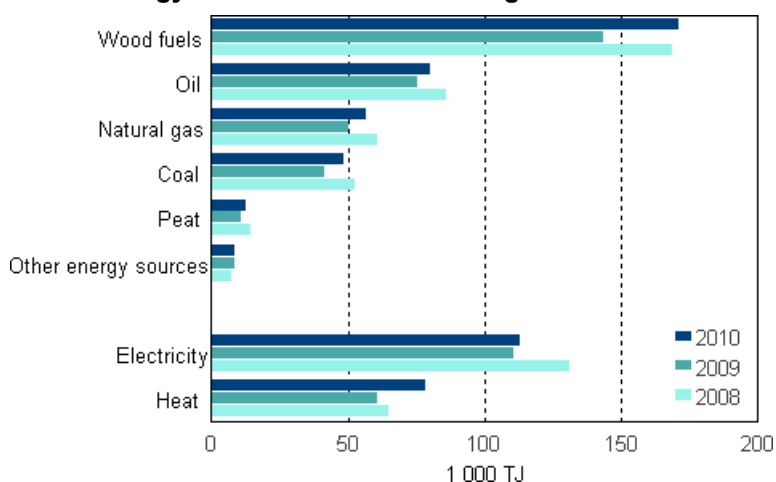


Energy use in manufacturing 2010

Recovery of industrial production also increased energy consumption in manufacturing in 2010

According to Statistics Finland, the consumption of energy in manufacturing went up by around 13 per cent in 2010. Energy use in manufacturing totalled 573 petajoule (PJ), which according to preliminary data, is around one half of total final energy consumption in Finland. The use of electricity in manufacturing went up by over ten per cent. Energy use in manufacturing returned nearly to the level of 2008 after the previous year's fall. Energy use increased on account of the recovery of industrial production.

Use of energy sources in manufacturing



The total use of electricity in manufacturing amounted to 42.5 terawatt hours (TWh) in 2010. Over 52 per cent of the electricity used in manufacturing was consumed in the forest industry. The chemical industry accounted for 16 per cent and the manufacture of basic metals for 13 per cent of the total use of electricity. The total use of electricity went up most in the industry of mining and quarrying. In contrast, the use of electricity went down in the electronics and electrical industry, in the textile and clothing industry and in the food industry. Of the regions, the highest amounts of electricity were used in manufacturing establishments in South Karelia and Central Finland, both of which accounted for over ten per cent of all electricity used in manufacturing.

Of fuels the most used in manufacturing were wood fuels, the use of which made up 45 per cent of the volume of fuels used. The use of wood fuels went up by nearly 20 per cent from the year before. Wood fuels were used especially in the wood processing industry for production of electricity and heat. Other significant energy sources for manufacturing were oil and natural gas. The use of nearly all fuels grew from the previous year.

According to preliminary data on the volume of industrial output, industrial production in 2010 grew most in mining and quarrying and in the metal industry. In these industries the consumption of energy also increased most. The biggest energy consumer in manufacturing was the forest industry, which expended 54 per cent of all energy used in manufacturing. Other major energy users were the chemical industry and the manufacture of basic metals. The consumption of energy fell most in the electronic and electrical industry and in the textile and clothing industry. These industries were also the smallest energy users.

The use volume of heat purchased from outside grew by nearly 30 per cent from the previous year. Nearly one half of purchased heat was used in the forest industry. Other big users of heat were the chemical industry and the machinery and metal products industry.

Manufacturing in South Karelia was the biggest user of energy in 2010. South Karelian manufacturing enterprises consumed around 13 per cent of the energy used by manufacturing. In North Ostrobothnia and Itä-Uusimaa manufacturing consumed over ten per cent of the energy used by the entire Finnish manufacturing. In 2010 energy use increased most in North Karelia, where one year previously it had also fallen most.

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Appendix tables

Appendix table 1. Energy use in manufacturing by energy source 2010

Source of energy	TJ	GWh	Confidence interval, ± %
Refinery gas	27242,5	7567,4	0,0
LPG (Liquefied petroleum gas)	9982,5	2772,9	3,5
Other petroleum products	4831,4	1342,0	0,0
Light fuel oil and Gasoil	8236,6	2287,9	19,3
Heavy fuel oils	24825,5	6896,0	2,3
Petroleum coke	4656,9	1293,6	0,0
Recycled and waste oils	708,9	196,9	0,0
Hard coal, bituminous	5617,7	1560,5	0,0
Other coal	.	.	.
Coke ¹⁾	24045,7	6679,4	0,0
Blast furnace gas and Coke oven gas	19246,0	5346,1	0,0
Natural gas	57502,6	15972,9	2,5
Milled peat	12812,9	3559,1	0,1
Sod peat and Peat pellets and briquettes	244,7	68,0	0,0
Forest chippings and other firewood	5605,6	1557,1	2,8
Bark	20617,7	5727,1	4,3
Sawdust, cutter shavings etc.	2249,5	624,8	9,7
Other industrial wood residue	3304,6	917,9	6,9
Black liquor and other concentrated liquors	137144,5	38095,7	0,0
Other by-products from wood processing industry	2584,9	718,0	0,0
Wood pellets and briquettes	91,1	25,3	0,0
Other biofuels	1354,8	376,3	0,0
Biogas	60,5	16,8	0,0
Recovered fuels	2652,3	736,8	0,0
Waste and other non-specified energy sources	563,6	156,6	0,0
Exothermic heat from industry	3165,8	879,4	0,0
Hydrogen	1101,3	305,9	0,0
Electricity	113569,2	31547,0	3,4
District heat	17136,8	4760,2	28,6
Heat used in production processes	62119,5	17255,4	8,6
Total	573367,3	159268,7	1,4

Includes industries (TOL 2008) B Mining and quarrying and C Manufacturing (including autoproducer plants). Does not include the energy use of industry D Electricity, gas and steam supply. Includes the fuel consumption of industrial establishments (including autoproducer establishments) as well as the external net purchases of electricity and heat. Summing these together gives the total energy use in the industry.

1) Includes coke intake into blast furnace and other coke consumption in industry. Energy content of coke has been subtracted by the energy content of the produced blast furnace gas.

Appendix table 2. Energy use in manufacturing by industry 2010

Industries	Fuels TJ	confidence interval, \pm %	Electricity (nett) TJ ¹⁾	confidence interval, \pm %	Heat (nett) TJ ¹⁾	confidence interval, \pm %	Total TJ	confidence interval, \pm %
05 Mining of coal and lignite	.	.	.	.	.	.	.	.
06 Extraction of crude petroleum and natural gas	.	.	.	.	.	.	.	.
07 Mining of metal ores	732,4	0,2	1798,9	3,0	46,1	18,9	2577,4	2,1
08–09 Other mining and quarrying and mining support service activities	2164,9	63,3	1409,3	5,8	214,0	8,6	3788,2	35,7
10 Manufacture of food products	4219,6	9,1	5776,4	11,7	5361,7	19,7	15357,7	7,0
11 Manufacture of beverages	611,1	7,3	726,1	34,6	2091,5	61,4	3428,6	38,0
12 Manufacture of tobacco products	.	.	.	.	.	.	.	.
13 Manufacture of textiles	310,9	72,5	519,9	24,8	225,7	13,2	1056,5	21,9
14 Manufacture of wearing apparel	110,0	62,4	87,6	45,5	73,4	46,9	271,0	29,9
15 Manufacture of leather and related products	39,4	53,0	75,4	57,3	27,9	53,7	142,8	24,3
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8116,2	14,7	5753,1	16,2	13884,5	31,7	27753,8	15,5
17 Manufacture of paper and paper products	218513,5	0,0	38152,8	0,3	25048,5	0,5	281714,8	0,1
18 Printing and reproduction of recorded media	181,5	21,5	1200,9	56,4	618,1	93,3	2000,5	41,7
19 Manufacture of coke and refined petroleum products	47316,1	0,0	4655,1	0,6	1519,0	3,2	53490,1	0,1
20 Manufacture of chemicals and chemical products	17406,0	0,9	15849,5	6,0	11965,3	21,1	45220,8	5,7
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	68,6	18,6	375,1	54,9	437,7	34,1	881,4	27,9
22 Manufacture of rubber and plastic products	1347,7	32,3	2844,0	23,4	1878,4	48,9	6070,2	16,6
23 Manufacture of other non-metallic mineral products	10157,4	4,5	3107,0	12,2	510,3	34,3	13774,7	3,8
24 Manufacture of basic metals	61263,1	0,6	17563,0	1,9	3798,3	1,7	82624,5	0,6
25 Manufacture of fabricated metal products, except machinery and equipment	2132,1	56,3	4150,8	32,7	1841,8	30,4	8124,7	21,6
26 Manufacture of computer, electronic and optical products	12,3	61,9	1288,5	35,9	600,2	31,4	1900,9	25,5
27 Manufacture of electrical equipment	226,2	60,2	1073,7	33,3	514,2	41,6	1814,1	22,5

Industries	Fuels TJ	confidence interval, ± %	Electricity (nett) TJ ¹⁾	confidence interval, ± %	Heat (nett) TJ ¹⁾	confidence interval, ± %	Total TJ	confidence interval, ± %
28 Manufacture of machinery and equipment n.e.c.	4119,6	6,8	4336,0	69,2	5429,7	78,4	13885,3	36,9
29 Manufacture of motor vehicles, trailers and semi-trailers	214,8	51,1	716,9	49,8	475,7	45,3	1407,4	26,9
30 Manufacture of other transport equipment	353,4	32,2	806,9	32,2	1554,1	82,6	2714,5	47,0
31 Manufacture of furniture	523,9	62,6	389,0	34,1	139,6	53,2	1052,5	31,6
32 Other manufacturing	66,1	48,0	362,7	44,8	85,7	70,8	514,4	32,5
33 Repair and installation of machinery and equipment	334,9	51,8	550,6	30,6	915,1	82,3	1800,6	41,9
Total	380541,8	0,6	113569,2	3,4	79256,3	9,0	573367,3	1,4

* Data in table cell are unreliable, as the variation coefficient exceeds the value 40.

. No data available (the sample contained no establishments)

Includes industries (TOL 2008) B Mining and quarrying and C Manufacturing (including autoproducer plants). Does not include the energy use of industry D Electricity, gas and steam supply. Includes the fuel consumption of industrial establishments (including autoproducer establishments) as well as the external net purchases of electricity and heat. Summing these together gives the total energy use in the industry.

1) Net purchases

Appendix table 3. Total electricity consumption in manufacturing 2010

Industries	GWh	confidence interval, ± %
05 Mining of coal and lignite	.	.
06 Extraction of crude petroleum and natural gas	.	.
07 Mining of metal ores	499,7	3,0
08–09 Other mining and quarrying and Mining support service activities	458,0	5,0
10 Manufacture of food products	1627,2	11,6
11 Manufacture of beverages	202,3	34,5
12 Manufacture of tobacco products	.	.
13 Manufacture of textiles	144,7	24,8
14 Manufacture of wearing apparel	24,3	45,5
15 Manufacture of leather and related products	21,0	57,3
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1611,9	16,1
17 Manufacture of paper and paper products	20570,0	0,2
18 Printing and reproduction of recorded media	333,6	56,4
19 Manufacture of coke and refined petroleum products	1293,1	0,6
20 Manufacture of chemicals and chemical products	4587,0	5,7
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	116,7	49,0
22 Manufacture of rubber and plastic products	794,0	23,2
23 Manufacture of other non-metallic mineral products	877,0	12,0
24 Manufacture of basic metals	5493,7	1,7
25 Manufacture of fabricated metal products, except machinery and equipment	1159,4	32,5
26 Manufacture of computer, electronic and optical products	357,9	35,9
27 Manufacture of electrical equipment	299,8	33,1
28 Manufacture of machinery and equipment n.e.c.	1232,8	67,7
29 Manufacture of motor vehicles, trailers and semi-trailers	199,7	49,7
30 Manufacture of other transport equipment	224,1	32,2
31 Manufacture of furniture	108,0	34,1
32 Other manufacturing	100,8	44,8
33 Repair and installation of machinery and equipment	154,7	30,3
Total	42491,4	2,5

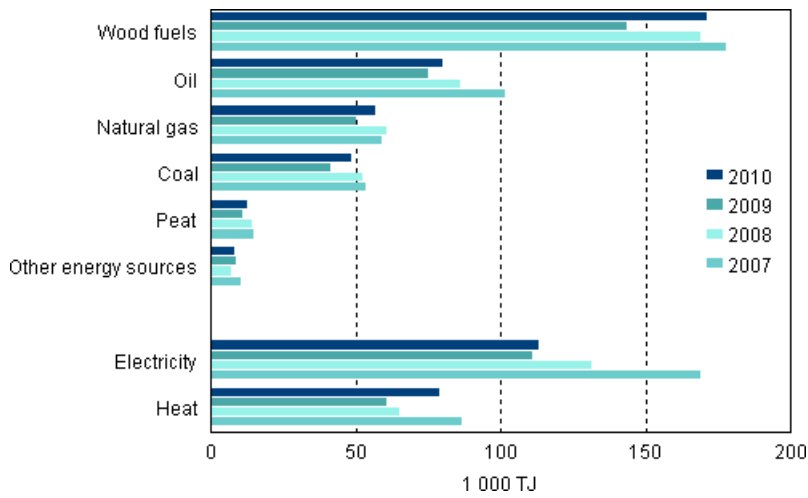
* Data in table cell are unreliable, as the variation coefficient exceeds the value 40.

. No data available (the sample contained no establishments)

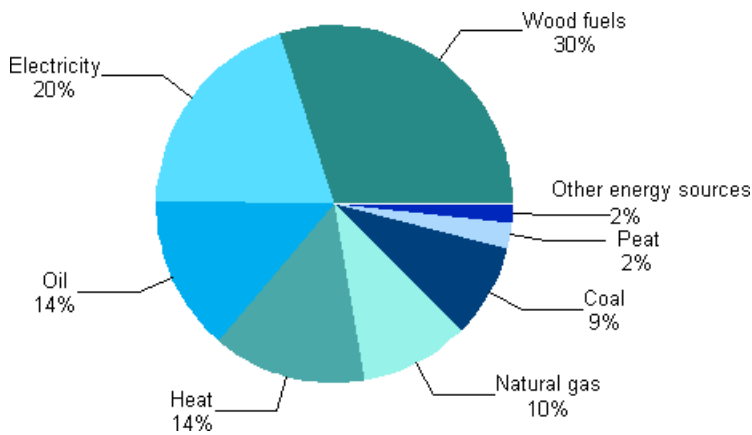
Includes industries (TOL 2008) B Mining and quarrying and C Manufacturing (including autoproducer plants). Does not include the energy use of industry D Electricity, gas and steam supply. Includes the fuel consumption of industrial establishments (including autoproducer establishments) as well as the external net purchases of electricity and heat. Summing these together gives the total energy use in the industry.

Appendix figures

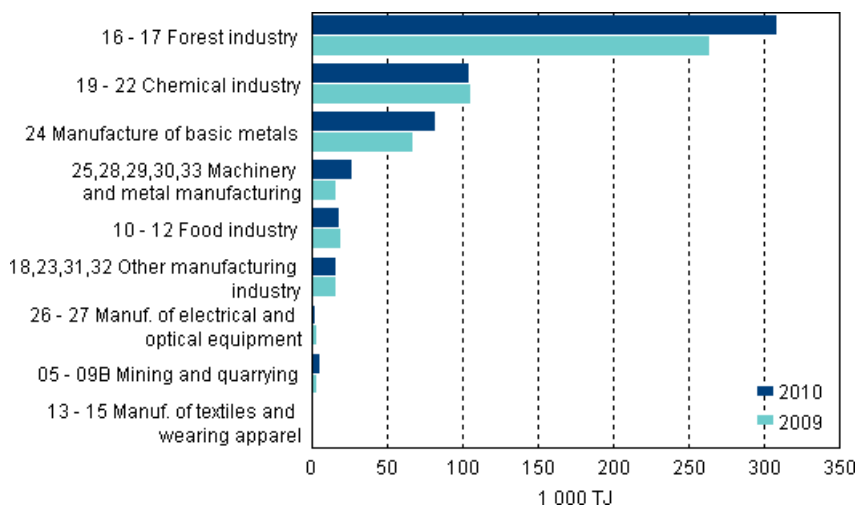
Appendix figure 1. Use of energy sources in manufacturing



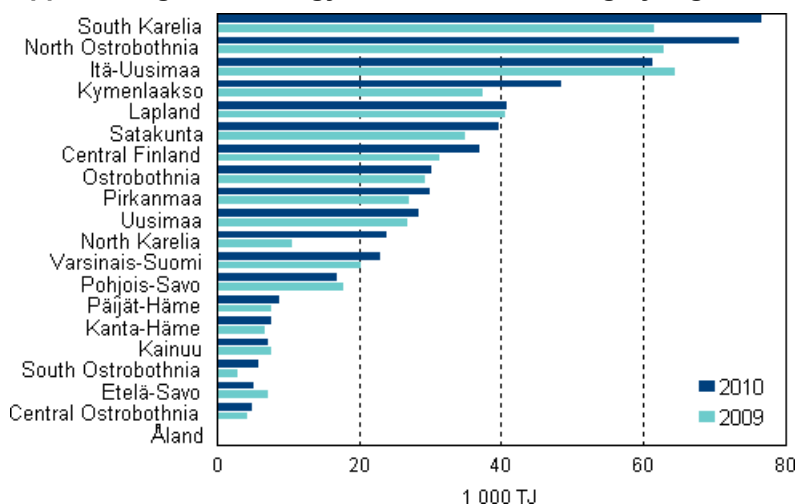
Appendix figure 2. Energy use in manufacturing by energy source 2010



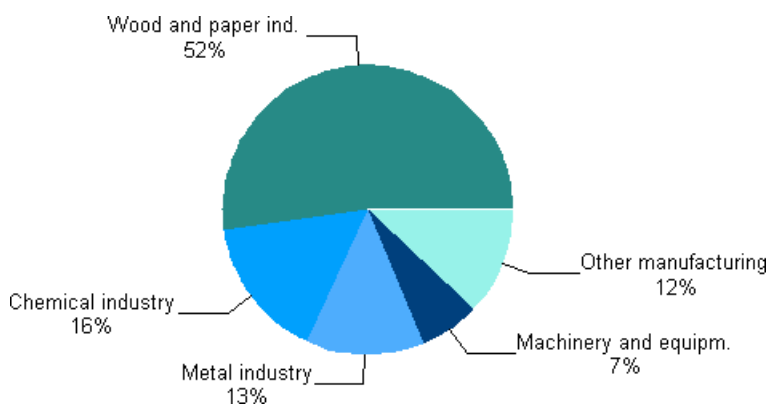
Appendix figure 3. Energy use in manufacturing by industry



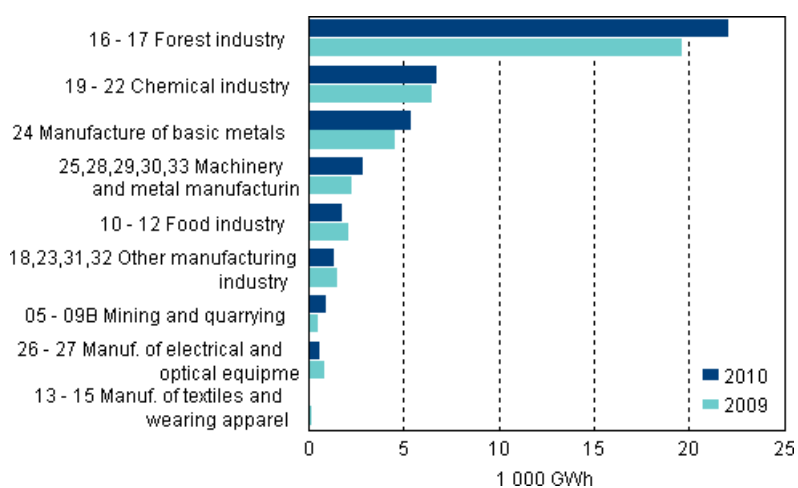
Appendix figure 4. Energy use in manufacturing by region



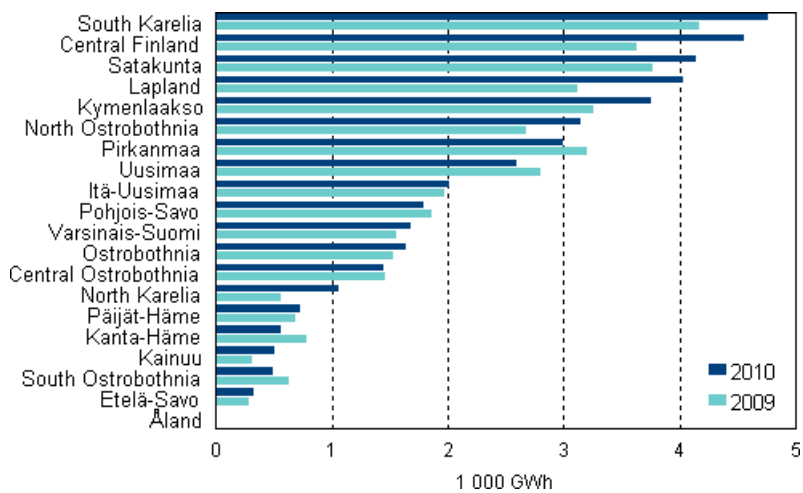
Appendix figure 5. Total electricity consumption in manufacturing 2010



Appendix figure 6. Total electricity consumption by manufacturing branch 2009 and 2010



Appendix figure 7. Total electricity consumption in manufacturing by region



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Source: Energy use in manufacturing, Statistics Finland