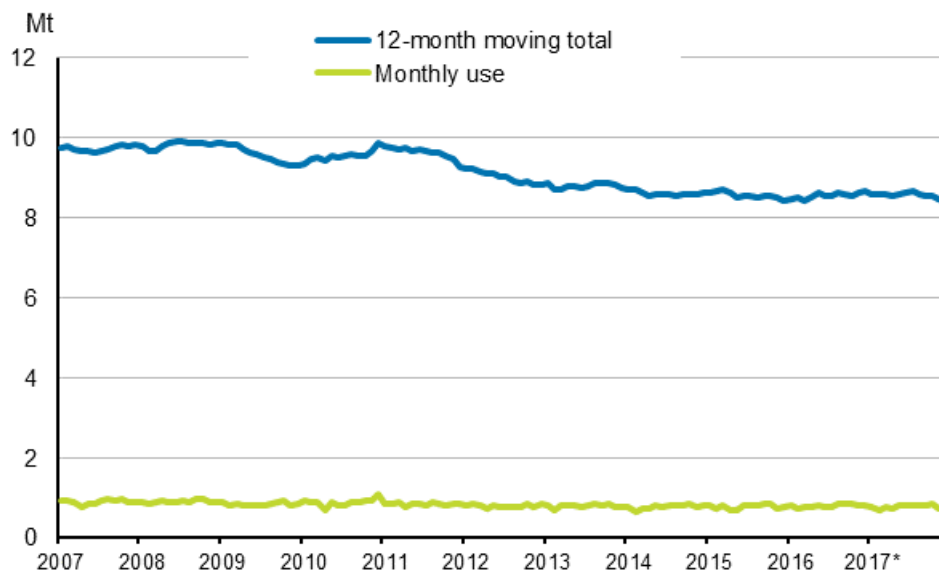
Source: Gasum Oy, *preliminary

Appendix figure 5. Energy peat consumption



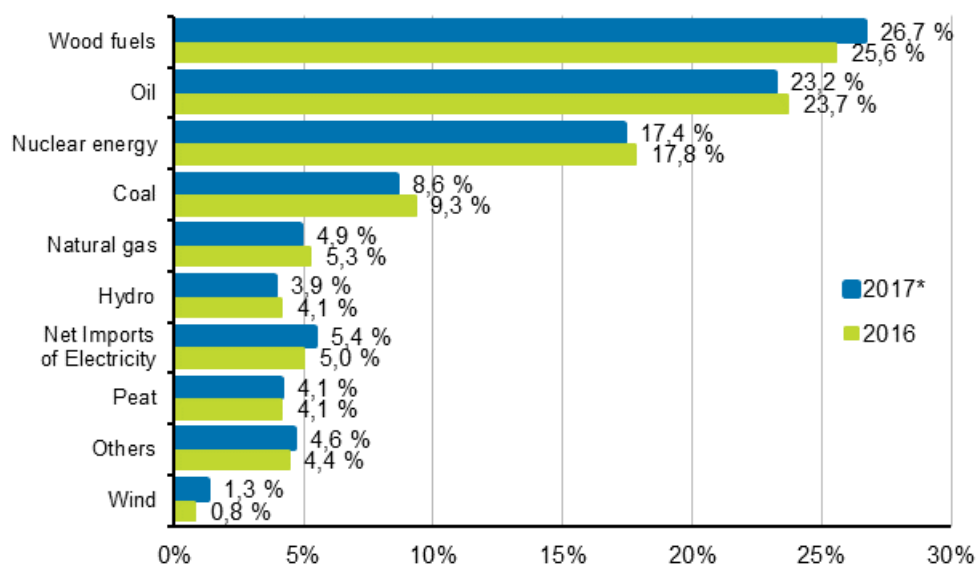
Source: The Bioenergy Association of Finland, *preliminary

Appendix figure 6. Domestic oil deliveries



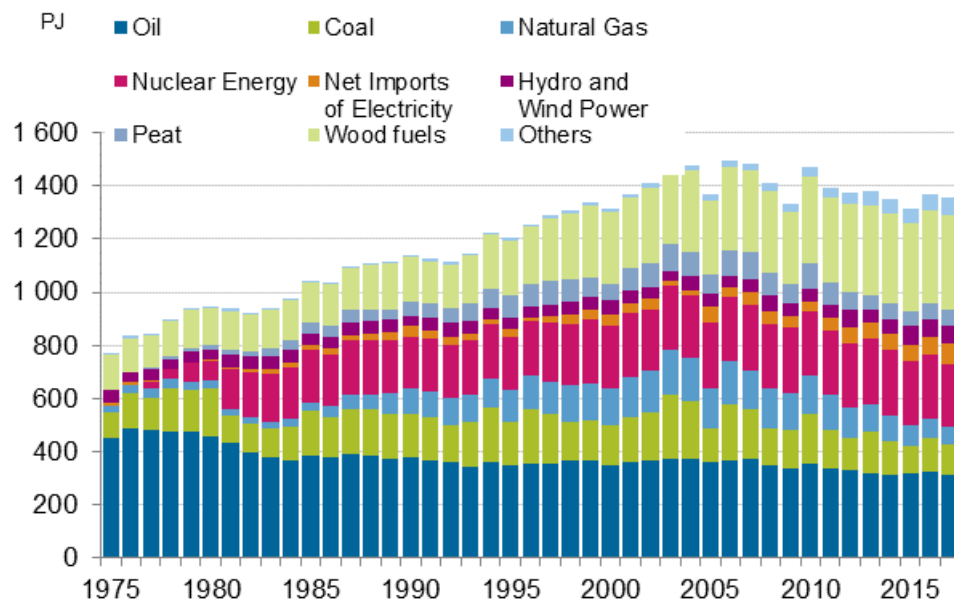
Source: Finnish Petroleum and Biofuels Association

Appendix figure 7. Share of total energy consumption 2016–2017*



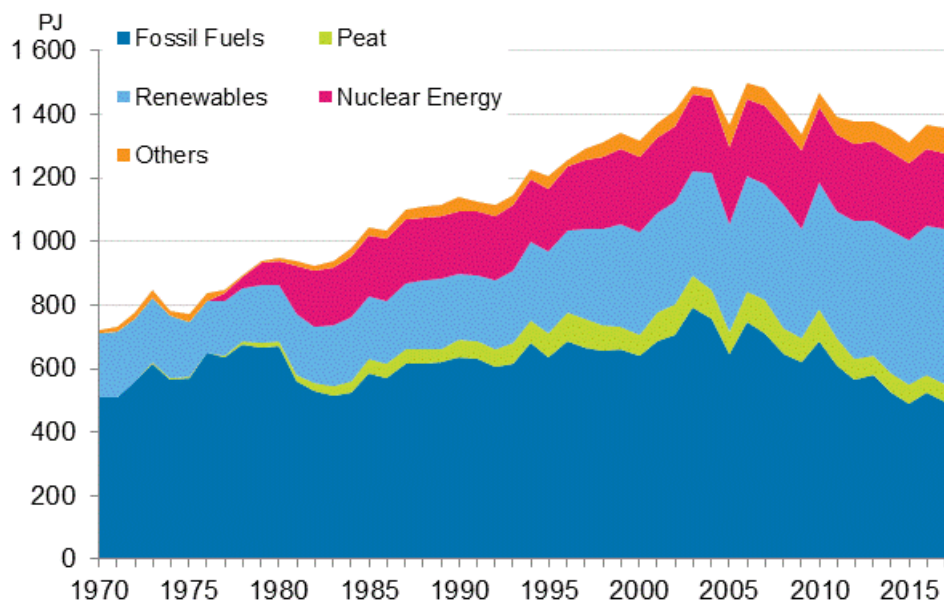
*preliminary

Appendix figure 8. Total energy consumption 1975–2017*



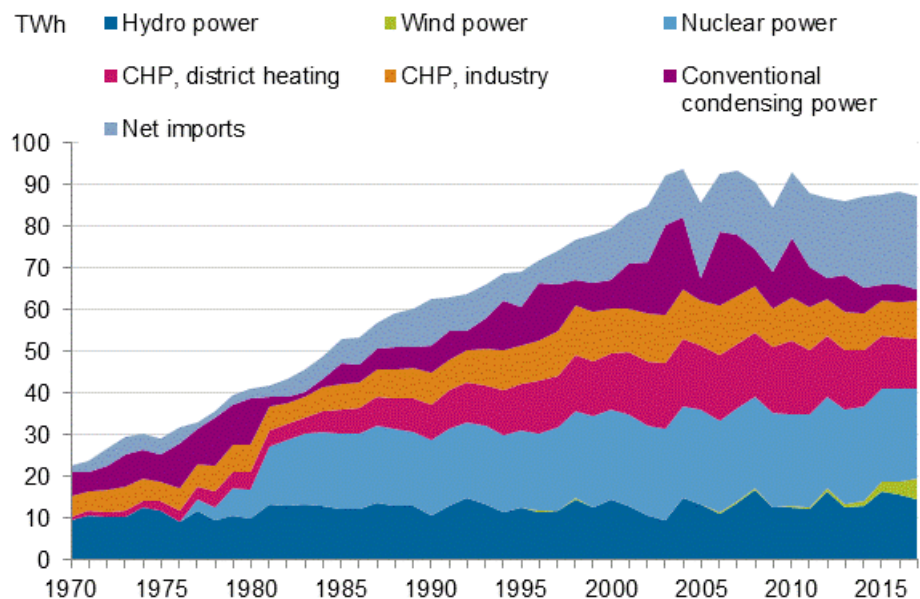
*preliminary

Appendix figure 9. Fossil fuels and renewables 1970–2017*



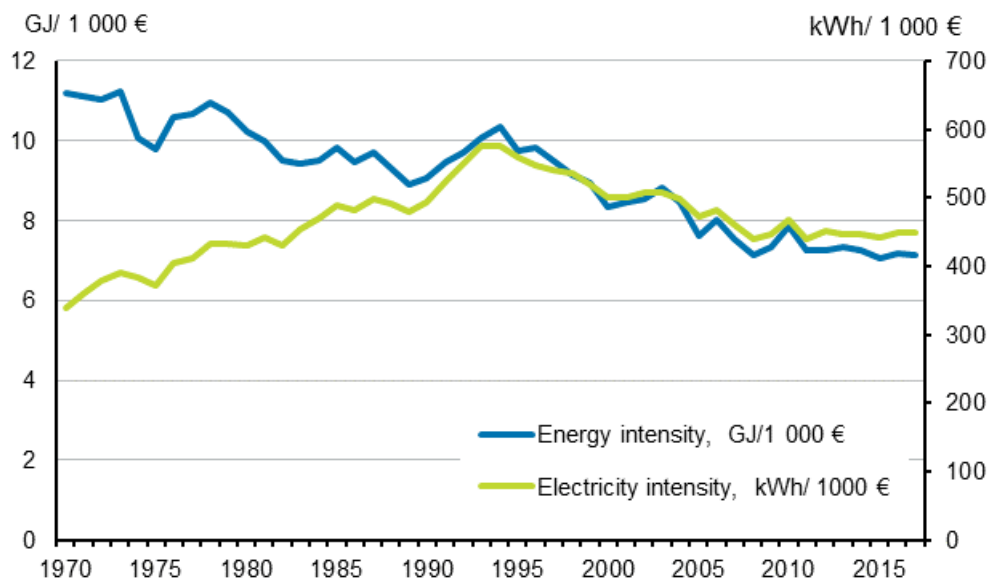
*preliminary

Appendix figure 10. Electricity supply 1970–2017* (Correction on 29 March 2018 the figure legends and colours were corrected to correspond to each other.)



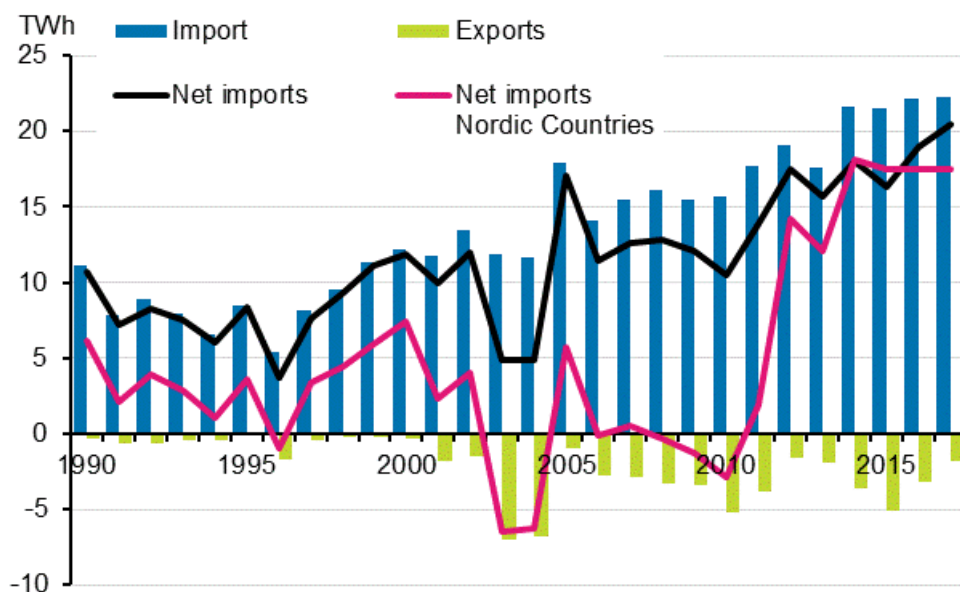
*preliminary

Appendix figure 11. Energy and electricity intensity 1970–2017*



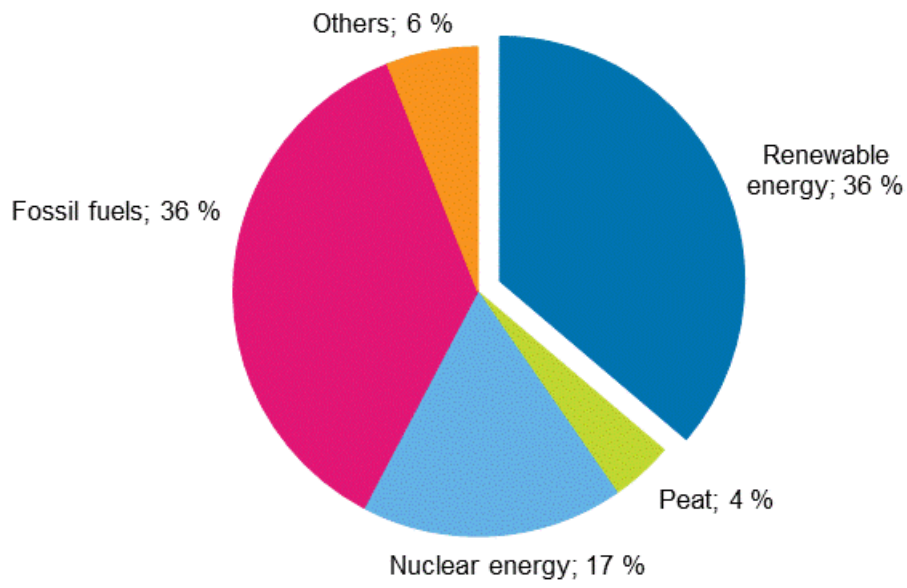
*year 2016 preliminary

Appendix figure 12. Imports and exports of electricity 1990–2017*



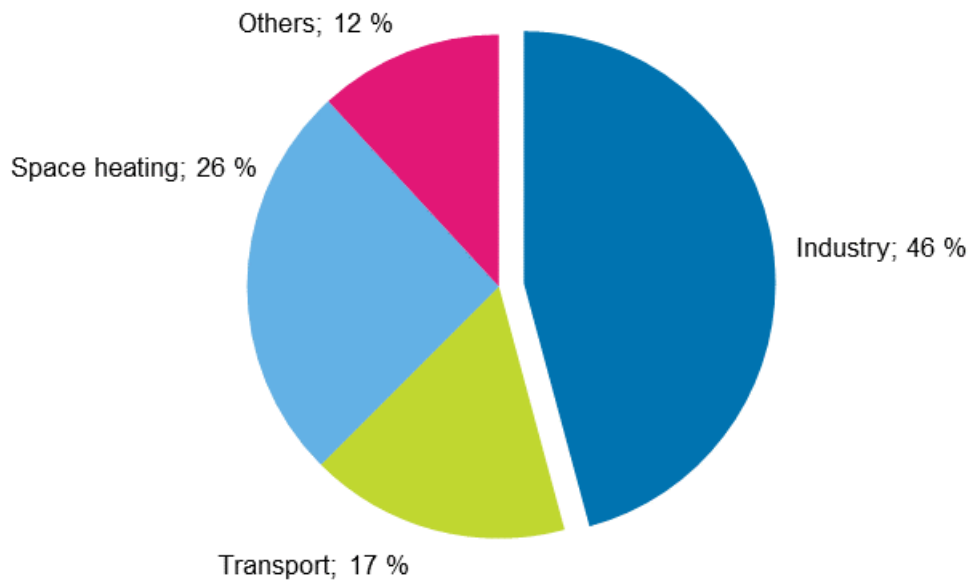
Source: Finnish Energy Industries, *preliminary

Appendix figure 13. Share of renewables of total primary energy 2017*



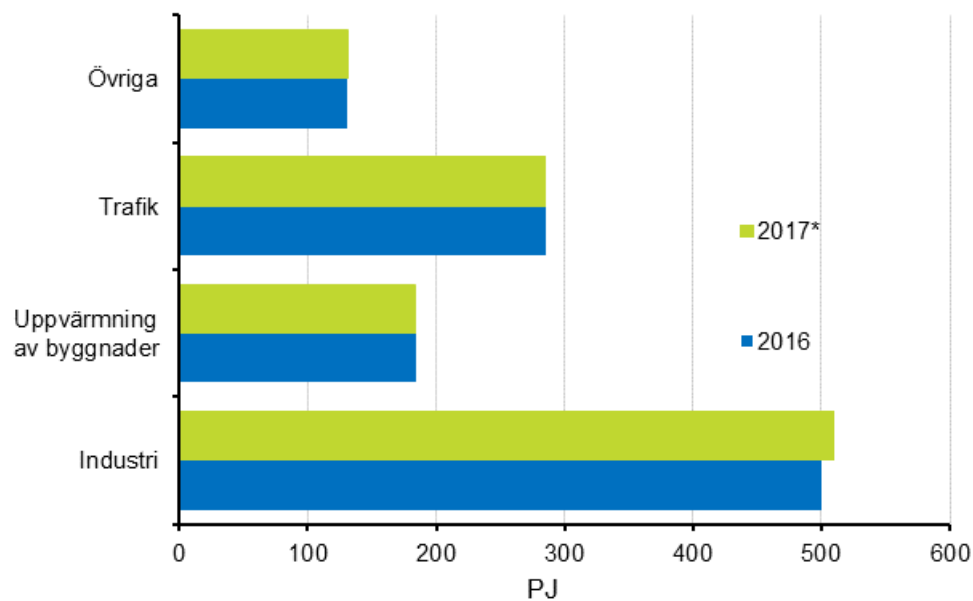
*preliminary

Appendix figure 14. Final energy consumption by sector 2017*



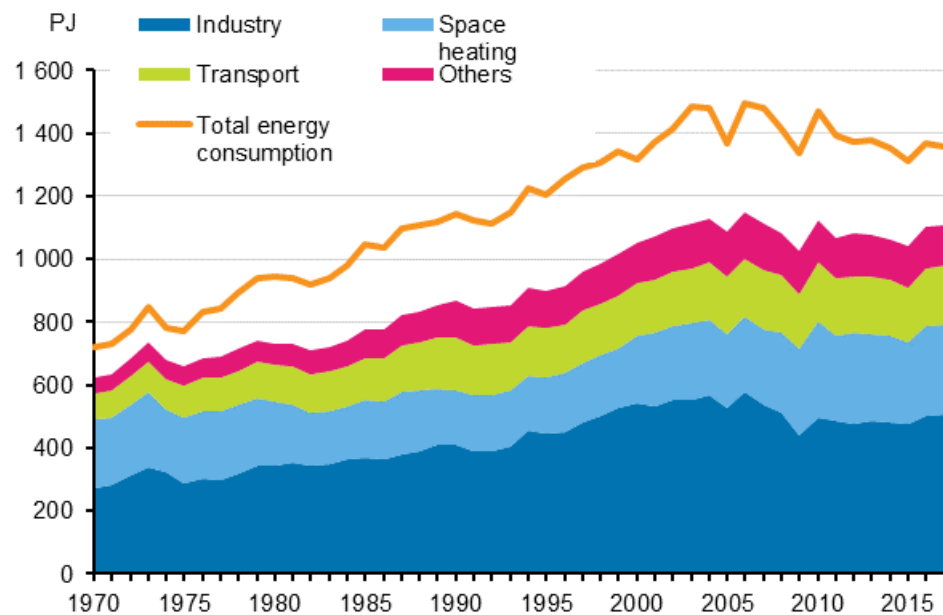
*preliminary

Appendix figure 15. Final energy consumption by sector 2016 and 2017*



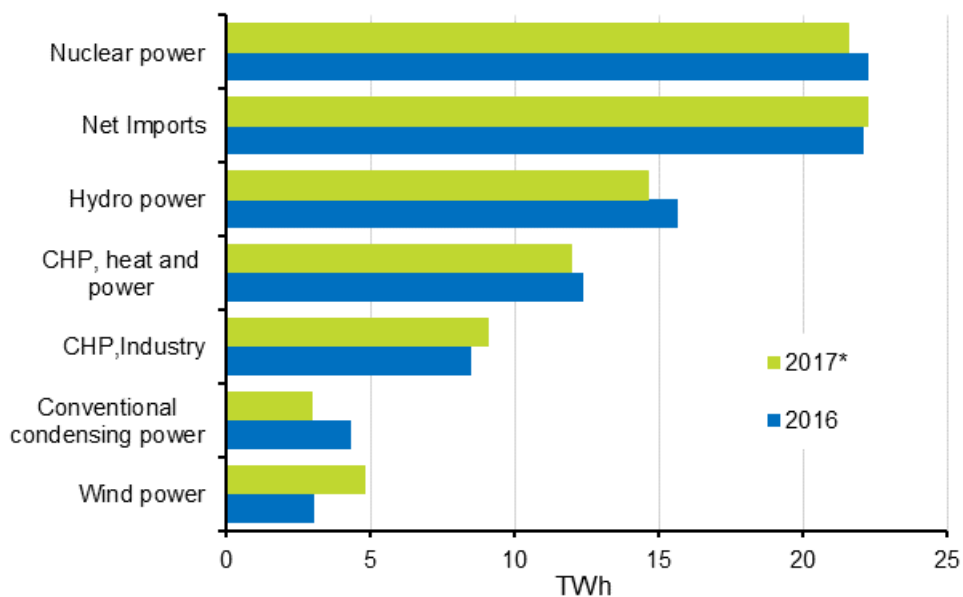
*preliminary

Appendix figure 16. Total energy consumption and final energy consumption 1970–2017*



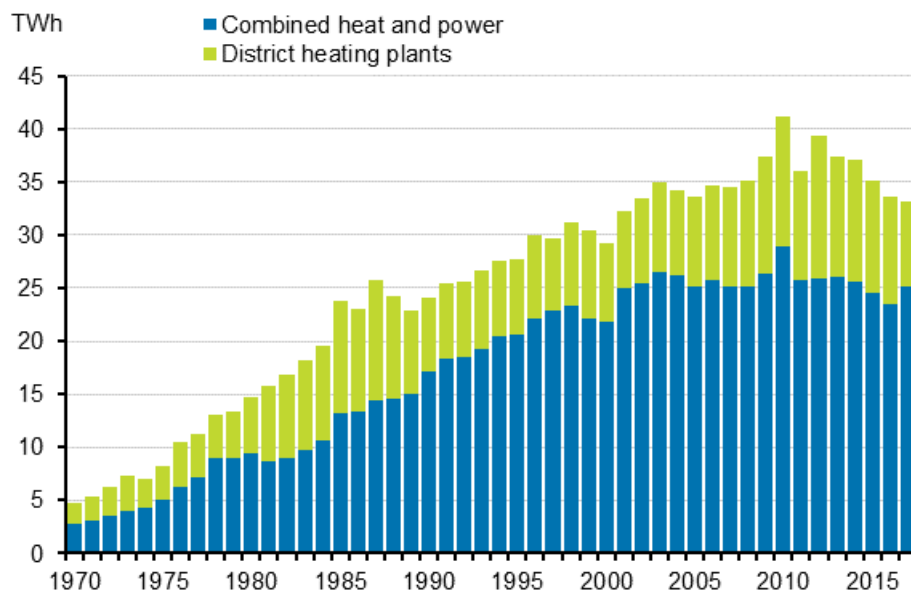
*preliminary

Appendix figure 17. Electricity supply 2016–2017*



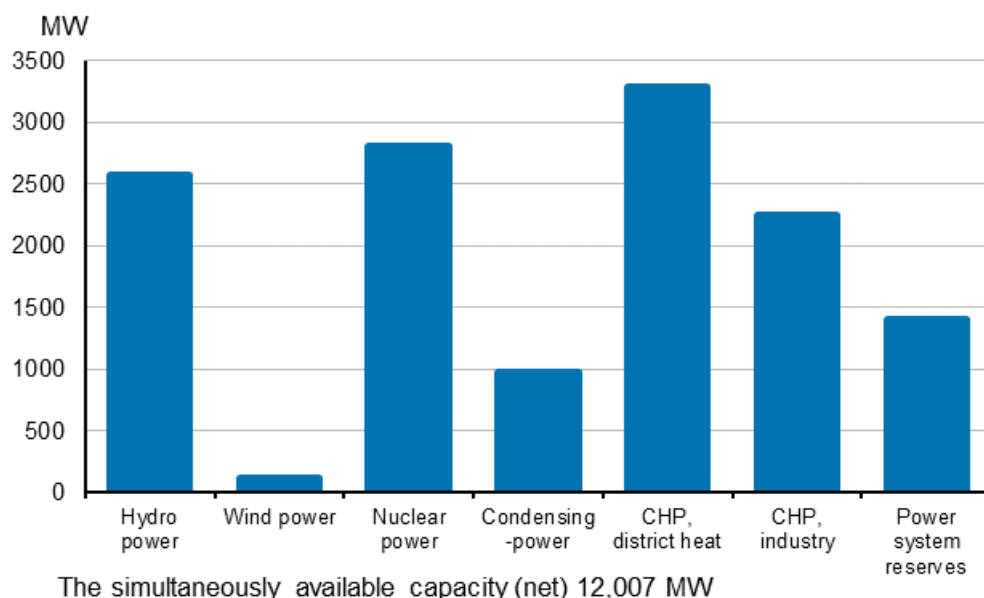
Source: Finnish Energy Industries, *preliminary

Appendix figure 18. Production of district heat 1970–2017*



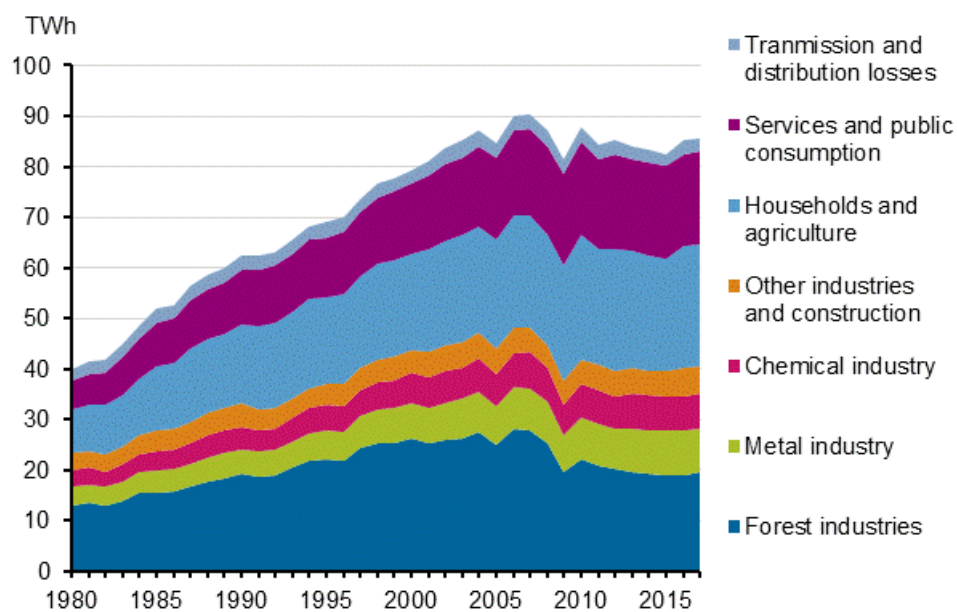
Source: Finnish Energy Industries *preliminary

Appendix figure 19. Electricity generation capacity in peak load period in the beginning of the year 2018



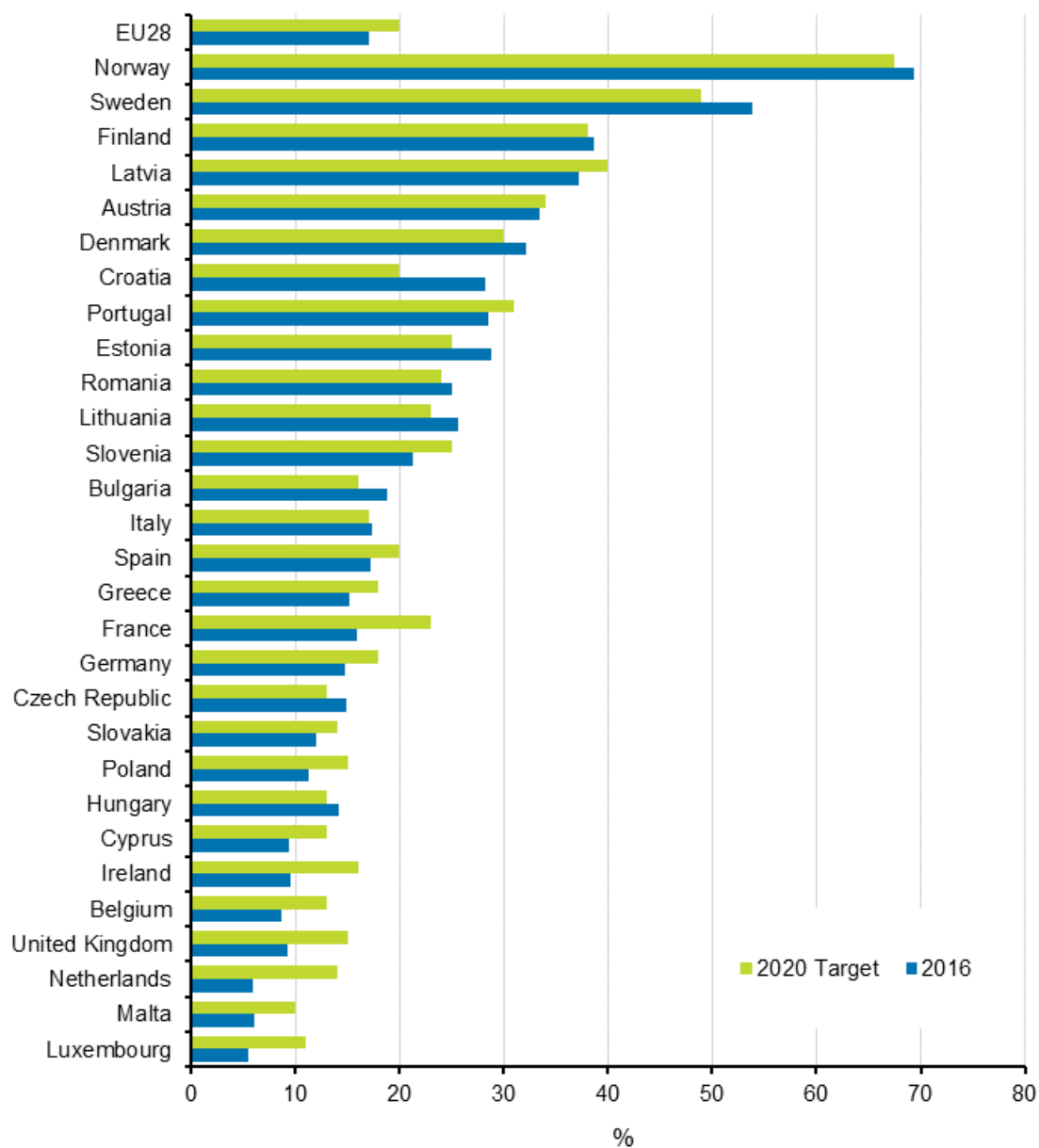
Source: Fingrid Oyj and the Energy Authority

Appendix figure 20. Electricity consumption by sector 1980–2017*



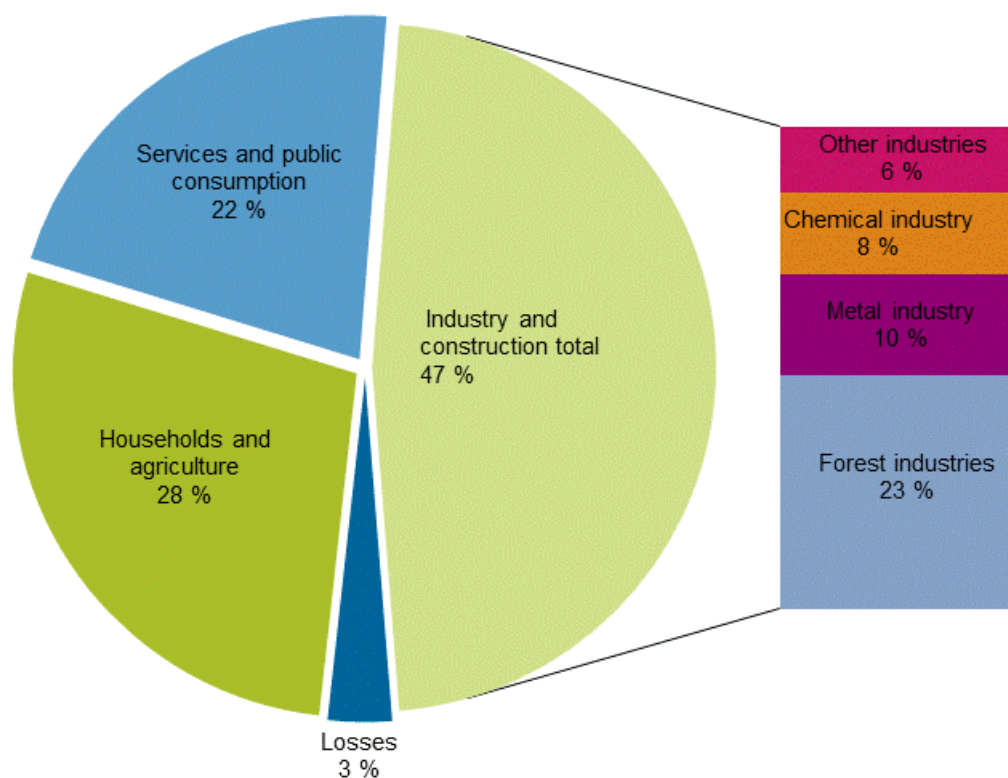
Source: Finnish Energy Industries, *preliminary

Appendix figure 21. Renewable energy as a proportion of final energy consumption in 2016, and the target for 2020



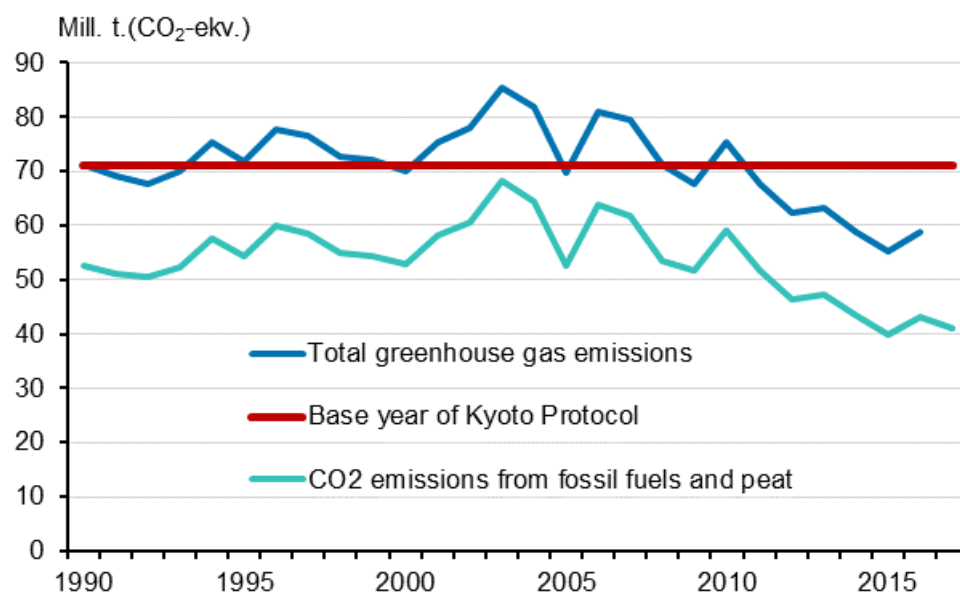
Source: Eurostat

Appendix figure 22. Electricity consumption by sector 2017*



Source: Statistics Finland, *preliminary

Appendix figure 23. Finland's greenhouse gas emissions 1990–2017*
 (Correction on 29 March 2018 the Kyoto base year level for the years 2016 and 2017.)



Revisions in these statistics

The data of the statistics have become revised according to the table below. For more information about data revisions, see Section 3 of the quality description (only in Finnish).

Revisions to data on annual changes in total energy consumption¹⁾

Total energy consumption and quarter		Annual change (%)		Revision (%-point)
		1st release	Latest release 28th March 2018 (%)	
	I-IV 2017	.	-1	.
	I/2017	-4	-6	-2
	II/2017	5	4	-1
	III/2017	5	4	-1
	IV/2017	.	-3	.

1) The revisions describe the difference between the annual change percentages of the latest and first releases in percentages. The first release refers to the time when preliminary data for the statistical reference quarter in question were released for the first time.

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Source: Statistics Finland, Energy supply and consumption