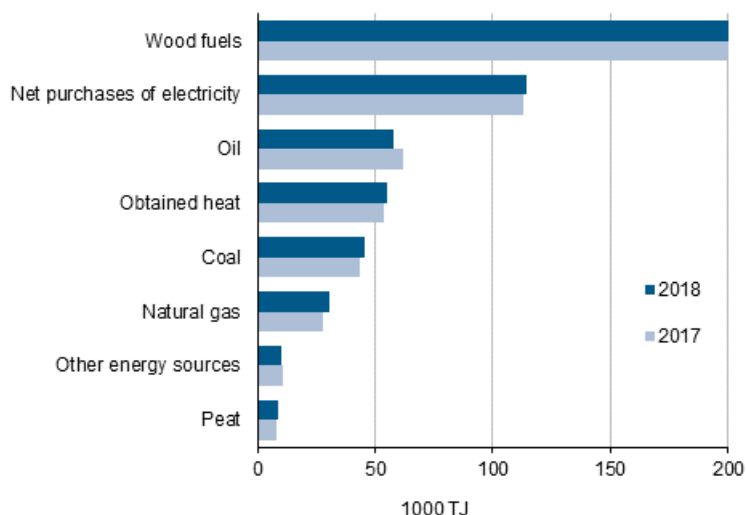


Energy use in manufacturing 2018

Energy use in manufacturing grew by three per cent in 2018

According to Statistics Finland’s data, energy use in manufacturing increased by three per cent in 2018. Manufacturing consumed 536 petajoules (PJ) of energy, which was 3.1 per cent more than in the year before. Total use of electricity increased by 2.8 per cent from the previous year.

Energy use in manufacturing



In 2018, industrial output continued growing and increased by a few per cent from the year before. This also resulted in increased energy use in manufacturing. Energy use grew most in energy-intensive industries, the forest industry, the metal industry and the chemical industry. The growth especially in the forest industry increased the consumption of wood fuels. Wood fuels are the biggest energy source used by manufacturing covering 40 per cent of energy consumption. The second most important fuel based energy sources are oil and coal. Their combined consumption decreased from 2017 as the use of oil declined and the use of coal increased. The prolonged decrease in the consumption of natural gas turned into growth partly as a result of increased use of liquefied natural gas (LNG). The use of power and heat also increased.

Viewed by region, energy use follows the geographical distribution of energy-intensive manufacturing. Just like in the year before, the three main regions in terms of energy use in 2018 were South Karelia, Uusimaa and North Ostrobothnia. Energy use grew most both in relative and absolute terms in Central Finland.

Significant structural change has taken place in the energy use in manufacturing over the past decade. If we compare the years 2008 and 2018, industrial output was some 15 per cent higher in 2018. However, a better comparison year than 2008 is 2007 prior to the financial crisis when industrial output was nearly at the same level as in 2018. However, 16 per cent less energy was used in 2018. Since 2007, the consumption of wood fuels has increased by 10 per cent while the use of fossil fuels has decreased clearly. The consumption of natural gas has nearly halved, oil use is one-third and coal use one-fifth lower than in 2007. The use of peat in manufacturing has also decreased by over 40 per cent.

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Appendix tables

Appendix table 1. Energy use in manufacturing by energy source 2018

Source of energy	TJ	GWh
Refinery gas	28 150	7 819
LPG (Liquefied petroleum gas)	8 719	2 422
Light fuel oil and Gasoil	3 913	1 087
Heavy fuel oils	5 753	1 598
Petroleum coke	5 020	1 395
Recycled and waste oils	237	66
Other petroleum products	6 325	1 757
Hard coal, bituminous	15 491	4 303
Coke	16 509	4 586
Blast furnace gas and Coke oven gas and CO gas	13 885	3 857
Natural gas	30 651	8 514
Milled peat	8 765	2 435
Sod peat and Peat pellets and briquettes	114	32
Forest chippings and other firewood	4 807	1 335
Bark	25 653	7 126
Sawdust, cutter shavings etc.	4 389	1 219
Other industrial wood residue	3 464	962
Black liquor and other concentrated liquors	167 034	46 398
Other by-products from wood processing industry	7 506	2 085
Wood pellets and briquettes	139	39
Biogas	269	75
Other biofuels	2 196	610
Recovered fuels	3 257	905
Waste and other non-specified energy sources	1 562	434
Hydrogen	263	73
Electricity	114 267	31 741
District heat	11 174	3 104
Heat used in production processes	43 964	12 212
Total	536 205	148 946

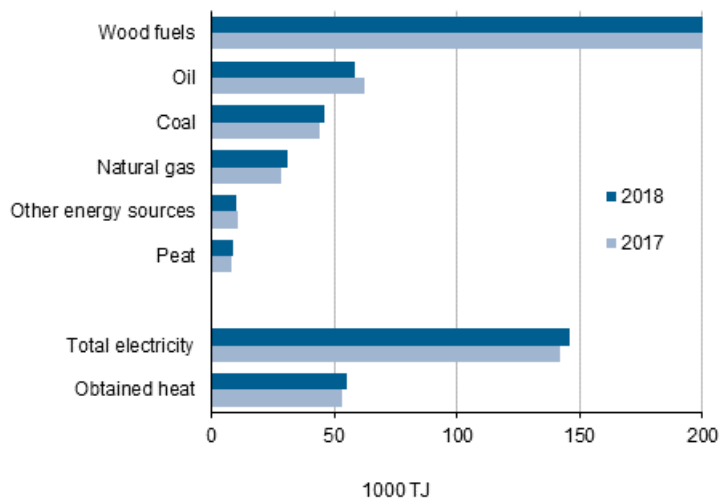
Appendix table 2. Energy use in manufacturing by industry 2018

Industries	Fuels, TJ	Electricity (nett), TJ	Heat (nett) TJ	Total, TJ
05 Mining of coal and lignite	.	.	.	.
06 Extraction of crude petroleum and natural gas	.	.	.	.
07 Mining of metal ores	222	4 314	110	4 646
08□09 Other mining and quarrying and mining support service activities	639	897	11	1 547
10 Manufacture of food products	3 083	6 726	6 440	16 249
11 Manufacture of beverages	236	584	930	1 750
12 Manufacture of tobacco products	.	.	.	.
13 Manufacture of textiles	171	278	152	601
14 Manufacture of wearing apparel	17	81	57	156
15 Manufacture of leather and related products	28	54	17	99
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8 717	5 795	9 966	24 477

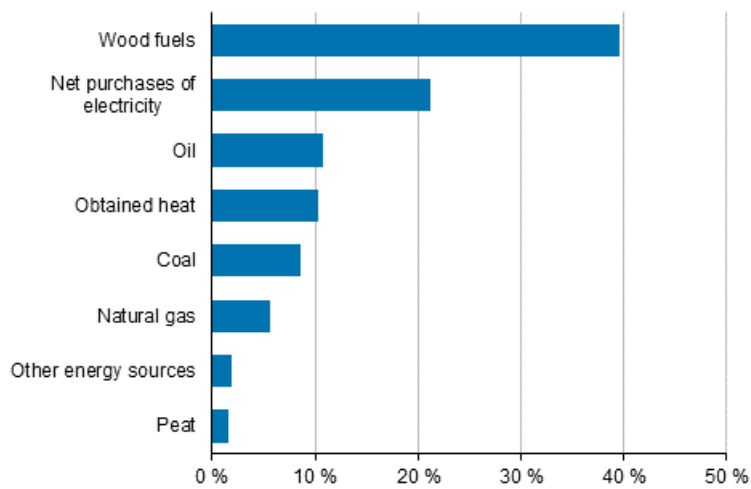
Industries	Fuels, TJ	Electricity (nett), TJ	Heat (nett) TJ	Total, TJ
17 Manufacture of paper and paper products	241 668	37 147	10 319	289 134
18 Printing and reproduction of recorded media	241	1 228	374	1 842
19 Manufacture of coke and refined petroleum products	31 911	4 512	5 895	42 318
20 Manufacture of chemicals and chemical products	18 636	16 374	10 257	45 267
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	22	341	316	679
22 Manufacture of rubber and plastic products	580	2 965	890	4 435
23 Manufacture of other non-metallic mineral products	9 540	2 904	632	13 077
24 Manufacture of basic metals	48 476	19 663	4 297	72 435
25 Manufacture of fabricated metal products, except machinery and equipment	930	3 956	809	5 695
26 Manufacture of computer, electronic and optical products	33	976	350	1 360
27 Manufacture of electrical equipment	65	1 262	597	1 924
28 Manufacture of machinery and equipment n.e.c.	729	2 095	1 183	4 007
29 Manufacture of motor vehicles, trailers and semi-trailers	364	549	462	1 375
30 Manufacture of other transport equipment	233	504	369	1 105
31 Manufacture of furniture	136	180	68	383
32 Other manufacturing	40	272	223	535
33 Repair and installation of machinery and equipment	83	609	415	1 106
Total	366 800	114 267	55 138	536 205

Appendix figures

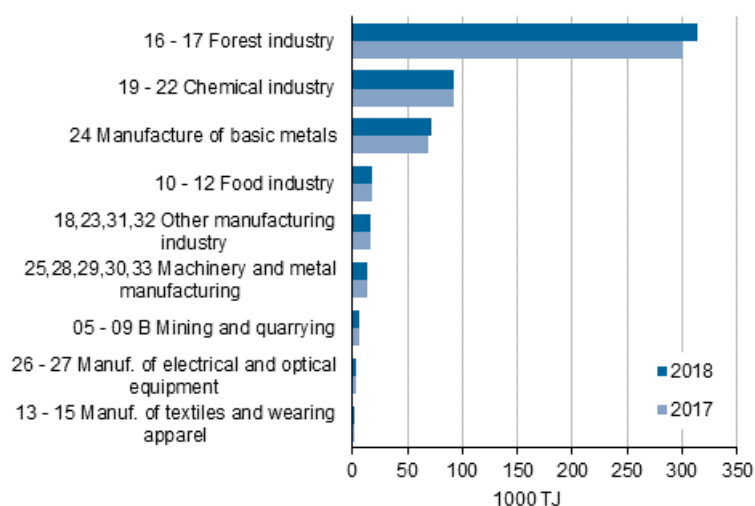
Appendix figure 1. Use of energy in manufacturing



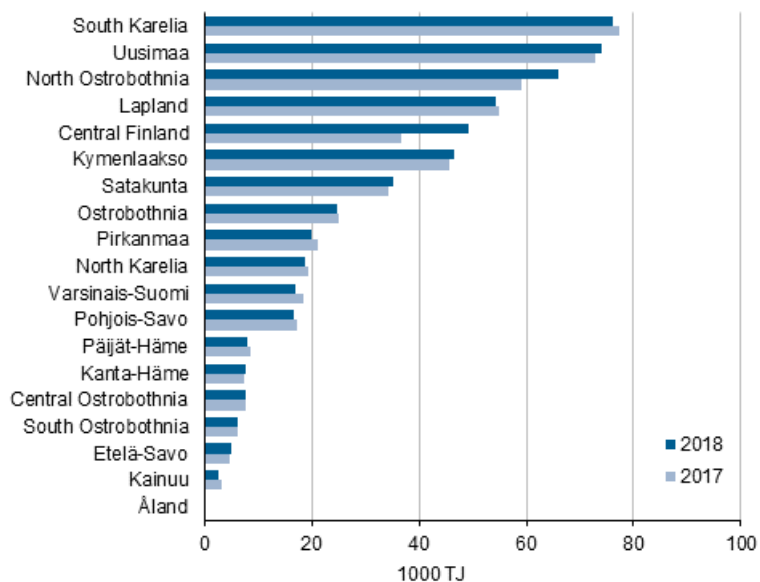
Appendix figure 2. Energy use in manufacturing by energy source



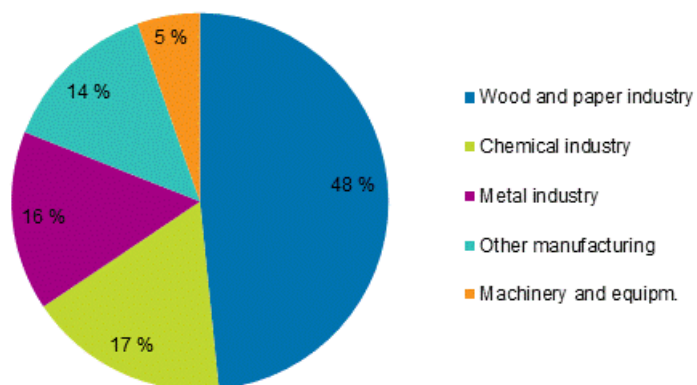
Appendix figure 3. Energy use in manufacturing by industry



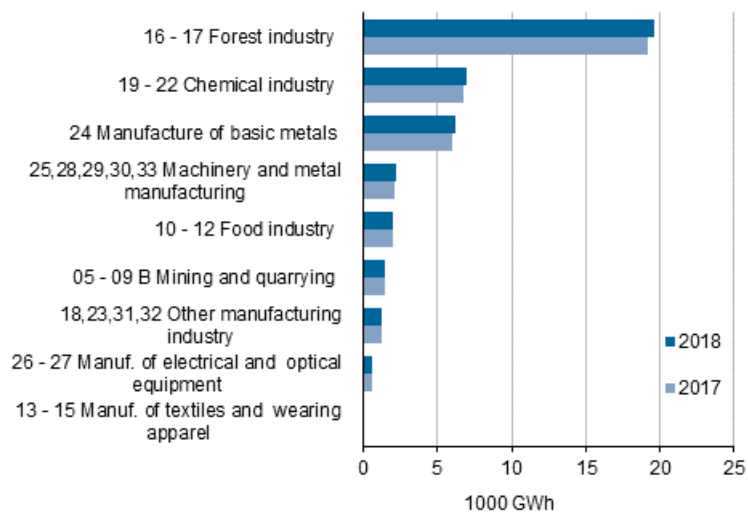
Appendix figure 4. Energy use in manufacturing by region



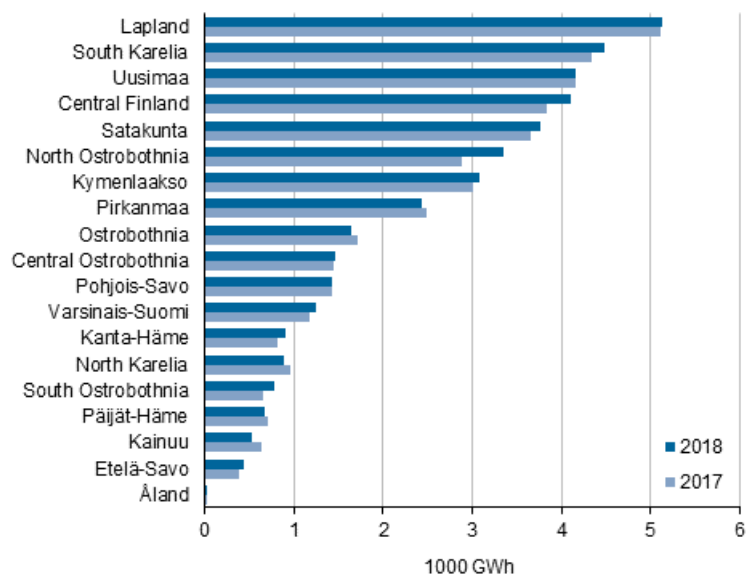
Appendix figure 5. Total electricity consumption in manufacturing



Appendix figure 6. Total electricity consumption by manufacturing branch



Appendix figure 7. Total electricity consumption in manufacturing by region



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Source: Energy use in manufacturing, Statistics Finland