

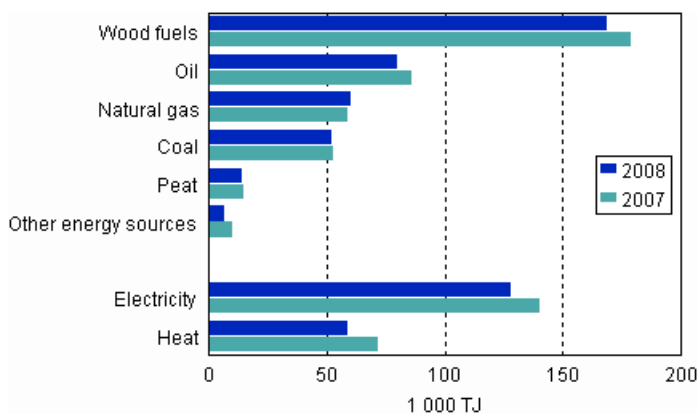
Energy use in manufacturing 2008

Energy use in manufacturing diminished by 7 per cent in 2008

According to Statistics Finland data, energy use in manufacturing totalled 570 petajoule (PJ) in 2008 (confidence interval ± 0.8 per cent). Compared to 2007, energy use in manufacturing diminished by 7 per cent. The main contributor to the reduction was the forest industry where energy use fell by 9 per cent. Wood fuels were the most used source of energy in manufacturing. Of all the industries, the forest industry used the largest amount of energy. It accounted for some 56 per cent of the total energy used in all manufacturing. Examined by region, energy use in manufacturing was highest in North Ostrobothnia, South Karelia and Itä-Uusimaa.

The most used fuels in manufacturing were wood, oil, natural gas and coal. The use of net electricity and heat diminished from the previous year. The use of electricity and heat is calculated in total use of energy as net purchases. This means that the amount of energy sold or delivered by an establishment is deducted from the amount of energy purchased or received.

Use of energy sources in manufacturing



The regions of North Ostrobothnia and South Karelia both used some 13 per cent of the energy used in all manufacturing. Manufacturing used the next largest amounts of energy in the regions of Itä-Uusimaa and Kymenlaakso, or 10 and 9 per cent, respectively, of all energy used in manufacturing. Of the regions, Etelä-Savo, South Ostrobothnia and Åland used the least amounts of energy.

In 2008, the forest industry accounted for almost 57 per cent of the total use of electricity in manufacturing. Of the regions, the highest amounts of electricity were used by manufacturing establishments in Kymenlaakso and Central Finland, both of which accounted for over 10 per cent of all electricity used in manufacturing.

Total consumption of electricity in manufacturing

Industries	1000 MWh	Change %	95% confidence interval, ± %
Forest industry	25 172,4	-10,9	0,9
Chemical industry	6 646,6	-1,0	3,0
Manufacture of basic metals	5 433,1	-5,3	1,7
Machinery and metal manufacturing	2 431,2	5,2	10,1
Other manufacturing	1 577,9	-9,6	13,7
Food industry	1 397,2	-14,8	18,6
Manufacture of electrical and optical equipment	789,0	-6,1	19,4
Mining and quarrying	524,5	-29,5	21,1
Manufacture of textiles and wearing apparel	216,6	-1,4	27,9
Total	44 226,0	-8,6	1,2

These statistics are based on an inquiry about energy use in manufacturing. The data were collected with the annual inquiry from establishments in the industry categories of Mining and quarrying (B) and Manufacturing (C) of the standard industrial classification TOL2008, as well as from the power plants closely connected with the activities of these establishments. The inquiry does not extend to category D, Electricity, gas and steam supply, of the classification. The data for 2008 were collected from a sample consisting of some 2,200 establishments. The data are published by energy source, industry and region.

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Tables

Table 1. Energy use in manufacturing by energy source 2008

Source of energy	TJ	GWh	Confidence interval, ± %
Refinery gas	25 679,9	7 133,3	0,0
LPG (Liquefied petroleum gas)	10 829,9	3 008,3	6,5
Other petroleum products	1 173,5	326,0	0,0
Light fuel oil and Gasoil	7 005,0	1 945,8	23,6
Heavy fuel oils	29 451,4	8 181,0	7,3
Petroleum coke	6 028,0	1 674,4	0,0
Recycled and waste oils	475,5	132,1	0,0
Hard coal, bituminous	5 424,5	1 506,8	0,0
Other coal	120,0	33,3	0,0
Coke ¹	22 798,3	6 332,9	0,0
Blast furnace gas and Coke oven gas	24 055,8	6 682,2	0,0
Natural gas	60 770,7	16 880,7	1,6
Milled peat	14 614,5	4 059,6	0,3
Sod peat and Peat pellets and briquettes	174,3	48,4	0,0
Forest chippings and other firewood	4 686,7	1 301,8	0,3
Bark	25 507,5	7 085,4	6,0
Sawdust, cutter shavings etc.	2 343,9	651,1	18,2
Other industrial wood residue	3 247,9	902,2	17,3
Black liquor and other concentrated liquors	129 970,2	36 102,8	0,0
Other by-products from wood processing industry	3 264,3	906,8	0,0
Recovered wood	12,4	3,4	0,0
Wood pellets and briquettes	106,3	29,5	0,0
Other biofuels	315,0	87,5	0,0
Biogas	113,9	31,6	0,0
Recovered fuels	1 349,1	374,7	0,0
Waste and other non-specified energy sources	601,1	167,0	0,0
Exothermic heat from industry	3 720,6	1 033,5	0,0
Hydrogen	1 346,4	374,0	0,0
Electricity	128 708,6	35 752,4	1,5
District heat	9 093,2	2 525,9	12,4
Heat used in production processes	50 653,1	14 070,3	6,2
Total	573 641,3	159 344,8	0,8

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.

Table 2. Energy use in manufacturing by industry 2008

Industries	Fuels TJ	confidence interval, ± %	Electricity T _J ¹	confidence interval, ± %	Heat TJ ¹	confidence interval, ± %	Total TJ	confidence interval, ± %
05 Mining of coal and lignite	.	.	.	.	.	.	.	.
06 Extraction of crude petroleum and natural gas	.	.	.	.	.	.	.	.
07 Mining of metal ores	521,7	58,5	1 051,8	37,8	48,9	5,6	1 622,4	0,0
08 Other mining and quarrying	3 064,7	70,6	831,0	8,5	226,1	12,0	4 121,8	51,7
09 Mining support service activities	.	.	0,1*	138,6	.	.	0,1*	138,6
10 Manufacture of food products	3 454,8	20,0	4 395,4	21,3	4 186,4	57,8	12 036,6	20,8
11 Manufacture of beverages	675,5	11,1	618,8	21,3	876,1	16,6	2 170,3	9,6
12 Manufacture of tobacco products	.	.	.	.	.	.	.	.
13 Manufacture of textiles	619,0	61,7	573,3	37,2	367,6	10,5	1 559,8	26,0
14 Manufacture of wearing apparel	36,6	50,6	119,5	63,9	66,8*	98,1	222,9	41,6
15 Manufacture of leather and related products	33,8	77,8	59,4	67,1	34,8	72,7	128,0	20,6
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8 524,6	18,8	5 977,5	10,0	11 607,6	13,8	26 109,7	7,5
17 Manufacture of paper and paper products	216 163,3	0,5	57 654,8	1,0	18 995,0	4,0	292 813,1	0,5
18 Printing and reproduction of recorded media	197,8	19,3	862,5	32,0	278,8	54,5	1 339,1	21,3
19 Manufacture of coke and refined petroleum products	45 582,5	0,0	4 556,1	0,6	1 234,4	3,2	51 373,0	0,1
20 Manufacture of chemicals and chemical products	20 290,8	0,8	15 573,9	3,6	11 209,6	3,9	47 074,3	1,1
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	71,0	18,5	271,1	13,8	354,2	9,6	696,3	7,5
22 Manufacture of rubber and plastic products	851,3	33,3	2 566,9	15,2	1 829,6	54,1	5 247,8	17,9
23 Manufacture of other non-metallic mineral products	13 257,6	4,3	3 739,1	10,2	661,1	53,0	17 657,7	2,7
24 Manufacture of basic metals	68 054,4	0,2	17 061,6	2,0	2 632,5	8,2	87 748,5	0,5
25 Manufacture of fabricated metal products, except machinery and equipment	1 286,2	26,9	3 754,2	15,6	1 214,2	27,2	6 254,6	9,7
26 Manufacture of computer, electronic and optical products	25,3	70,9	2 025,0	26,5	733,7	36,4	2 784,0	20,8
27 Manufacture of electrical equipment	86,3	59,0	814,5	24,8	333,9	29,8	1 234,7	17,5
28 Manufacture of machinery and equipment n.e.c.	849,4	22,9	3 062,0	17,0	1 454,9	16,9	5 366,3	8,8

Industries	Fuels TJ	confidence interval, ± %	Electricity TJ ¹	confidence interval, ± %	Heat TJ ¹	confidence interval, ± %	Total TJ	confidence interval, ± %
29 Manufacture of motor vehicles, trailers and semi-trailers	328,0	26,4	501,5	37,0	262,8	73,1	1 092,4	22,4
30 Manufacture of other transport equipment	454,8	26,7	862,6	12,1	579,0	9,4	1 896,5	7,9
31 Manufacture of furniture	496,2	73,5	928,9	66,4	282,7	62,5	1 707,7	39,9
32 Other manufacturing	70,1*	89,3	147,6*	80,9	22,5*	82,9	240,2	54,8
33 Repair and installation of machinery and equipment	114,0	31,9	565,3	65,7	156,5	35,4	835,9	43,5
Total	385 186,4	0,8	128 708,6	1,5	59 746,3	5,5	573 641,3	0,8

* 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

Table 3. Energy use in manufacturing by industry 2008

Industries	Fuels GWh	confidence interval, ± %	Electricity GWh ¹	confidence interval, ± %	Heat GWh ¹	confidence interval, ± %	Total GWh	confidence interval, ± %
05 Mining of coal and lignite	.	.	.	.	.	.	.	.
06 Extraction of crude petroleum and natural gas	.	.	.	.	.	.	.	.
07 Mining of metal ores	144,9	58,5	292,2	37,8	13,6	5,6	450,7	0,0
08 Other mining and quarrying	851,3	70,6	230,8	8,5	62,8	12,0	1 145,0	51,7
09 Mining support service activities	.	.	0,0*	138,6	.	.	0,0*	138,6
10 Manufacture of food products	959,7	20,0	1 220,9	21,3	1 162,9	57,8	3 343,5	20,8
11 Manufacture of beverages	187,6	11,1	171,9	21,3	243,4	16,6	602,9	9,6
12 Manufacture of tobacco products	.	.	.	.	.	.	.	.
13 Manufacture of textiles	171,9	61,7	159,2	37,2	102,1	10,5	433,3	26,0
14 Manufacture of wearing apparel	10,2	50,6	33,2	63,9	18,6*	98,1	61,9	41,6
15 Manufacture of leather and related products	9,4	77,8	16,5	67,1	9,7	72,7	35,6	20,6
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	2 367,9	18,8	1 660,4	10,0	3 224,3	13,8	7 252,7	7,5
17 Manufacture of paper and paper products	60 045,4	0,5	16 015,2	1,0	5 276,4	4,0	81 337,0	0,5
18 Printing and reproduction of recorded media	54,9	19,3	239,6	32,0	77,5	54,5	372,0	21,3
19 Manufacture of coke and refined petroleum products	12 661,8	0,0	1 265,6	0,6	342,9	3,2	14 270,3	0,1
20 Manufacture of chemicals and chemical products	5 636,3	0,8	4 326,1	3,6	3 113,8	3,9	13 076,2	1,1
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	19,7	18,5	75,3	13,8	98,4	9,6	193,4	7,5
22 Manufacture of rubber and plastic products	236,5	33,3	713,0	15,2	508,2	54,1	1 457,7	17,9
23 Manufacture of other non-metallic mineral products	3 682,7	4,3	1 038,6	10,2	183,6	53,0	4 904,9	2,7
24 Manufacture of basic metals	18 904,0	0,2	4 739,3	2,0	731,2	8,2	24 374,6	0,5
25 Manufacture of fabricated metal products, except machinery and equipment	357,3	26,9	1 042,8	15,6	337,3	27,2	1 737,4	9,7
26 Manufacture of computer, electronic and optical products	7,0	70,9	562,5	26,5	203,8	36,4	773,3	20,8
27 Manufacture of electrical equipment	24,0	59,0	226,2	24,8	92,7	29,8	343,0	17,5
28 Manufacture of machinery and equipment n.e.c.	235,9	22,9	850,6	17,0	404,1	16,9	1 490,6	8,8
29 Manufacture of motor vehicles, trailers and semi-trailers	91,1	26,4	139,3	37,0	73,0	73,1	303,4	22,4

Industries	Fuels GWh	confidence interval, ± %	Electricity GWh ¹	confidence interval, ± %	Heat GWh ¹	confidence interval, ± %	Total GWh	confidence interval, ± %
30 Manufacture of other transport equipment	126,3	26,7	239,6	12,1	160,8	9,4	526,8	7,9
31 Manufacture of furniture	137,8	73,5	258,0	66,4	78,5	62,5	474,4	39,9
32 Other manufacturing	19,5*	89,3	41,0*	80,9	6,3*	82,9	66,7	54,8
33 Repair and installation of machinery and equipment	31,7	31,9	157,0	65,7	43,5	35,4	232,2	43,5
Total	106 996,2	0,8	35 752,4	1,5	16 596,2	5,5	159 344,8	0,8

* 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

Table 4. Total electricity consumption in manufacturing 2008

Industries	GWh	confidence interval, ± %
05 Mining of coal and lignite	.	.
06 Extraction of crude petroleum and natural gas	.	.
07 Mining of metal ores	293,3	37,1
08 Other mining and quarrying	231,2	8,5
09 Mining support service activities	0,0*	138,6
10 Manufacture of food products	1 225,4	21,2
11 Manufacture of beverages	171,9	21,3
12 Manufacture of tobacco products	.	.
13 Manufacture of textiles	166,9	35,6
14 Manufacture of wearing apparel	33,2	63,9
15 Manufacture of leather and related products	16,5	67,1
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1 673,2	9,9
17 Manufacture of paper and paper products	23 499,3	0,7
18 Printing and reproduction of recorded media	239,6	32,0
19 Manufacture of coke and refined petroleum products	1 265,6	0,6
20 Manufacture of chemicals and chemical products	4 592,7	3,6
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	75,3	13,8
22 Manufacture of rubber and plastic products	713,0	15,2
23 Manufacture of other non-metallic mineral products	1 039,3	10,1
24 Manufacture of basic metals	5 433,1	1,7
25 Manufacture of fabricated metal products, except machinery and equipment	1 044,7	15,6
26 Manufacture of computer, electronic and optical products	562,5	26,5
27 Manufacture of electrical equipment	226,5	24,8
28 Manufacture of machinery and equipment n.e.c.	850,6	17,0
29 Manufacture of motor vehicles, trailers and semi-trailers	139,3	37,0
30 Manufacture of other transport equipment	239,6	12,1
31 Manufacture of furniture	258,0	66,4
32 Other manufacturing	41,0*	80,9
33 Repair and installation of machinery and equipment	157,0	65,7
Total	44 226,0	1,2

* 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.

Figures

Figure 1. Use of energy sources in manufacturing

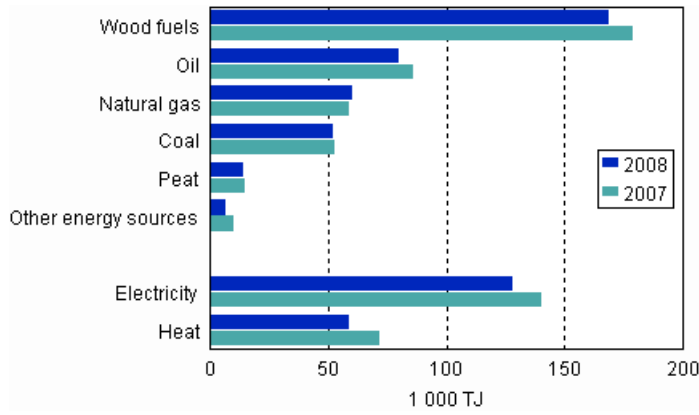


Figure 2. Energy use in manufacturing by energy source 2008

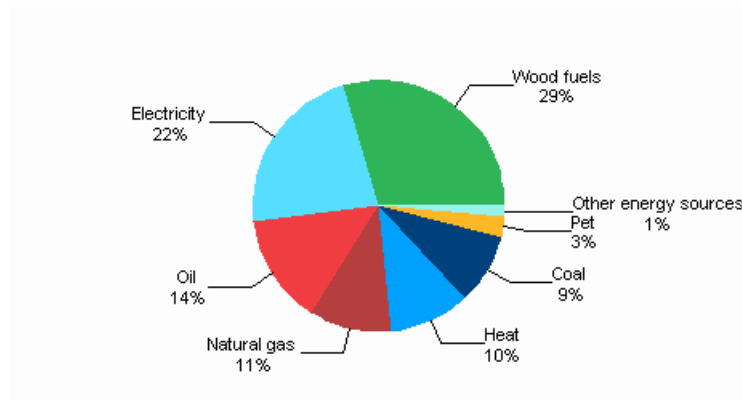


Figure 3. Energy use in manufacturing by industry

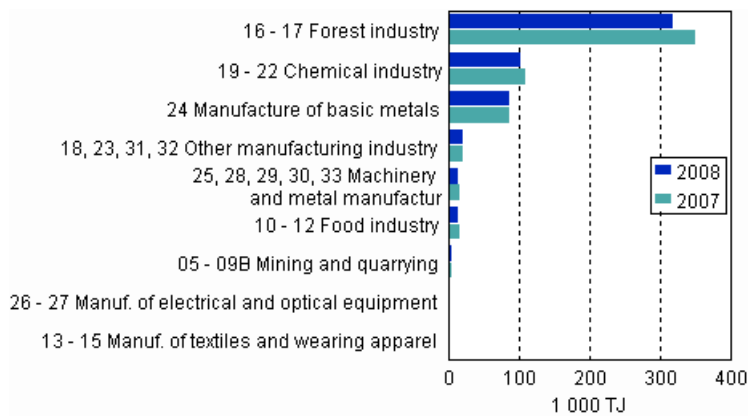


Figure 4. Energy use in manufacturing by region

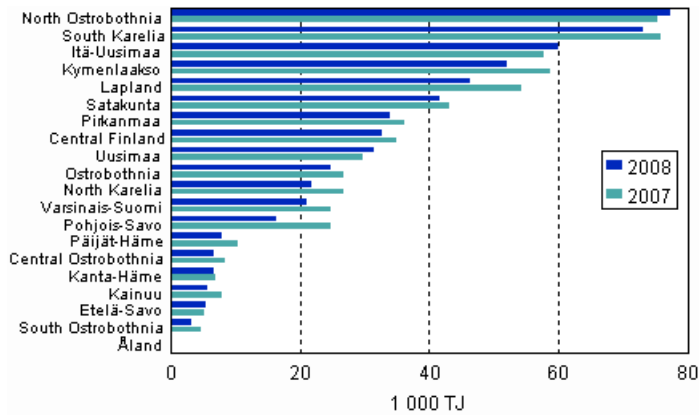


Figure 5. Total electricity consumption in manufacturing 2008

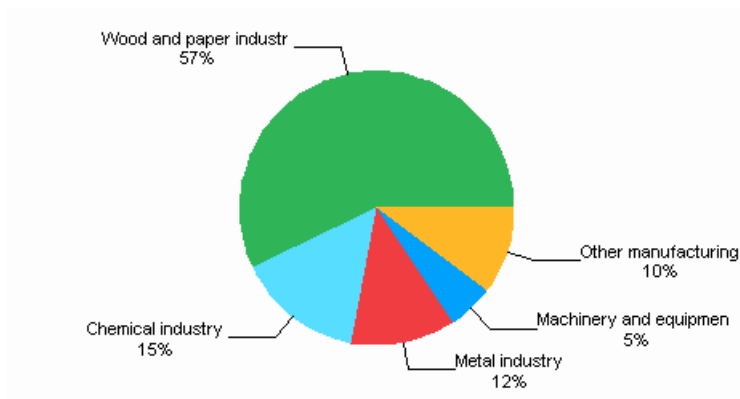


Figure 6. Total electricity consumption by manufacturing branch 2008

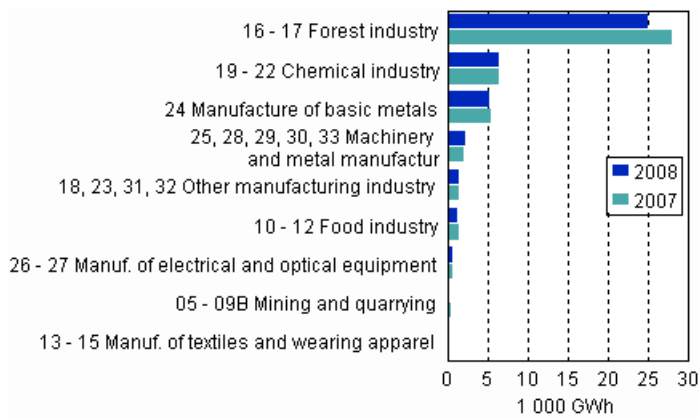
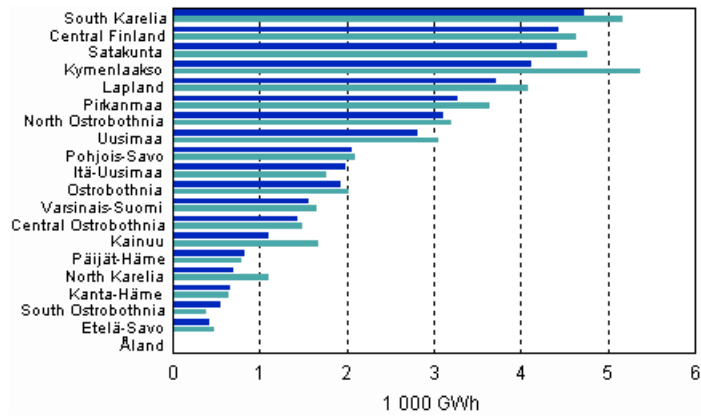


Figure 7. Total electricity consumption in manufacturing by region



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