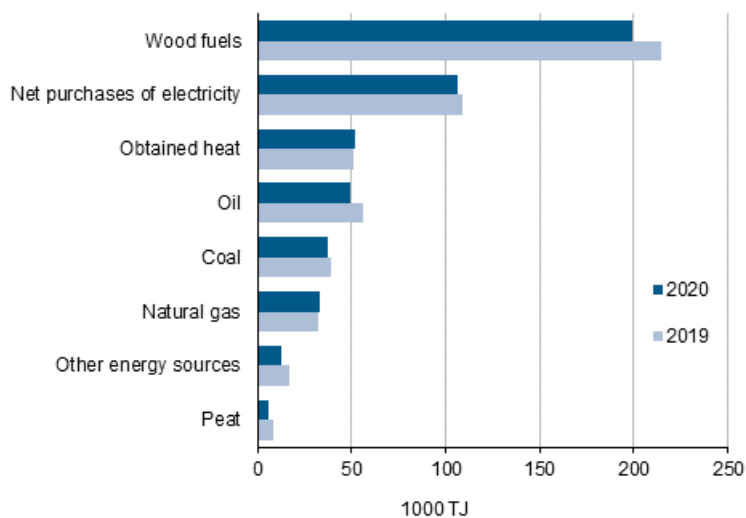


Energy use in manufacturing 2020

Energy use in manufacturing decreased by 6 per cent in 2020

According to Statistics Finland, energy use in manufacturing decreased by six per cent in 2020. Manufacturing consumed 496 petajoules (PJ) of energy, which was below the consumption in 2009 during the financial crisis, being the lowest consumption in the millennium. The total use of electricity in manufacturing decreased by four per cent.

Energy use in manufacturing



Manufacturing production and energy consumption decreased

The global insecurity caused by the corona pandemic was evident in manufacturing, for instance, in decreasing orders and disruptions in the production chains of manufacturing. However, manufacturing in Finland was spared the worst corona-related damages as the long delivery cycles of the investment commodity intensive export industry boosted production. Demand for raw materials also remained strong. Manufacturing was not closed widely in Finland either, and manufacturing did not face the same kind of sudden halt as many service industries. Manufacturing production continued through the corona, although at a lower level than before. Diminished output was visible especially in the fallen energy consumption of energy-intensive industries. The biggest drop was seen in the energy used by the forest industry, which was eight per cent lower than one year before. A decline was also seen in the manufacture of basic metals

and in the chemical industry. Energy consumption in manufacturing accounts for around 40 per cent of Finland's total energy consumption.

Share of fossil fuels continued decreasing

Compared with 2019, the share of fossil fuels and peat fell from 26 to 25 per cent. As in the previous year, the use of natural gas grew particularly due to increased use of liquefied natural gas (LNG). The consumption of oil fell by 13 per cent and the share of oil was for the first time under ten per cent of total manufacturing consumption. The use of peat dropped by 25 per cent compared to 2019, being around one per cent of all energy used in manufacturing. The consumption of wood fuels decreased by seven per cent and its share was 40 per cent of all energy consumption. The share fell for the first time after growing continuously throughout the past decade.

Regional changes followed the location of manufacturing

Examined by region, energy consumption decreased most in Central Finland and North Ostrobothnia. The use of electricity in manufacturing fell especially in Kymenlaakso, Central Finland, Satakunta and North Ostrobothnia. The changes particularly show the lower capacity utilisation rate in the forest industry. Production in the forest industry was also hampered by large strikes before the coronavirus in both the mechanical forest industry and the manufacturing of pulp, paper and paperboard. In 2020, the forest industry accounted for 46 per cent of all energy consumed in manufacturing and for the majority of all renewable fuels in manufacturing.

Contents

Tables

Appendix tables

Appendix table 1. Energy use in manufacturing by energy source 2020.....	4
Appendix table 2. Energy use in manufacturing by industry 2020.....	5
Appendix table 3. Total electricity consumption in manufacturing 2020.....	6

Figures

Appendix figures

Appendix figure 1. Use of energy in manufacturing.....	7
Appendix figure 2. Energy use in manufacturing by energy source.....	7
Appendix figure 3. Energy use in manufacturing by industry.....	8
Appendix figure 4. Energy use in manufacturing by region.....	8
Appendix figure 5. Total electricity consumption in manufacturing.....	8
Appendix figure 6. Total electricity consumption by manufacturing branch.....	9
Appendix figure 7. Total electricity consumption in manufacturing by region.....	9

Appendix tables

Appendix table 1. Energy use in manufacturing by energy source 2020

Source of energy	TJ	GWh
Refinery gas	25 136	6 982
LPG (Liquefied petroleum gas)	4 147	1 152
Light fuel oil and Gasoil	3 924	1 090
Heavy fuel oils	5 528	1 536
Petroleum coke	5 667	1 574
Recycled and waste oils	380	106
Other petroleum products	4 486	1 246
Hard coal, bituminous	11 400	3 167
Other coal	49	14
Coke	13 979	3 883
Blast furnace gas and Coke oven gas and CO gas	11 799	3 277
Natural gas	33 080	9 189
Milled peat	6 335	1 760
Sod peat and Peat pellets and briquettes	13	3
Forest chippings and other firewood	5 338	1 483
Bark	20 687	5 746
Sawdust, cutter shavings etc.	4 341	1 206
Other industrial wood residue	4 043	1 123
Black liquor and other concentrated liquors	158 132	43 926
Other by-products from wood processing industry	6 446	1 791
Wood pellets and briquettes	133	37
Biogas	2 966	824
Other biofuels	2 126	590
Recovered fuels	3 027	841
Waste and other non-specified energy sources	1 312	364
Hydrogen	275	76
Electricity	106 603	29 612
District heat	11 419	3 172
Heat used in production processes	40 499	11 250
Total	496 011	137 781

Appendix table 2. Energy use in manufacturing by industry 2020

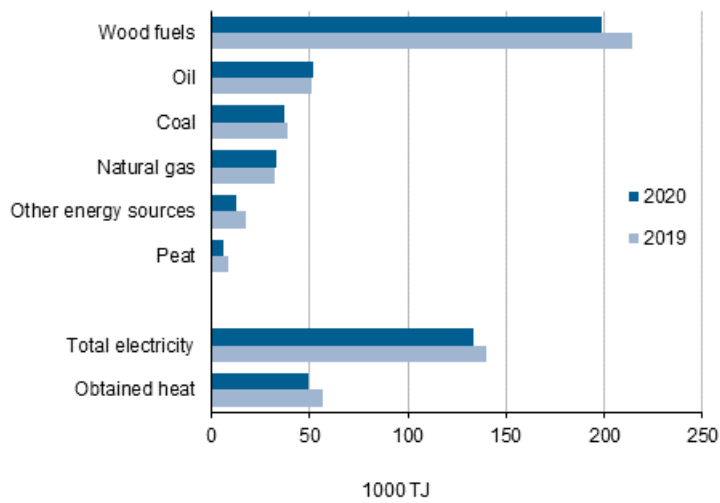
Industries	Fuels, TJ	Electricity (nett), TJ	Heat (nett) TJ	Total, TJ
05 Mining of coal and lignite	.	.	.	.
06 Extraction of crude petroleum and natural gas	.	.	.	.
07 Mining of metal ores	330	4 827	235	5 392
08-09 Other mining and quarrying and mining support service activities	976	708	7	1 691
10 Manufacture of food products	3 346	6 378	5 233	14 957
11 Manufacture of beverages	247	581	890	1 718
12 Manufacture of tobacco products	.	.	.	.
13 Manufacture of textiles	149	271	176	597
14 Manufacture of wearing apparel	16	62	22	101
15 Manufacture of leather and related products	10	43	12	65
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8 789	5 026	8 172	21 987
17 Manufacture of paper and paper products	224 554	32 732	12 535	269 821
18 Printing and reproduction of recorded media	53	881	286	1 220
19 Manufacture of coke and refined petroleum products	31 896	4 498	5 950	42 344
20 Manufacture of chemicals and chemical products	14 936	15 395	8 037	38 368
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	21	317	310	648
22 Manufacture of rubber and plastic products	502	2 533	845	3 880
23 Manufacture of other non-metallic mineral products	8 168	2 621	529	11 317
24 Manufacture of basic metals	41 077	19 805	4 221	65 103
25 Manufacture of fabricated metal products, except machinery and equipment	826	3 433	1 027	5 286
26 Manufacture of computer, electronic and optical products	26	1 019	313	1 357
27 Manufacture of electrical equipment	65	1 194	555	1 814
28 Manufacture of machinery and equipment n.e.c.	746	2 193	1 146	4 085
29 Manufacture of motor vehicles, trailers and semi-trailers	219	506	381	1 105
30 Manufacture of other transport equipment	261	554	419	1 233
31 Manufacture of furniture	142	204	81	427
32 Other manufacturing	32	225	145	402
33 Repair and installation of machinery and equipment	102	595	394	1 091
Total	337 490	106 603	51 918	496 011

Appendix table 3. Total electricity consumption in manufacturing 2020

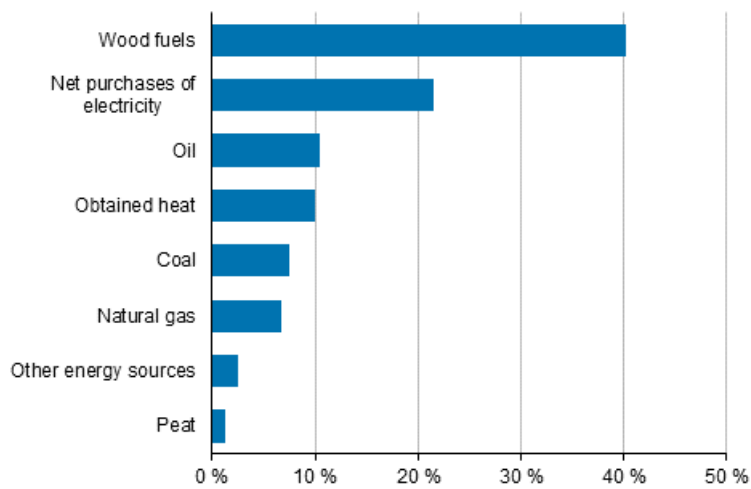
Industries	GWh
07 Mining of metal ores	1 341
08□09 Other mining and quarrying and mining support service activities	197
10 Manufacture of food products	1 775
11 Manufacture of beverages	162
12 Manufacture of tobacco products	.
13 Manufacture of textiles	75
14 Manufacture of wearing apparel	16
15 Manufacture of leather and related products	12
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1 395
17 Manufacture of paper and paper products	15 609
18 Printing and reproduction of recorded media	247
19 Manufacture of coke and refined petroleum products	1 250
20 Manufacture of chemicals and chemical products	4 491
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	88
22 Manufacture of rubber and plastic products	704
23 Manufacture of other non-metallic mineral products	729
24 Manufacture of basic metals	6 270
25 Manufacture of fabricated metal products, except machinery and equipment	958
26 Manufacture of computer, electronic and optical products	283
27 Manufacture of electrical equipment	333
28 Manufacture of machinery and equipment n.e.c.	625
29 Manufacture of motor vehicles, trailers and semi-trailers	148
30 Manufacture of other transport equipment	154
31 Manufacture of furniture	57
32 Other manufacturing	63
33 Repair and installation of machinery and equipment	166
Total	37 148

Appendix figures

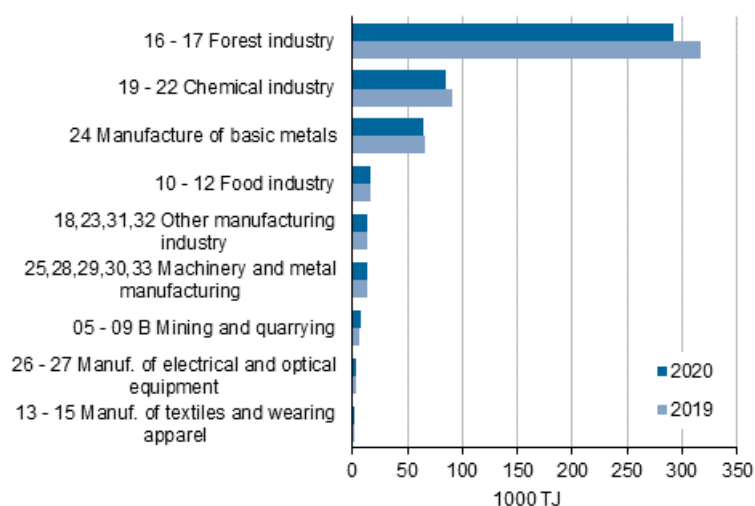
Appendix figure 1. Use of energy in manufacturing



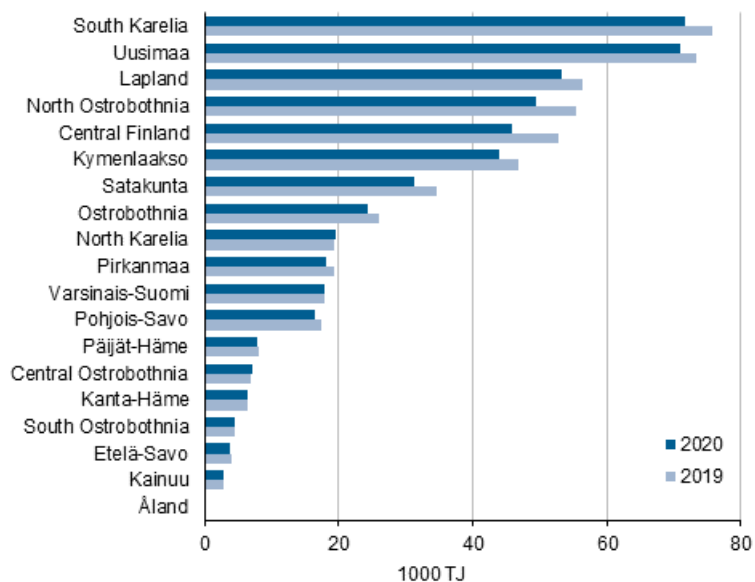
Appendix figure 2. Energy use in manufacturing by energy source



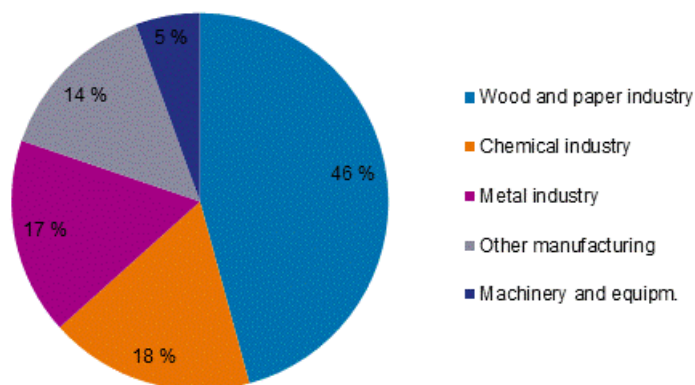
Appendix figure 3. Energy use in manufacturing by industry



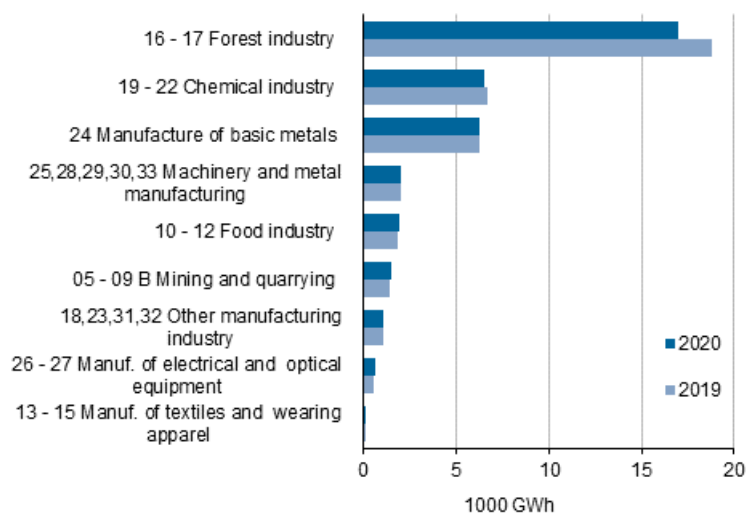
Appendix figure 4. Energy use in manufacturing by region



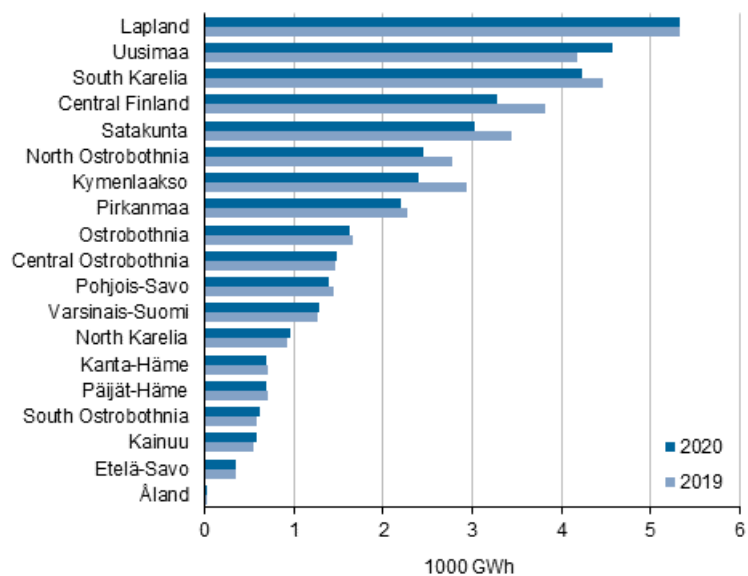
Appendix figure 5. Total electricity consumption in manufacturing



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