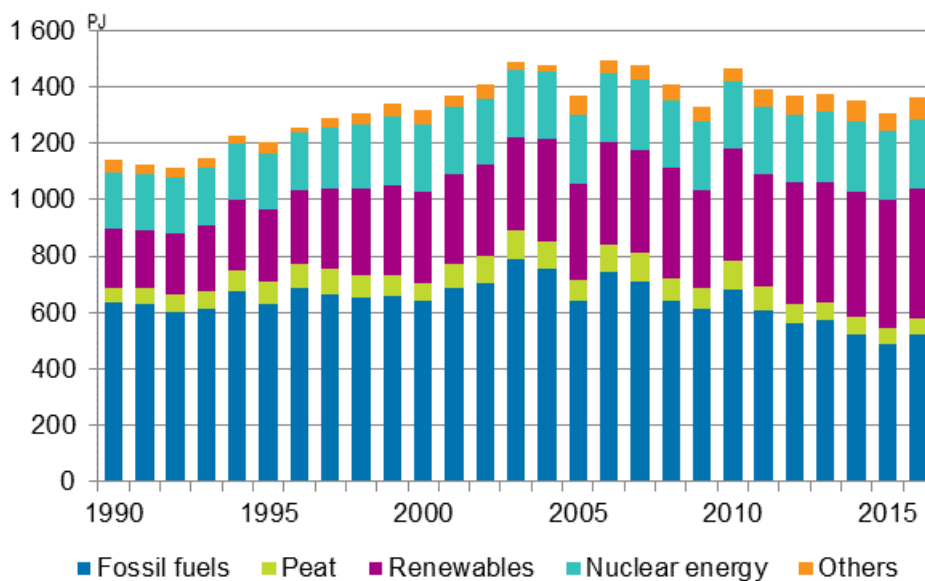


Energy supply and consumption 2016

Use of renewable energy at record level in 2016

According to Statistics Finland, total consumption of energy in Finland amounted to 1.36 million terajoules (TJ) in 2016, which corresponded to a growth of four per cent compared with the previous year. The consumption of electricity totalled 85.2 terawatt hours (TWh), which was three per cent more than in the previous year. The use of renewable energy sources grew by two per cent, rising to a new record level. Renewables covered 34 per cent of total energy consumption and according to preliminary data, barely 39 per cent of end use. The consumption of fossil fuels also rose by seven per cent.

Total energy consumption 1990–2016



The share of renewable energy in total energy consumption was 34 per cent in 2016. Wood fuels remained the biggest energy sources in Finland and their share of total energy consumption was 26 per cent. The consumption of wind power grew by 32 per cent and energy extracted with heat pumps from the environment by 23 per cent. The consumption of biofuels in transport, in turn, fell by 64 per cent from the record level of two preceding years. Annual variation in the consumption of biofuels is caused by Finland's biofuel legislation, which allows the distributors to fulfil the bio obligation flexibly in advance. Although the consumption of renewable energy sources rose compared with the previous year, their share of total energy

consumption and also of end consumption declined slightly. This is because the amount of other fuels simultaneously grew more than renewable energy sources.

EU targets for renewable energy are calculated relative to total final energy consumption. Calculated in this manner, the share of renewable energy was barely 39 per cent in Finland in 2016 based on preliminary data. Finland's target for the share of renewable energy is 38 per cent of final energy consumption in 2020, and this target was reached for the first time in 2014.

The use of fossil fuels grew by seven per cent from the previous year and its share in total energy consumption was 38 per cent. The growth was mainly due to a 24 per cent growth in the consumption of coal (including hard coal, coke, and blast furnace and coke oven gas). The use of hard coal was extended to a new use in the process industry. The use of natural gas declined by 11 per cent. Finland's first liquefied natural gas terminal opened in autumn 2016. Liquefied natural gas complements Finland's natural gas markets both geographically and with new uses. The use of energy peat also went down by three per cent from the year before.

Total energy consumption 2015–2016, terajoule

	2015	2016	Change %
Wood fuels	330 939	349 112	5
Oil	312 071	317 197	2
Nuclear energy	243 556	243 056	0
Coal	102 642	127 051	24
Natural gas	82 363	72 913	-11
Peat	57 755	56 163	-3
Net imports of electricity	58 813	68 222	16
Hydro power	59 703	56 283	-6
Wind power	8 378	11 045	32
Others	52 885	60 586	15
Total	1 309 106	1 361 627	4

In 2016, electricity production amounted to 66 TWh, or nearly as much as one year previously. The share of renewables remained on level with the previous year at 45 per cent. The water situation weakened towards the end of 2016 and the production of hydro power fell in Finland by six per cent. Nevertheless, hydro power accounted for 24 per cent of electricity production. In turn, the production of wind power continued growing strongly at 32 per cent and its share reached five per cent last year. Solar power accounted for the biggest relative change in electricity production. It grew by 87 per cent. Despite this, the share of solar electricity in Finland's electricity production was under half a per mil. In all, 34 per cent of electricity production was covered by nuclear energy.

Net imports of electricity to Finland amounted to 19 TWh in 2016, which is more than ever before. Compared to 2015, the growth was 16 per cent and the share of net imports in electricity consumed in Finland was 22 per cent. Most electricity was imported from Sweden, in total 15 TWh. Electricity imports from Russia increased by 49 per cent and were 6 TWh last year. Almost all exports of electricity from Finland were directed to Estonia, amounting to 3 TWh.

Final consumption of energy went up by nearly five per cent. The share of manufacturing in final energy consumption stood at 46 per cent. The decrease in the volume of industrial output that has continued since 2012 reversed last year, which was also visible as an increase in energy use in manufacturing. The use of heating energy of buildings was 10 per cent higher in 2016 and its share of final use was 26 per cent. Energy consumption in housing rose by eight per cent, which was due to weather induced heating need. In 2016, heating degree day was 14 per cent higher than in 2015. The use of energy in transport rose by four per cent and was 17 per cent of final energy consumption.

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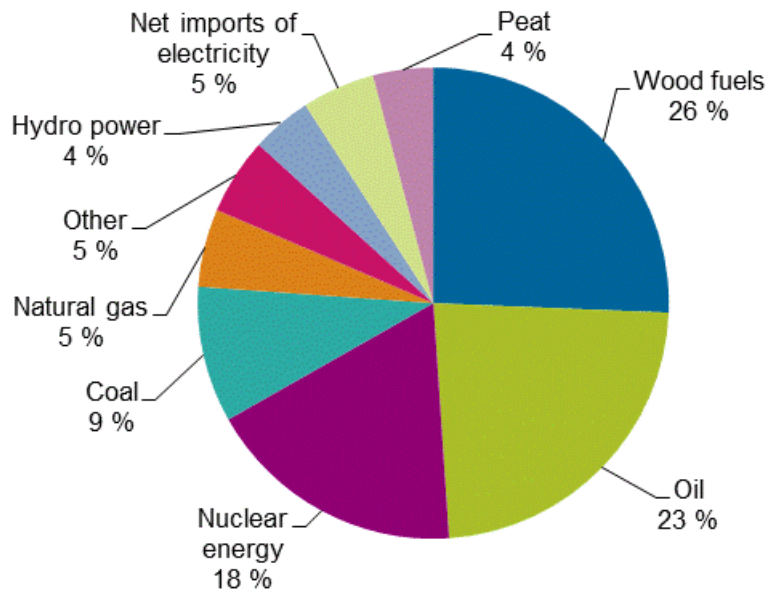
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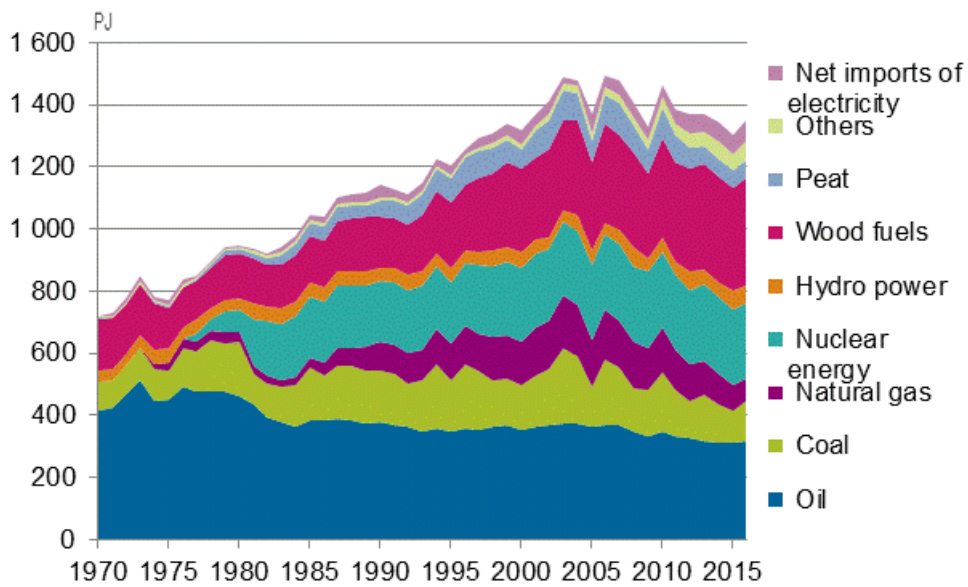
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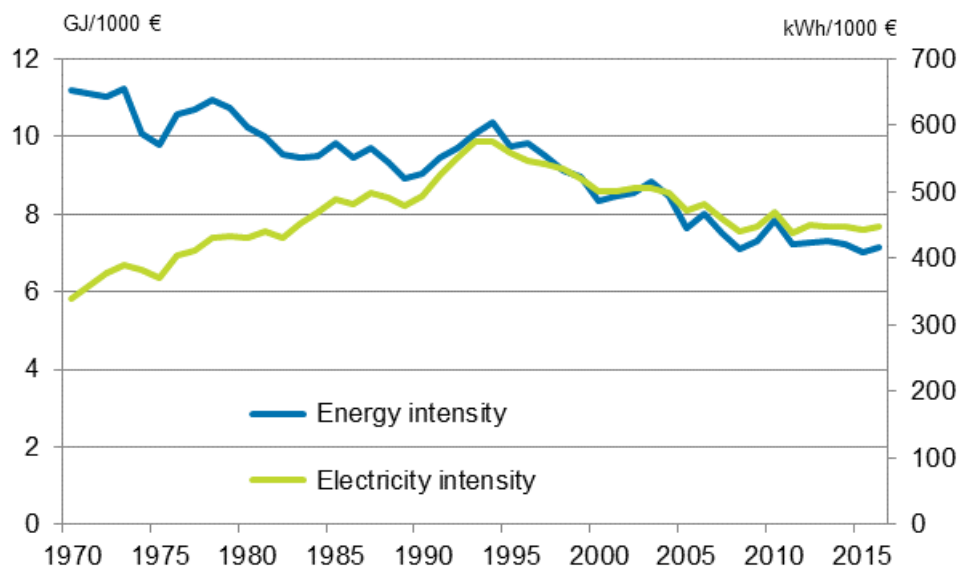
Appendix figure 1. Total energy consumption 2016



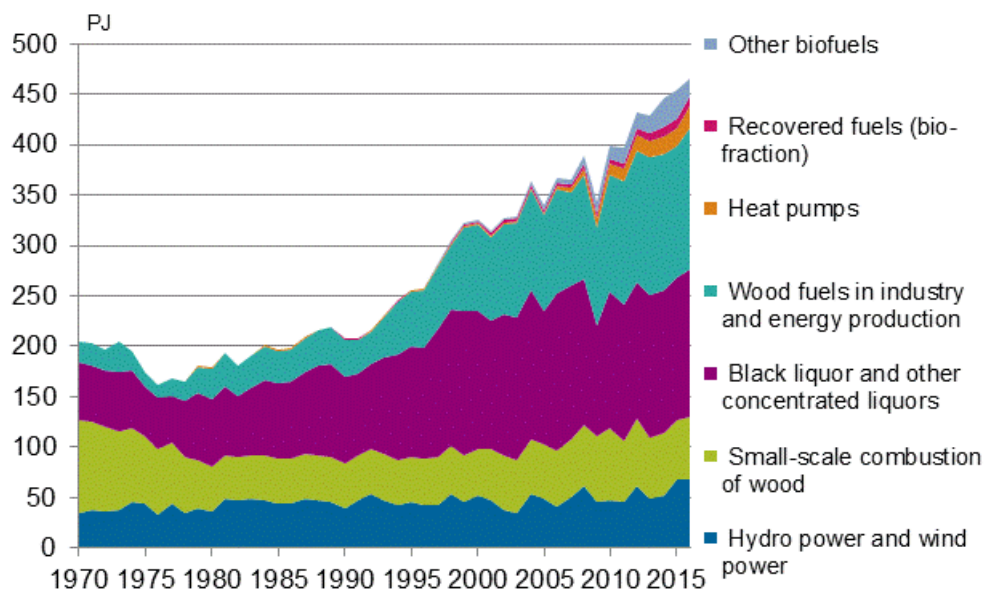
Appendix figure 2. Total energy consumption 1970–2016



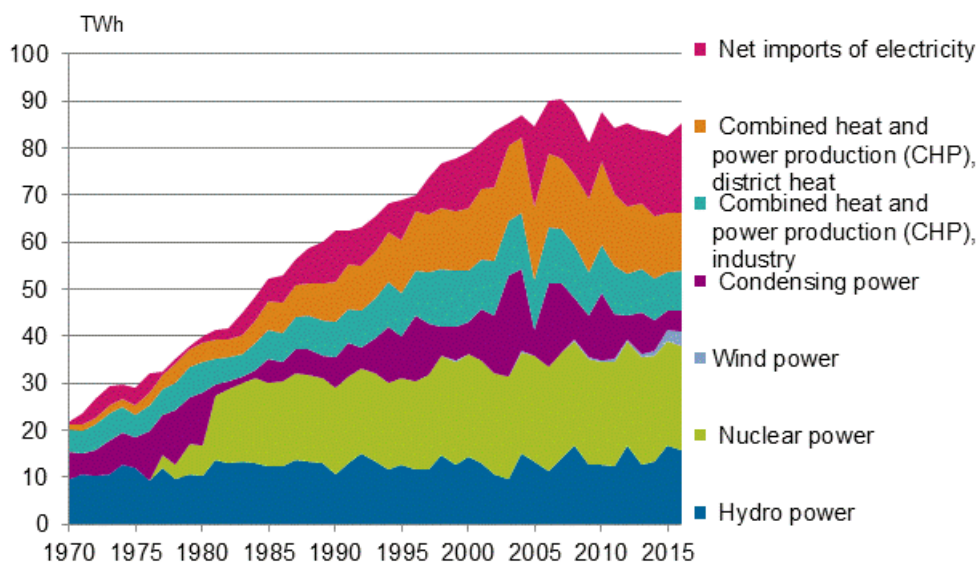
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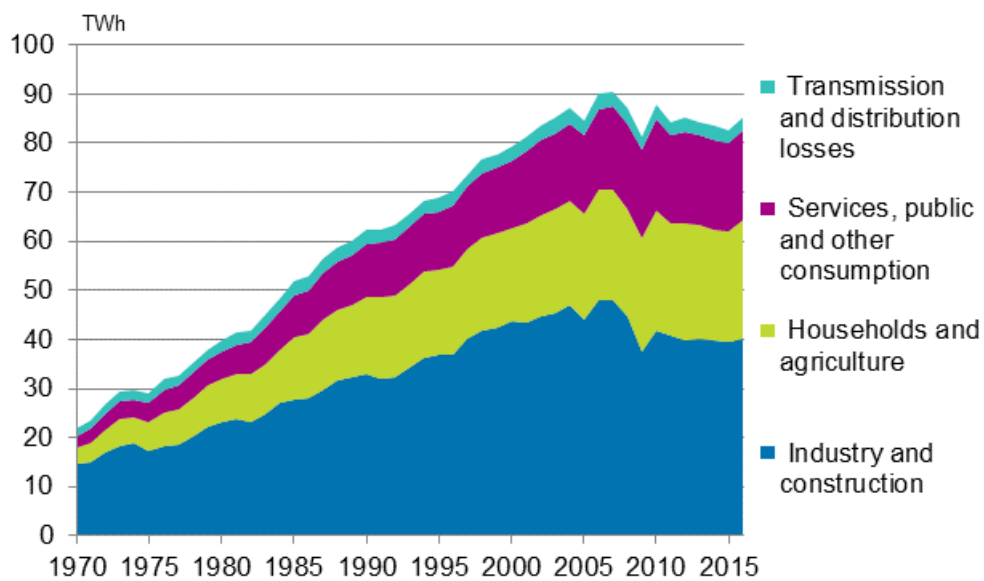
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Source: Energy supply and consumption, Statistics Finland