

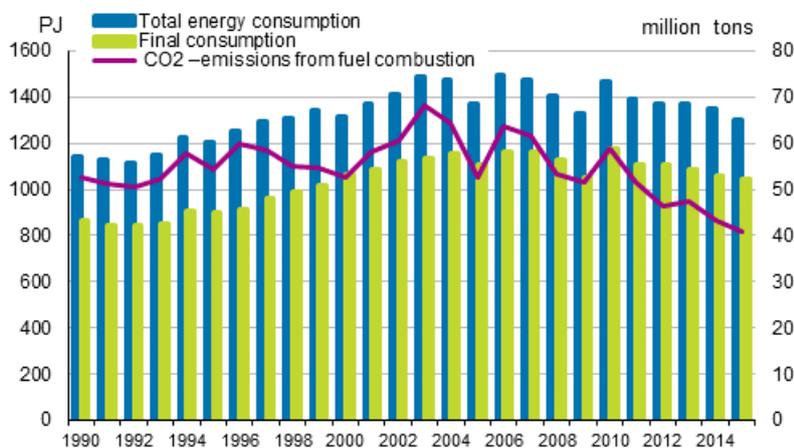
Energy supply and consumption

2015, 4th quarter

Total energy consumption fell by 3 per cent in 2015

According to Statistics Finland’s preliminary data, total energy consumption in 2015 amounted to 1,301 PJ (petajoule), or 361 TWh, which was three per cent less than in 2014. Electricity consumption amounted to 82.5 TWh, down by around one per cent year-on-year. The record warm weather last year decreased the need for heating energy compared with 2014. Among energy sources, the consumption of coal declined by 18 per cent and that of natural gas by 16 per cent. Carbon dioxide emissions from the production and use of energy decreased by six per cent.

Total energy consumption, final consumption and carbon dioxide emissions 1990–2015*



Among individual energy sources, the largest reduction of 18 per cent was seen in the consumption of coal (including hard coal, coke, and blast furnace and coke oven gas), which was also affected by two coal condensate plants being transferred into long-term preservation due to profitability problems. Consumption of natural gas also contracted by 16 per cent, that of peat by 11 per cent, and of wood fuels by two per cent. The consumption of oil remained at last year’s level. The main energy sources are wood fuels with a 26 per cent share and oils with a 24 per cent share.

The use of fossil fuels decreased by seven per cent from the previous year and their share in the total energy consumption was 37 per cent. The use of renewable energy increased by two per cent and the share rose close to that of fossil fuels, to 35 per cent. EU targets for renewable energy are calculated relative to final energy consumption and in Finland this share has been three to five percentage points higher than the share calculated from total energy consumption. Finland's target for the share of renewable energy is 38 per cent of final energy consumption in 2020, which was reached for the first time in 2014.

Final consumption of energy went down by one per cent. According to preliminary data, the share of manufacturing in final energy consumption was 45 per cent, which was unchanged from twelve months before. The share of space heating of buildings was one-quarter of the final consumption of energy, which was 5 per cent less than one year ago. The use of energy consumption in transport increased by one per cent and its share was 17 per cent.

Domestic production of electricity was 66.2 TWh, which was one per cent more than one year ago. Most electricity was produced with nuclear power, which accounted for 34 per cent of the total. The warmer than average weather last year affected the drop in the volume of electricity generated in combined heat and power production by nearly seven per cent. The share of combined production in the production of electricity was still second highest at 31 per cent. The low price of electricity on the Nordic electricity market affected, in particular, condensing power, the production of which declined by 31 per cent and the share contracted to seven per cent. Thanks to the improved water situation, the share of electricity produced with hydro power grew to 25 per cent. Electricity produced with wind power increased by 111 per cent and its proportion of electricity production stood at nearly four per cent.

In 2015, net imports of electricity to Finland was 16.3 TWh, which is nine per cent less than in the record year 2014. The share of net imports in the electricity consumed in Finland was 20 per cent. Most electricity was imported from Sweden, 17.4 TWh. Electricity imports from Russia increased by 16 per cent to 3.9 TWh. Nearly all electricity exports were directed at Estonia, to where more electricity was exported than ever before, 5.0 TWh. In June, electricity was exported for the first time to Russia for commercial reasons.

Last year, diverse energy products were imported into Finland to the value of EUR 7.8 billion, which was 36 per cent less than one year earlier. Most energy products were imported from Russia, whose share of the value of imports was around 60 per cent. Correspondingly, energy products were exported from Finland to the value of EUR 3.7 billion, which was 40 per cent less than one year previously. The decline in exports was most significant in oil products due to a service shutdown. Most energy products were exported from Finland to EU countries, which accounted for 85 per cent of the value of exports.

In December, stocks of coal amounted to some 25 TWh, which was 14 per cent less than one year earlier. Correspondingly, stocks of energy peat were estimated to be around 13 TWh, which was 36 per cent less than one year earlier.

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

Energy source, TJ ⁴⁾	2015*	Annual change-%*	Percentage share of total energy consumption*
Oil	311,422	0	24
Coal ¹⁾	103,857	-18	8
Natural gas	79,779	-16	6
Nuclear energy ²⁾	243,562	-1	19
Net imports of electricity ³⁾	58,824	-9	5
Hydro power ³⁾	59,722	25	5
Wind power ³⁾	8,405	111	1
Peat	52,743	-11	4
Wood fuels	333,022	-2	26
Others	50,059	-5	4
TOTAL ENERGY CONSUMPTION	1,301,394	-3	100
Bunkers	37,186	23	.
CO2 emissions from energy sector	41	-6	.

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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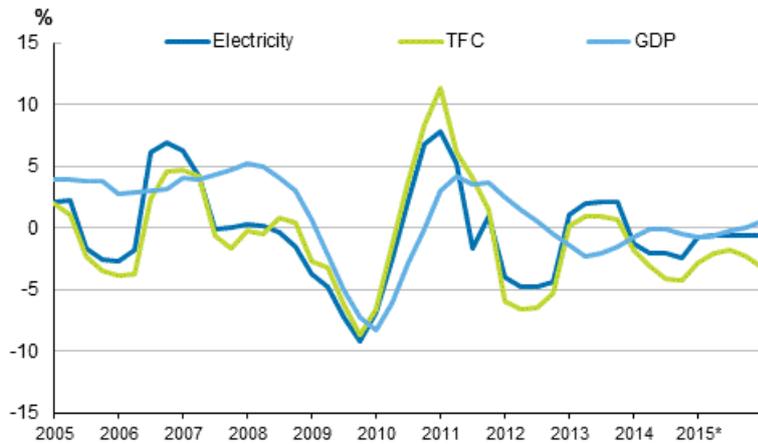
Figures

Appendix figures

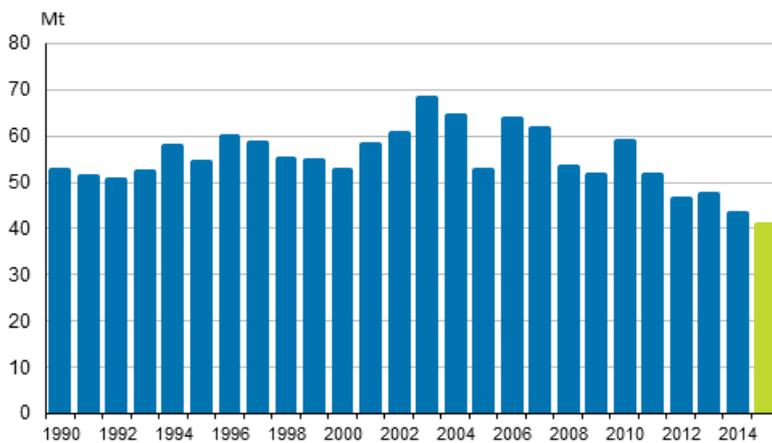
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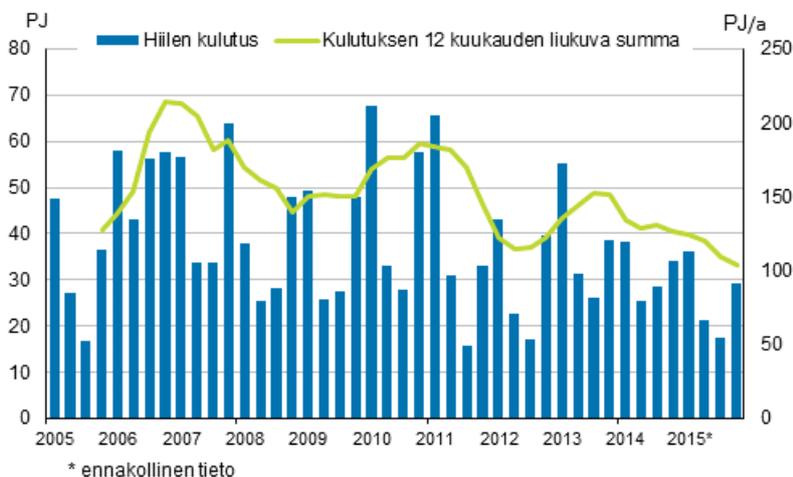
Appendix figure 1. Changes in GDP, Final energy consumption and electricity consumption



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

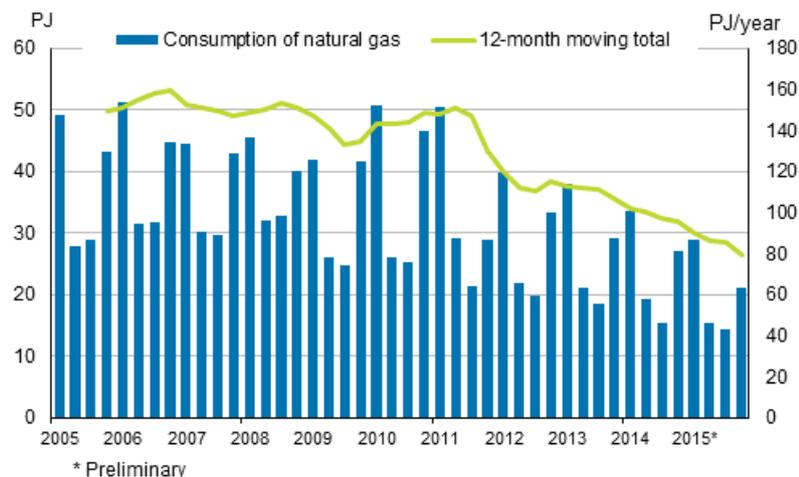


Appendix figure 3. Coal consumption



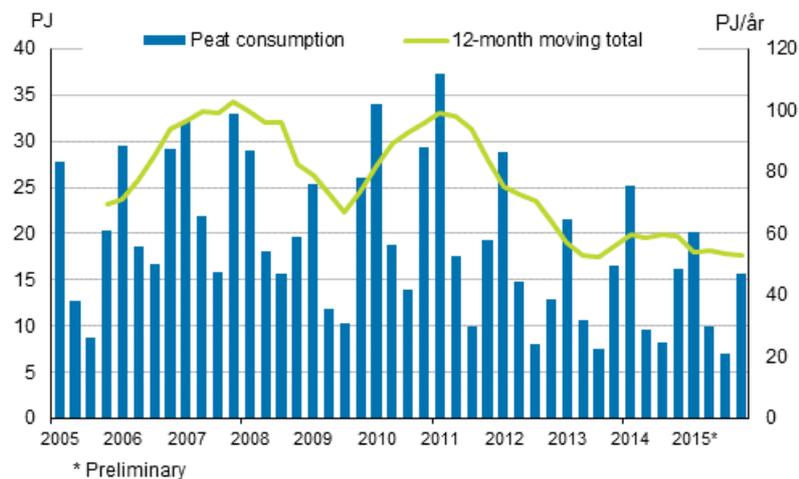
Source: Finnish Energy Industries Federation

Appendix figure 4. Consumption of natural gas



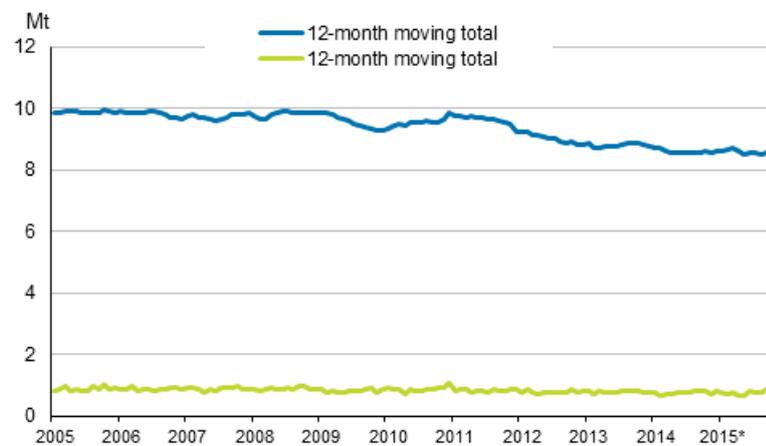
Source: Gasum Oy, 12-month moving total

Appendix figure 5. Peat consumption



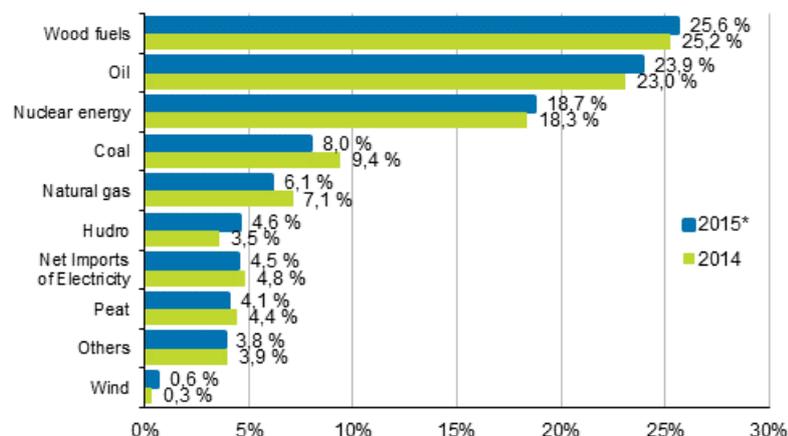
Source: The Bioenergy Association of Finland, 12-month moving total

Appendix figure 6. Domestic oil deliveries

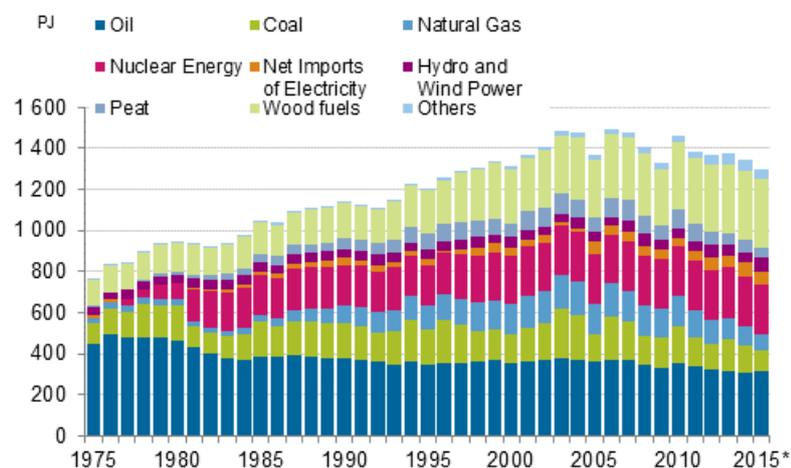


Source: Association of Finnish Peat Industries, 12-month moving total

Appendix figure 7. Share of total energy consumption 2014–2015*
 (The figure was corrected on 18 April 2016)

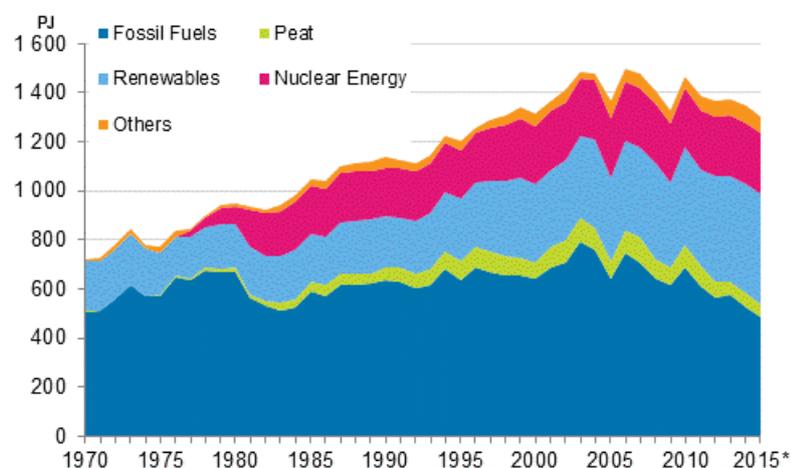


Appendix figure 8. Total energy consumption 1975–2015*



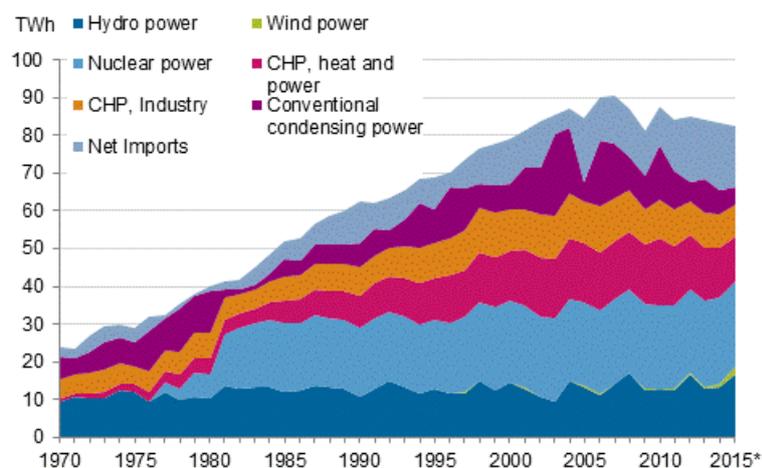
*preliminary

Appendix figure 9. Fossil fuels and renewables 1970–2015*



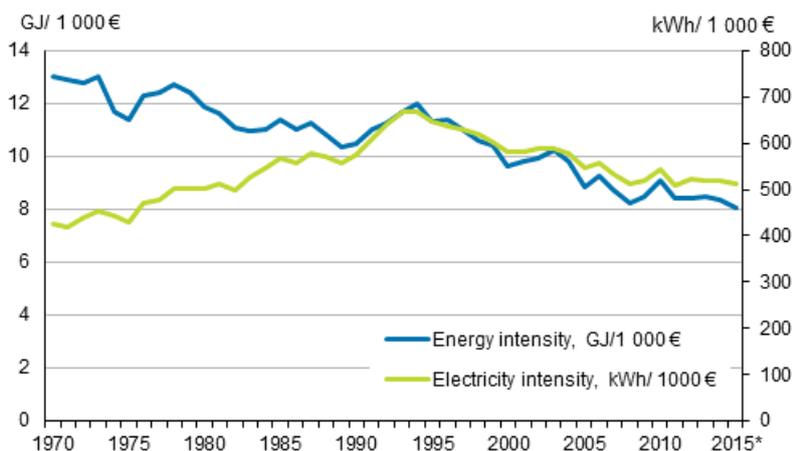
*preliminary

Appendix figure 10. Electricity supply 1970–2015*, (The figure was corrected on 1 April 2016)



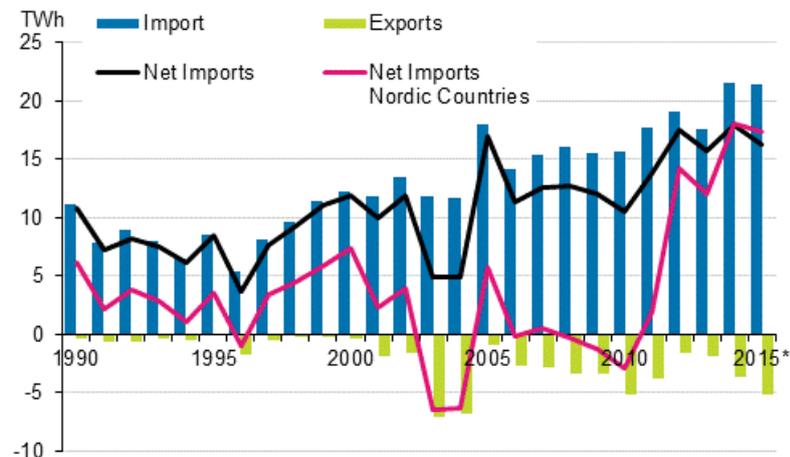
*preliminary

Appendix figure 11. Energy and electricity intensity 1970–2015* (The figure was corrected on 20 April 2016)



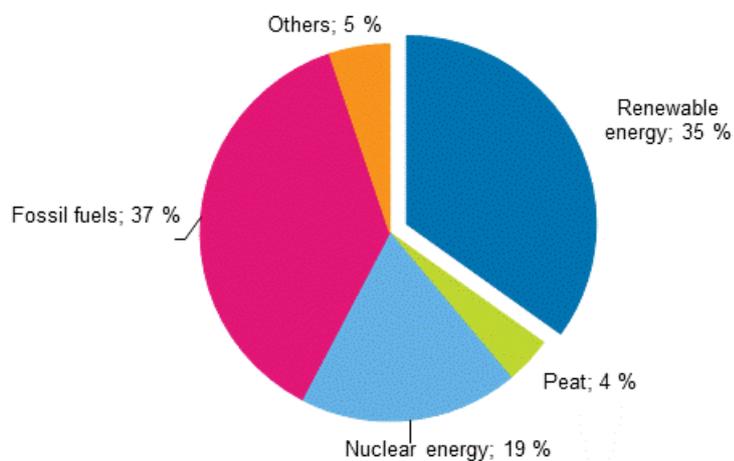
*year 2015 preliminary

Appendix figure 12. Imports and exports of electricity 1990–2015*



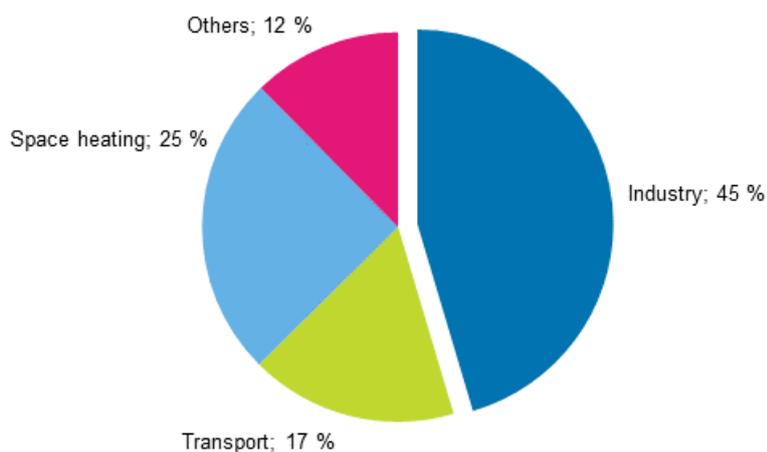
Source: Finnish Energy Industries, *preliminary

Appendix figure 13. Share of renewables of total primary energy 2015*



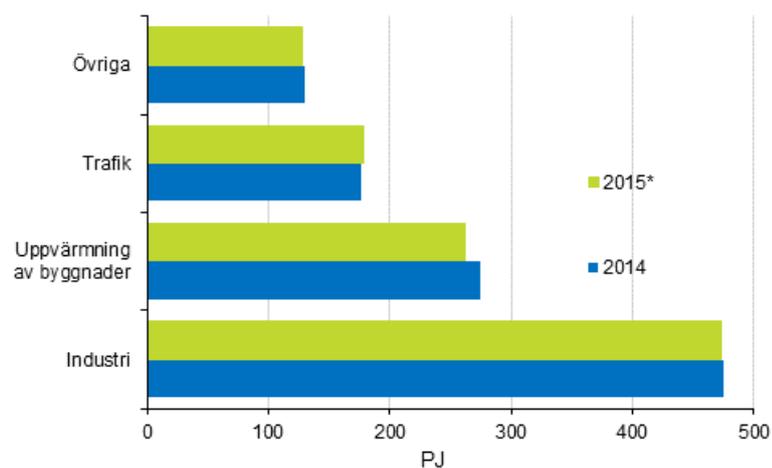
*preliminary

Appendix figure 14. Final energy consumption by sector 2015*



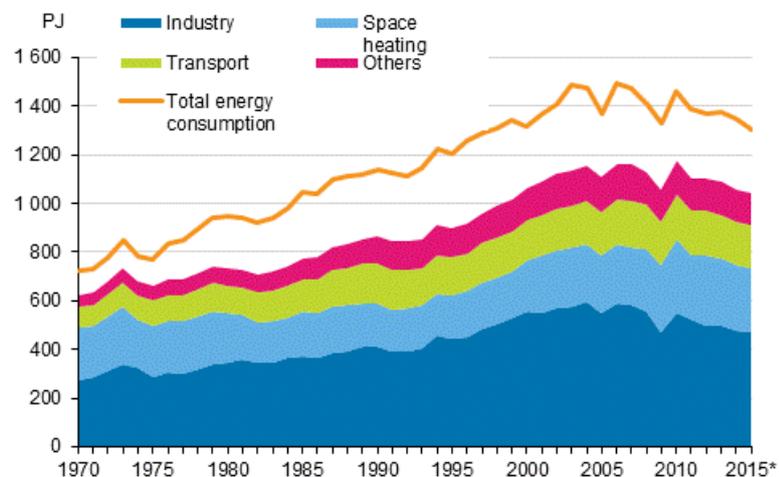
*Preliminary.

Appendix figure 15. Final energy consumption by sector 2014 and 2015*



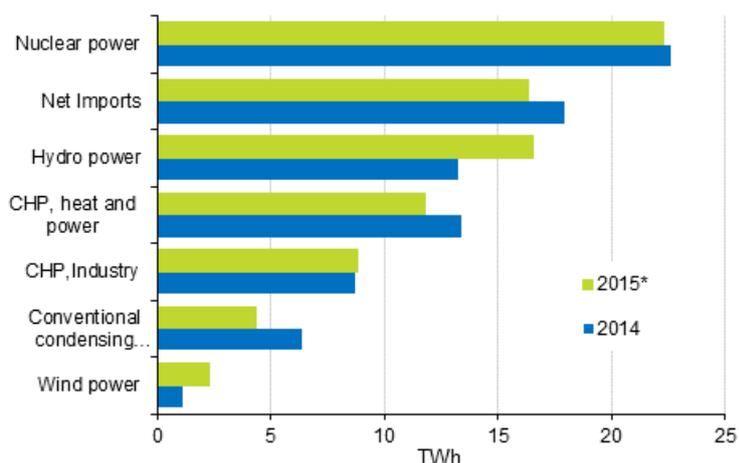
*preliminary

Appendix figure 16. Total energy consumption and final energy consumption 1970–2015*



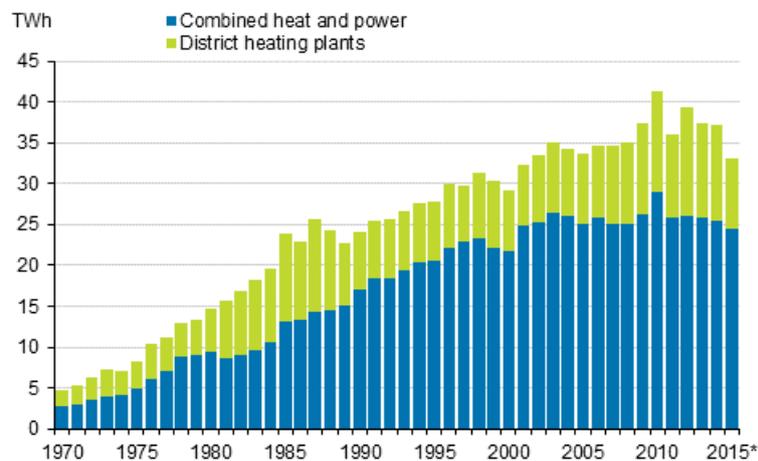
*preliminary

Appendix figure 17. Electricity supply 2014–2015*



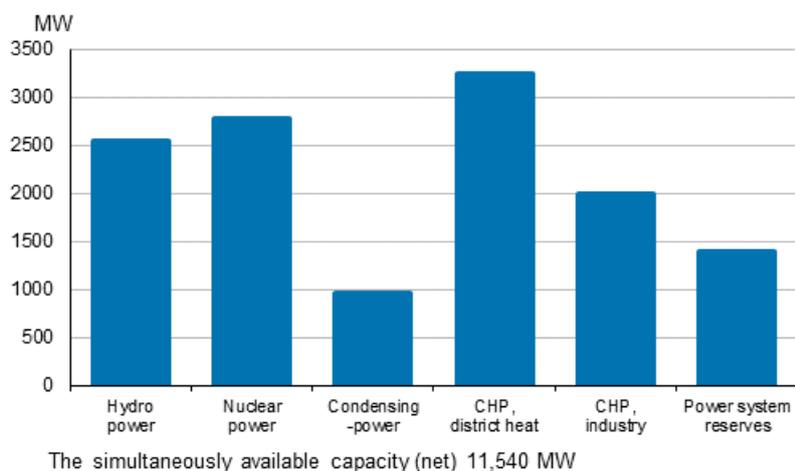
Source: Finnish Energy Industries, *preliminary

Appendix figure 18. Production of district heat 1970–2015*



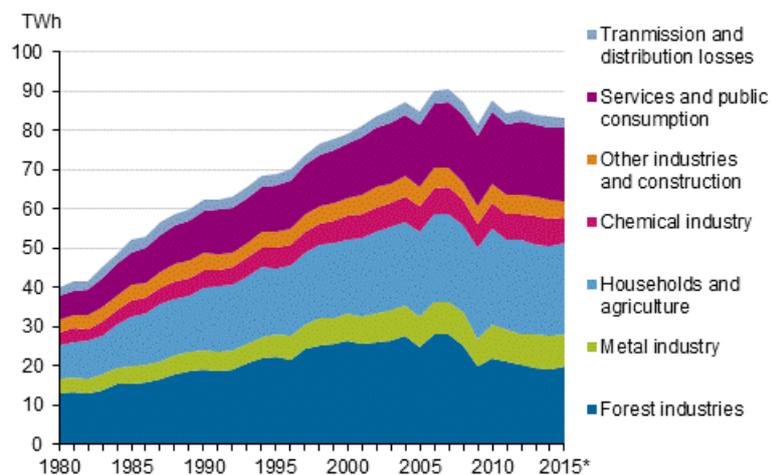
Source: Finnish Energy Industries *preliminary

Appendix figure 19. Electricity generation capacity in peak load period in the beginning of the year 2016



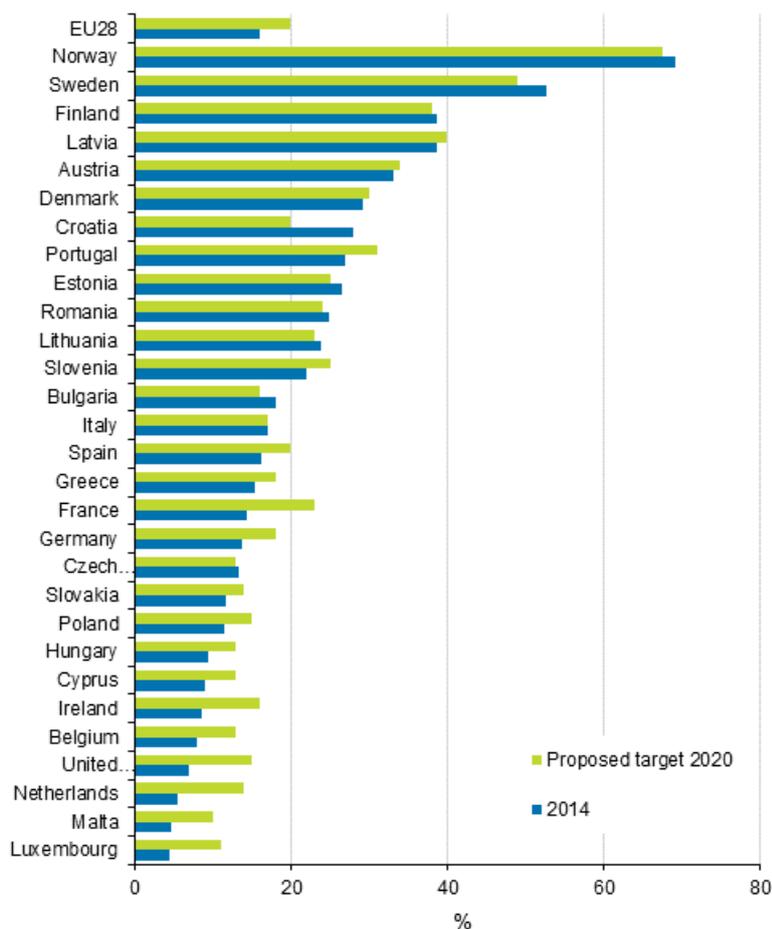
Source: Fingrid Oyj and the Energy Authority

Appendix figure 20. Electricity consumption by sector 1980–2015*



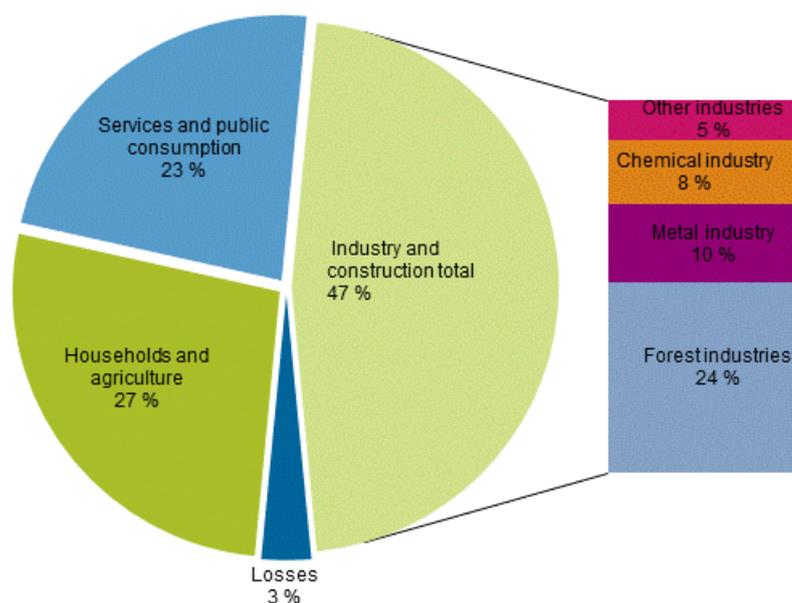
Source: Finnish Energy Industries, *preliminary

Appendix figure 21. Renewable energy as a proportion of final energy consumption in 2014, and the target for 2020



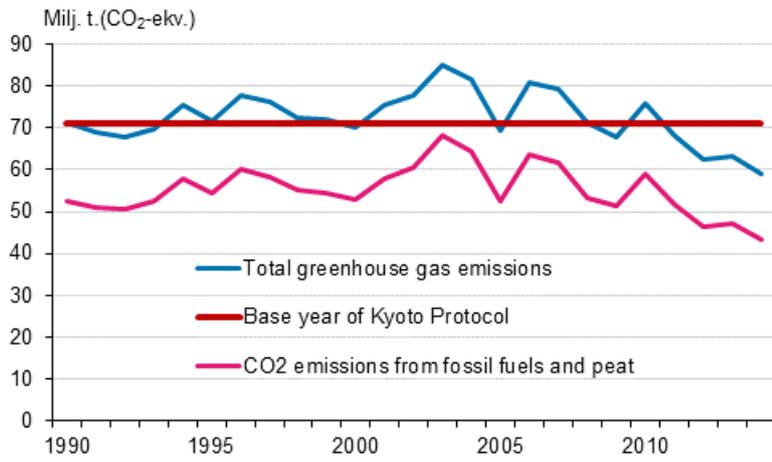
Source: Eurostat

Appendix figure 22. Electricity consumption by sector 2015*



Source: Statistics Finland, *preliminary

Appendix figure 23. Finland's greenhouse gas emissions 1990–2014*



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 23.3.2016 (%)	
	I-IV 2015	.	-3	.
	I/2015	-6	-4	2
	II/2015	-3	-2	1
	III/2015	0	-3	-3
	IV/2015	.	1	.

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