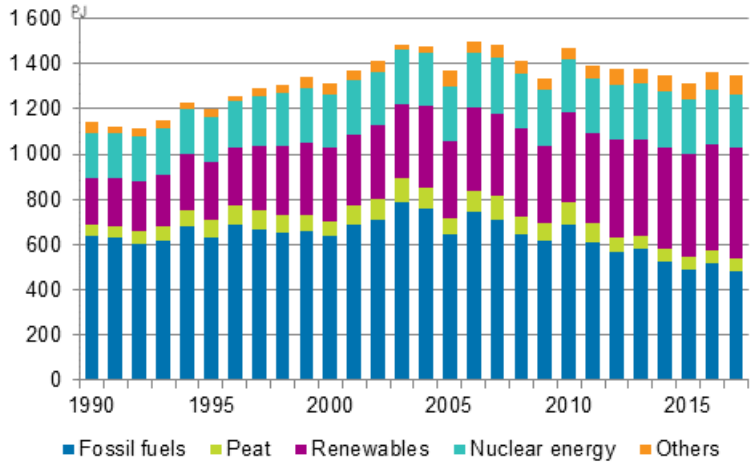
Energy supply and consumption 2017

Use of renewable energy continued growing in 2017

According to Statistics Finland, total consumption of energy in Finland amounted to 1.35 million terajoules (TJ) in 2017, which corresponded to a fall of one cent compared with the previous year. The consumption of electricity totalled 85 terawatt hours (TWh), which was on level with the year before. Renewable energy sources covered 37 per cent of total energy consumption and according to preliminary data, over 40 per cent of final use. Their use grew by six per cent, rising to a new record level. The consumption of fossil fuels and peat declined by six per cent.

Total energy consumption 1990–2017



The share of renewable energy in total energy consumption was 37 per cent in 2017. As late as 1990, its share was just 18 per cent, after which it has grown steadily, growing in the 2010s still clearly faster than before. Compared with 2016, the share of renewable energy in total consumption rose by three percentage points.

EU targets for renewable energy are calculated relative to gross final energy consumption. Calculated in this manner, the share of renewable energy rose to over 40 per cent in Finland in 2017 based on Statistics Finland's preliminary data. Finland reached the target for the share of renewable energy, 38 per cent of gross final energy consumption in 2020, for the first time in 2014. The share of renewable energy in final energy use was the second highest among EU countries.

The use of fossil fuels and peat in total energy consumption fell in 2017 by two percentage points, being 40 per cent. Greenhouse gas emissions in the energy sector went down as a result of decreased use of fossil fuels and peat. Nuclear energy covered 17 per cent of total energy consumption and other energy sources six per cent.

The most significant energy source was wood fuels, whose use increased by three per cent and their share of total energy consumption was 27 per cent. The consumption of black liquor used by the forest industry grew particularly due to increased production of pulp. The second most used energy source was oil, 23 per cent of total consumption. The consumption of oil fell by a few per cent from the previous year. The consumption of coal fell by eight per cent, and that of natural gas by nine per cent. The consumption of energy peat fell by five per cent.

Total energy consumption 2016–2017, terajoule

	2016	2017	Change %
Wood fuels	350 068	362 314	3
Oil	316 076	308 412	-2
Nuclear energy	243 056	235 352	-3
Coal	126 495	114 511	-8
Natural gas	72 189	65 986	-9
Peat	56 336	53 725	-5
Net imports of electricity	68 222	73 532	8
Hydro power	56 283	52 597	-7
Wind power	11 045	17 263	56
Others	60 287	64 174	6
Total	**1 360 057**	**1 347 867**	**-1**

In 2017, electricity production in Finland amounted to 65 TWh, or two per cent less than one year previously. Because the consumption of electricity did not fall, reduced production was covered by net imports of electricity, which increased by eight per cent. The share of renewable energy sources in electricity production rose by two percentage points to 47 per cent. The production of hydro power dependent on the water situation fell by seven per cent, but it was compensated by wind power, whose production rose by 56 per cent. The production of solar power rose even more – by as much as 128 per cent. The share of hydro power in production was 22 per cent, that of wind power seven per cent and that of solar power just 0.1 per cent. Combined heat and power production covered 32 per cent of production and condensing power only producing electricity five per cent. The share of electricity produced with fossil fuels and peat in total production was in total 19 per cent, down by 11 per cent. The share of nuclear power in electricity production was again about one third.

Net imports of electricity to Finland amounted to 20 TWh in 2017, which is more than ever before. Compared with 2016, net imports grew by eight per cent. The share of net imports in the electricity consumed in Finland was record high, 24 per cent. Electricity was imported most from Sweden (15 TWh) and from Russia (6 TWh). Exports of electricity to Estonia amounted to two TWh and imports from Estonia to one TWh.

Final energy consumption fell by one per cent year-on-year. The growth of industrial output continued further, which was also visible in an about one per cent growth in final consumption of manufacturing. Of energy intensive industries, the growth in the forest industry and the chemical industry was particularly visible in increased consumption of fuel and electricity. Manufacturing was the biggest of final consumption sectors of energy with its share of 47 per cent.

One per cent less heating energy of building was consumed in 2017 than one year earlier. The use of heat pumps for heating has grown significantly from the start of the millennium, which is visible in the statistics

in the growing use of both heat pump energy and heat pump electricity. In addition to the area to be heated and the energy efficiency of the building stock, the need for heating energy is also affected by the outdoor temperature.

Energy consumption in transport rose by nearly half a per cent in 2017. The consumption of petrol still continued falling, whereas the consumption of diesel oil was still on the growth track. The most significant use of diesel oil is transports of business life. The share of transport was 16 per cent of final energy consumption. In Finland, transport fuels contain biocomponents that are included in total amounts of petrol and diesel. The total use of jet fuel grew by five per cent from the year before. Almost 90 per cent of jet fuel is used in international transport.

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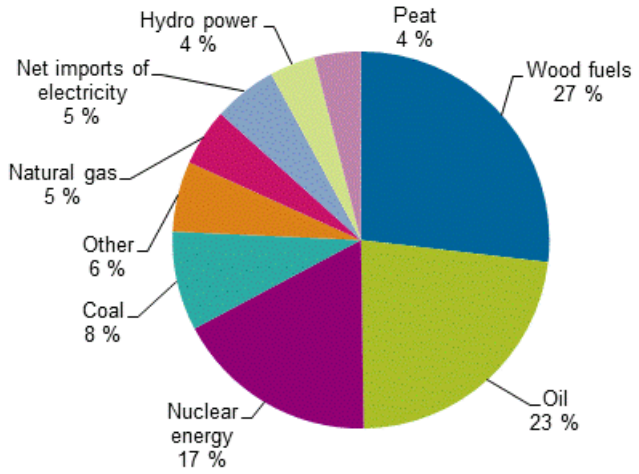
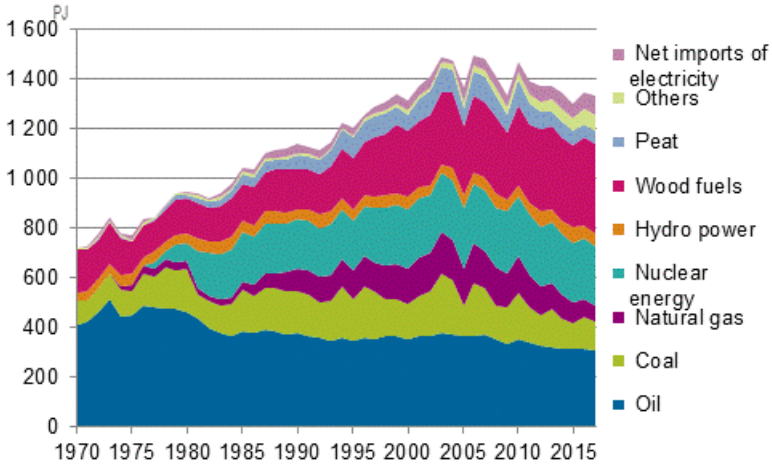


Appendix figure 2. Total energy consumption 1970–2017



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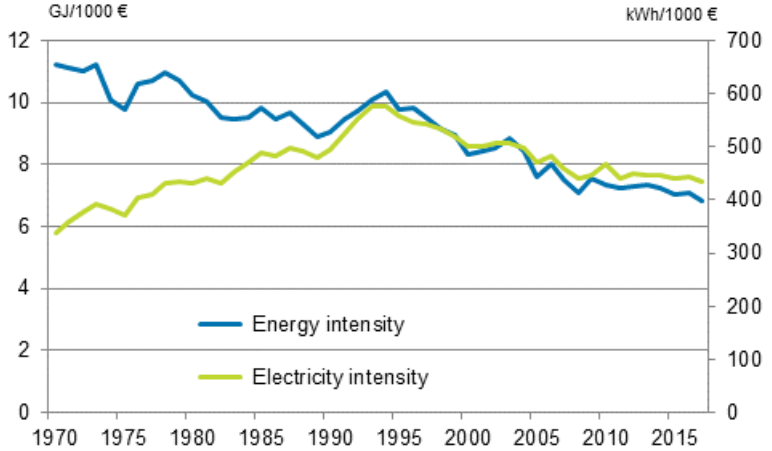
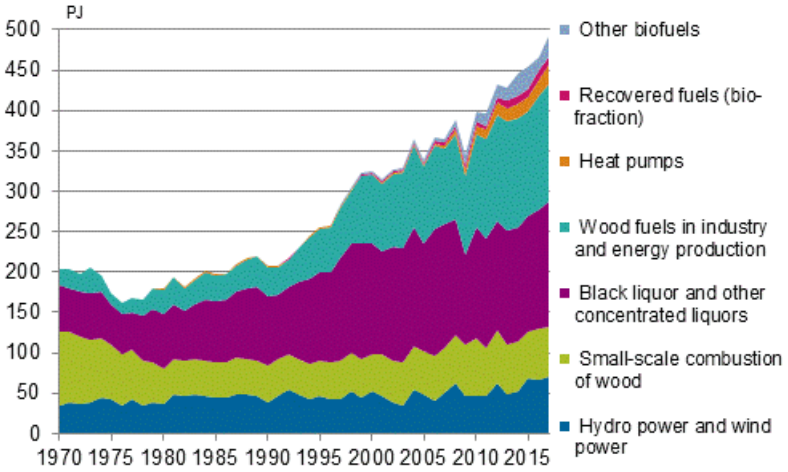


Appendix figure 4. Renewable energy sources 1970–2017



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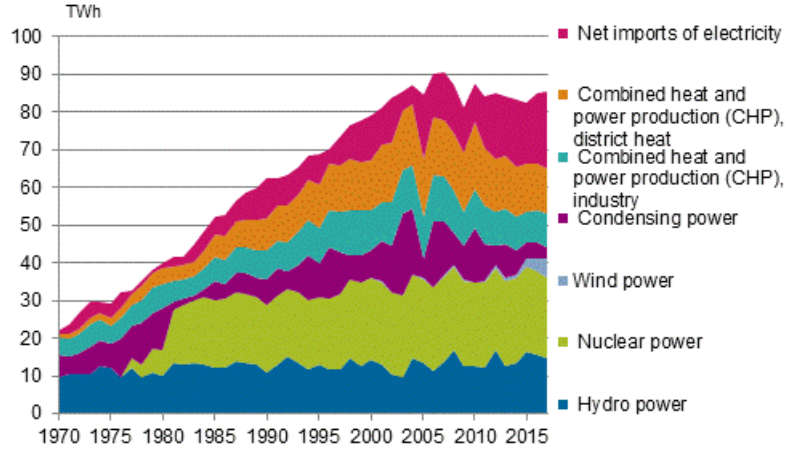
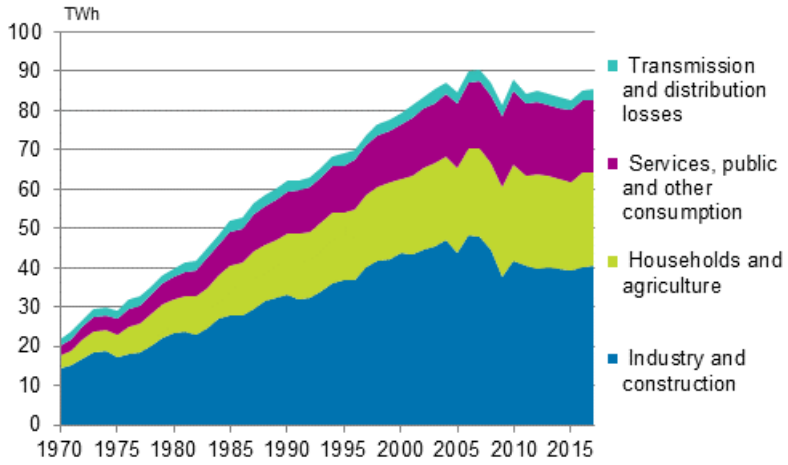


Appendix figure 6. Electricity consumption by sector 1970–2017



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