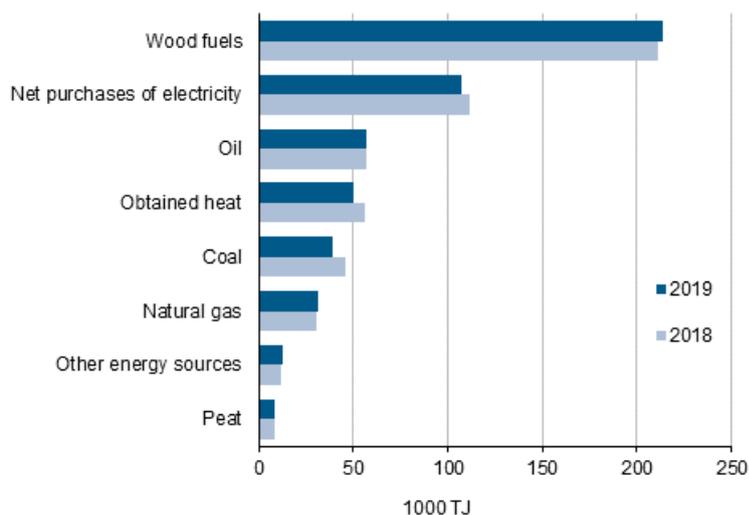


Energy use in manufacturing 2019

Energy use in manufacturing decreased by 2 per cent in 2019

According to Statistics Finland, energy use in manufacturing decreased by two per cent in 2019. Manufacturing consumed 520 petajoules (PJ) of energy, which was on level with two years earlier. The total use of electricity in manufacturing decreased by four per cent.

Energy use in manufacturing



The economic and political insecurity on the global markets was visible in the production figures of Finland's export-driven basic industries in 2019. The slowdown of the economic growth in Finland's most important export countries, the upcoming Brexit, the trade conflict between the United States and China, the United States' steel tariffs and so on increased uncertainty on the markets and weakened the demand for exports in basic industries. The fall in output, especially in energy-intensive industries, was also reflected in the volume of energy consumed in manufacturing. Especially in the manufacture of basic metals, but also in the forest and chemical industries, a decrease was seen both in the volumes of output and in the energy used.

The structural shift from fossil fuels towards renewable fuels, which has been visible already for a long time in used fuels, still continued. Consumption of fossil fuels and peat dropped by around five per cent

from one year ago. Only the use of natural gas increased, merely as a result of increased use of liquefied natural gas (LNG). Fossil fuels and peat accounted for 26 per cent of fuels used by manufacturing in 2019. One year earlier, the figure was 27 per cent, ten years earlier 35 per cent. Correspondingly, the share of wood fuels in energy sources used by manufacturing has grown from 28 to 41 per cent in ten years.

Changes in the distribution of energy use both by industry and geographically are very moderate on the annual level. Fifty per cent of the energy consumed in all manufacturing is used in four regions: South Karelia, Uusimaa, Lapland and North Ostrobothnia. In all, 34 per cent of total electricity is used in Lapland, South Karelia and Uusimaa. Examined by industry, over 80 per cent of total electricity is consumed in the forest, metal and chemical industries.

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Appendix tables

Appendix table 1. Energy use in manufacturing by energy source 2019

Source of energy	TJ	GWh
Refinery gas	29 827	8 285
LPG (Liquefied petroleum gas)	4 523	1 256
Light fuel oil and Gasoil	4 102	1 139
Heavy fuel oils	5 571	1 548
Petroleum coke	5 267	1 463
Recycled and waste oils	345	96
Other petroleum products	6 987	1 941
Hard coal, bituminous	11 731	3 258
Other coal	42	12
Coke	14 643	4 068
Blast furnace gas and Coke oven gas and CO gas	12 461	3 461
Natural gas	31 709	8 808
Milled peat	8 271	2 298
Sod peat and Peat pellets and briquettes	14	4
Forest chippings and other firewood	4 836	1 343
Bark	23 514	6 532
Sawdust, cutter shavings etc.	3 825	1 062
Other industrial wood residue	4 300	1 194
Black liquor and other concentrated liquors	169 744	47 151
Other by-products from wood processing industry	7 614	2 115
Wood pellets and briquettes	138	38
Biogas	3 419	950
Other biofuels	1 774	493
Recovered fuels	3 093	859
Waste and other non-specified energy sources	1 173	326
Hydrogen	289	80
Electricity	107 654	29 904
District heat	10 157	2 821
Heat used in production processes	40 312	11 198
Total	520 099	144 472

Appendix table 2. Energy use in manufacturing by industry 2019

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	353	4 221	267	4 841
08□09 Other mining and quarrying and mining support service activities	746	784	20	1 550
10 Manufacture of food products	3 113	5 930	5 348	14 391
11 Manufacture of beverages	268	581	898	1 746
12 Manufacture of tobacco products	.	.	.	.
13 Manufacture of textiles	139	245	143	526
14 Manufacture of wearing apparel	16	56	26	99
15 Manufacture of leather and related products	11	41	17	69

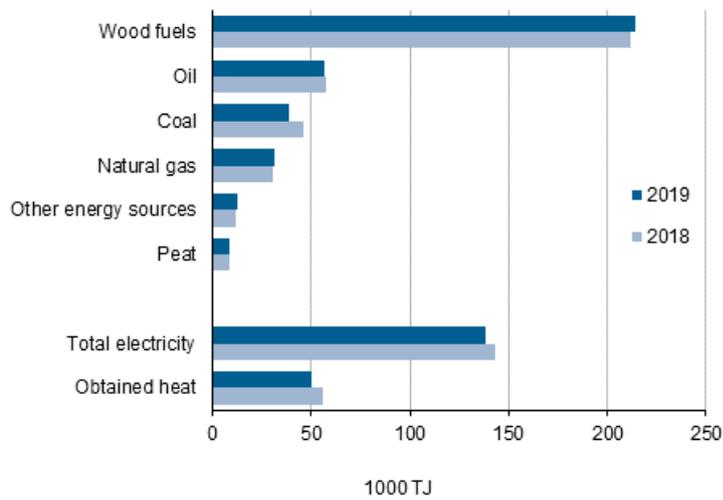
Industries	Fuels, TJ	Electricity (nett), TJ	Heat (nett) TJ	Total, TJ
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8 839	4 876	7 846	21 561
17 Manufacture of paper and paper products	242 692	34 684	11 566	288 942
18 Printing and reproduction of recorded media	66	798	269	1 133
19 Manufacture of coke and refined petroleum products	34 031	4 621	5 633	44 285
20 Manufacture of chemicals and chemical products	18 288	15 524	7 943	41 756
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	25	320	328	673
22 Manufacture of rubber and plastic products	518	2 520	923	3 960
23 Manufacture of other non-metallic mineral products	8 338	2 809	481	11 628
24 Manufacture of basic metals	41 654	19 699	4 242	65 595
25 Manufacture of fabricated metal products, except machinery and equipment	1 180	3 533	982	5 694
26 Manufacture of computer, electronic and optical products	23	1 167	396	1 585
27 Manufacture of electrical equipment	94	1 105	548	1 747
28 Manufacture of machinery and equipment n.e.c.	772	2 247	1 202	4 220
29 Manufacture of motor vehicles, trailers and semi-trailers	259	547	503	1 310
30 Manufacture of other transport equipment	255	536	396	1 188
31 Manufacture of furniture	141	239	95	474
32 Other manufacturing	32	184	107	323
33 Repair and installation of machinery and equipment	126	387	291	804
Total	361 975	107 654	50 469	520 099

Appendix table 3. Total electricity consumption in manufacturing 2019

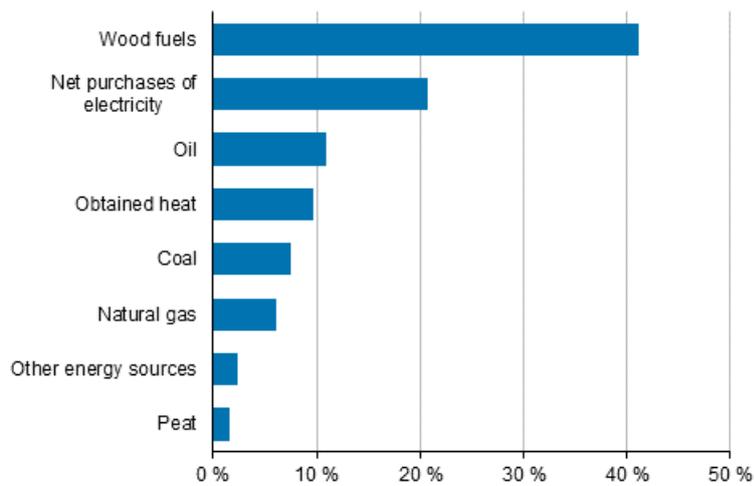
Industries	GWh
07 Mining of metal ores	1 172
0809 Other mining and quarrying and mining support service activities	218
10 Manufacture of food products	1 699
11 Manufacture of beverages	162
12 Manufacture of tobacco products	.
13 Manufacture of textiles	68
14 Manufacture of wearing apparel	15
15 Manufacture of leather and related products	11
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1 394
17 Manufacture of paper and paper products	17 088
18 Printing and reproduction of recorded media	222
19 Manufacture of coke and refined petroleum products	1 283
20 Manufacture of chemicals and chemical products	4 557
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	89
22 Manufacture of rubber and plastic products	700
23 Manufacture of other non-metallic mineral products	781
24 Manufacture of basic metals	6 092
25 Manufacture of fabricated metal products, except machinery and equipment	990
26 Manufacture of computer, electronic and optical products	324
27 Manufacture of electrical equipment	310
28 Manufacture of machinery and equipment n.e.c.	643
29 Manufacture of motor vehicles, trailers and semi-trailers	154
30 Manufacture of other transport equipment	149
31 Manufacture of furniture	67
32 Other manufacturing	51
33 Repair and installation of machinery and equipment	111
Total	38 350

Appendix figures

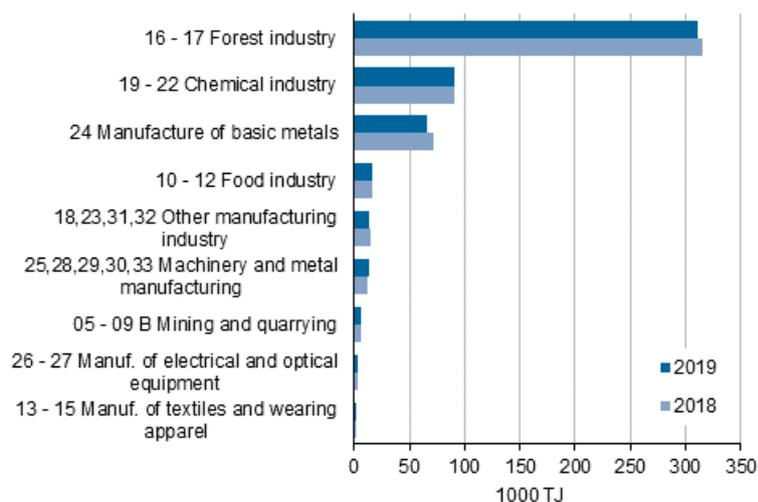
Appendix figure 1. Use of energy in manufacturing



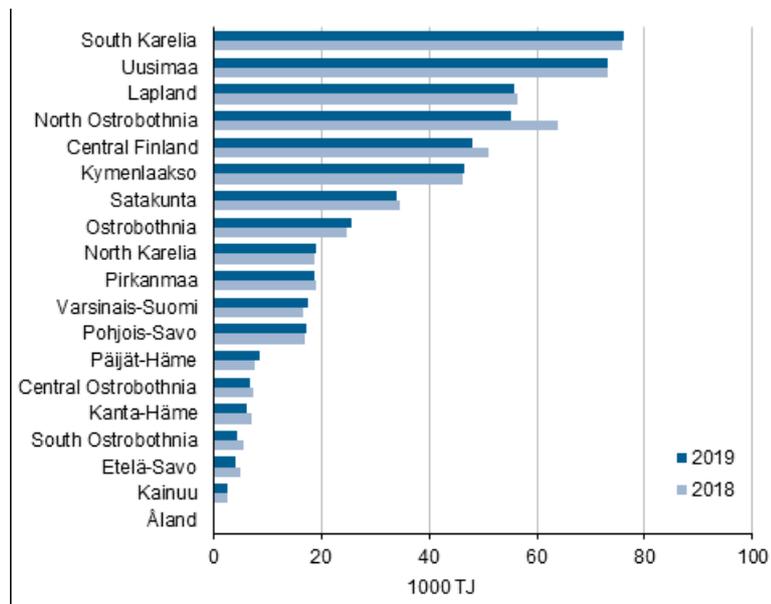
Appendix figure 2. Energy use in manufacturing by energy source



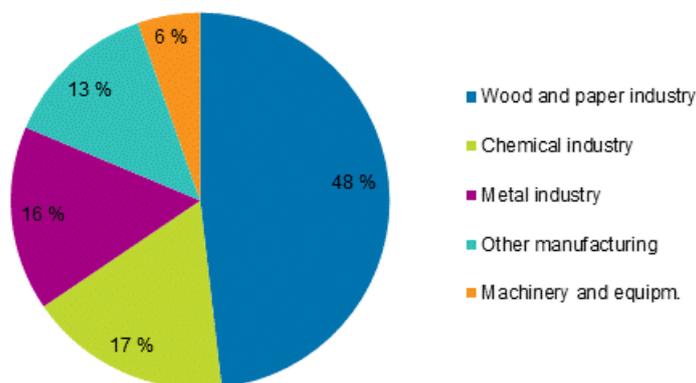
Appendix figure 3. Energy use in manufacturing by industry



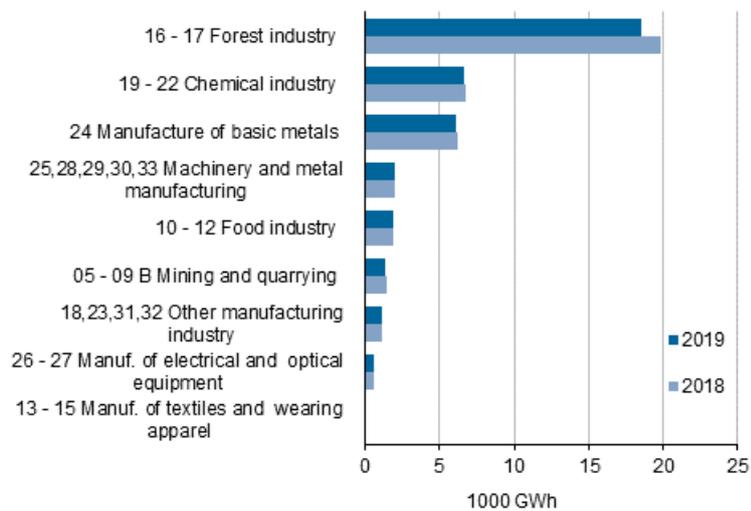
Appendix figure 4. Energy use in manufacturing by region



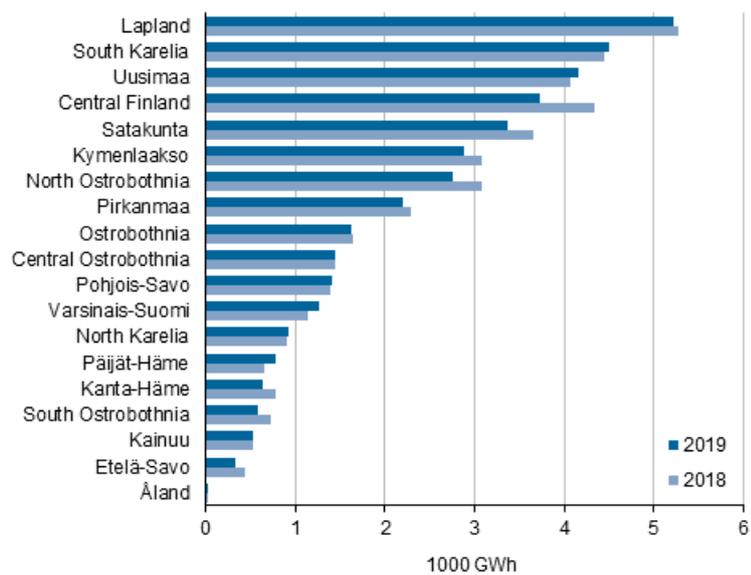
Appendix figure 5. Total electricity consumption in manufacturing



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