

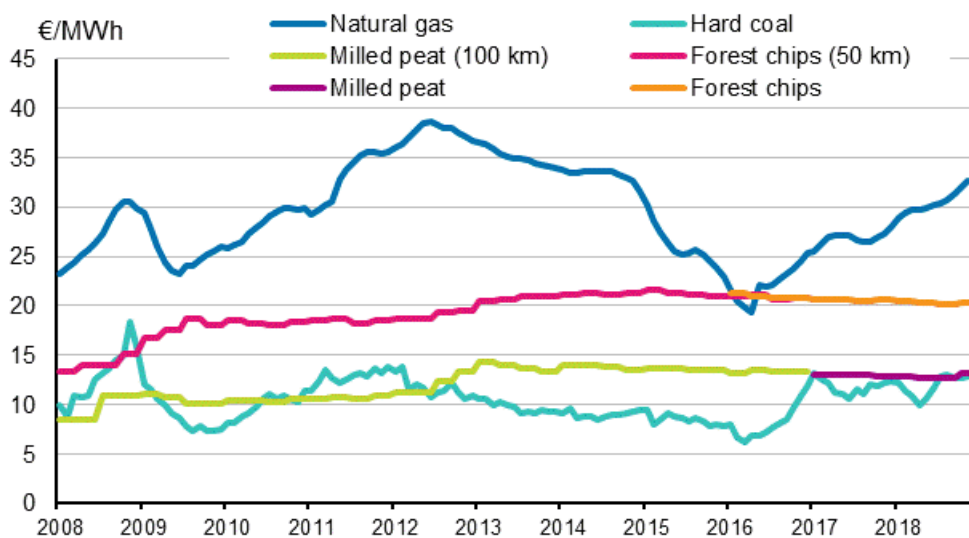
Energy prices

2018, 4th quarter

Energy prices grew in 2018

According to Statistics Finland's data, energy prices of almost all energy products went up in 2018. Especially prices of electricity and imported fuels increased.

Fuel Prices in Electricity Production



The rise in the world market price of oil that started in 2016 continued in 2018. This was also reflected in the consumer prices of liquid fuels. In 2018, the price of light fuel oil was, on average, 14 per cent up year-on-year. The corresponding price rise for motor gasoline was three per cent and for diesel oil eight per cent.

The tax-free price of hard coal remained, on average, on level with the previous year in 2018. In the last quarter of the year, the tax-free price of hard coal was five per cent higher than in the previous year. The tax-free price of natural gas continued growing in 2018. In December, the tax-free price of natural gas was 12 per cent higher than the previous year. The price of natural gas has been rising evenly since 2016.

The taxation on coal and natural gas was tightened at the beginning of the year. The taxable price of coal was six per cent higher in December compared to one year earlier. The corresponding rise in the price of natural gas considering the tax increase was 12 per cent. Of domestic fuels, the taxable price of milled peat increased by 1.5 per cent in the last quarter and the price of forest chippings fell by two per cent from the respective period of the previous year. In Finland, the fuels for electricity production are tax-free while excise duty is paid on fuels used in heat production.

The system price of the Nordic electricity exchange derived from the sell and buy bids on the exchange went up clearly in 2018. The price went up due to a rise in the exchange price of emission rights and the worsened water situation in the Nordic countries. In 2018, the system price of the electricity exchange was, on average, 49 per cent higher than in the previous year. The corresponding rise for the Finnish area price was 41 per cent. In December, the exchange price was 67 per cent higher on the system level and 64 per cent higher in the Finnish area than in the previous year.

In 2018, electricity prices for household customers were, on average, four per cent higher than in the year before, depending on the consumption category. For enterprise customers, the corresponding price rise was two per cent at its lowest and nine per cent at its highest. Household customers' electricity prices are based on the obligation to deliver prices published by the Energy Authority, while the prices of enterprise and corporate customers are based on Statistics Finland's price inquiry on electrical energy. The obligation to deliver price reacts slowly to changes in electricity prices on the Nordic electricity exchange.

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Appendix table 1. Energy taxes, precautionary stock fees and oil pollution fees

Date	Fuels ¹⁾								Electricity				
	Motor-gasoline, unleaded ²⁾	Diesel fuel ³⁾	Light fuel oil ¹²⁾	Liquefied petroleum gas	Heavy fuel oil	Hard coal ¹¹⁾	Natural gas	Peat	Consumption		Production		
									Electricity, I ⁴⁾	Electricity, II ⁵⁾	Nuclear power	Hydro power	Imports
c/l			c/kg		€/t	€/MWh		c/kWh					
Excise taxes ¹⁰⁾													
1.1.1990	21,53	16,82	0,34	-	0,34	2,69	0,17	0,34	-	-	-	-	-
1.1.1991	26,57	17,49	0,35	-	0,35	2,83	0,18	0,35	-	-	-	-	-
1.1.1992	28,26	17,49	0,35	-	0,35	2,83	0,18	0,35	-	-	-	-	-
1.8.1992	31,62	17,49	0,35	-	0,35	2,83	0,18	0,35	-	-	-	-	-
1.1.1993	39,52	19,17	1,41	-	1,12	5,61	0,35	0,70	0,25	0,25	0,10	-	0,10
1.7.1993	39,52	16,65	1,41	-	1,12	5,61	0,35	0,70	0,25	0,25	0,10	-	0,10
1.1.1994	40,05	17,29	2,05	-	1,98	11,30	1,09	0,35	-	-	0,35	0,03	0,22
1.1.1995	45,12	27,50	3,02	-	3,12	19,53	0,94	0,59	-	-	0,40	0,07	0,37
1.1.1996	51,85	27,50	3,02	-	3,12	19,53	0,94	0,59	-	-	0,40	0,07	0,37
1.1.1997	51,85	27,50	4,88	-	3,72	28,42	1,19	0,71	0,40	0,40	-	-	-
1.4.1997	51,85	27,50	4,88	-	3,72	28,42	1,19	0,71	0,56	0,24	-	-	-
1.1.1998	55,22	30,02	5,50	-	4,34	33,40	1,40	0,82	0,56	0,34	-	-	-
1.9.1998	55,22	30,02	6,37	-	5,40	41,37	1,73	1,51	0,69	0,42	-	-	-
1.1.2003	58,08	31,59	6,71	-	5,68	43,52	1,82	1,59	0,73	0,44	-	-	-
1.7.2005	58,08	31,59	6,71	-	5,68	43,52	1,82	-	0,73	0,44	-	-	-
1.1.2007	58,08	31,59	6,71	-	5,68	43,52	1,82	-	0,73	0,22	-	-	-
1.1.2008	62,02	36,05	8,35	-	6,42	49,32	2,016	-	0,87	0,25	-	-	-
1.1.2011	62,02	36,05	15,70	-	18,51	126,91	8,94	1,90	1,69	0,69	-	-	-
1.1.2012	64,36	46,60	15,70	-	18,51	126,91	8,940	1,90	1,69	0,69	-	-	-
1.1.2013	64,36	46,60	15,99	-	18,93	131,53	11,38	4,90	1,69	0,69	-	-	-
1.1.2014	66,61	49,31	15,99	-	18,93	131,53	11,38	4,90	1,89	0,69	-	-	-
1.1.2015	67,45	50,26	18,39	-	21,84	153,24	15,36	3,40	2,24	0,69	-	-	-
1.1.2016	67,45	50,26	21,05	24,82	25,08	177,36	17,34	3,40	2,24	0,69	-	-	-
1.3.2016	67,45	50,26	21,05	24,82	25,08	177,36	17,34	1,90	2,24	0,69	-	-	-
1.1.2017	69,57	52,67	22,52	26,54	26,83	189,84	18,53	1,90	2,24	0,69	-	-	-
1.1.2018	69,57	52,67	24,04	28,32	28,64	202,69	19,78	1,90	2,24	0,69	-	-	-
1.1.2019	69,57	52,67	24,53	27,90	27,23	200,58	20,57	3,00	2,24	0,69	-	-	-
Energy content tax ⁸⁾													
1.1.2011	50,36	-	7,70	-	8,79	54,54	3,00	-	-	-	-	-	-
1.1.2012	50,36	30,70	7,70	-	8,79	54,54	3,00	-	-	-	-	-	-
1.1.2013	50,36	30,70	6,65	-	7,59	47,10	4,45	-	-	-	-	-	-
1.1.2015	51,20	31,65	6,65	-	7,59	47,10	6,65	-	-	-	-	-	-
1.1.2016	51,20	31,65	6,65	8,50	7,59	47,10	6,65	-	-	-	-	-	-
1.1.2017	52,19	32,77	7,05	9,01	8,05	49,93	7,05	-	-	-	-	-	-
1.1.2018	52,19	32,77	7,50	9,58	8,56	53,13	7,50	-	-	-	-	-	-
1.1.2019	52,19	32,77	7,63	9,81	8,56	52,77	7,63	-	-	-	-	-	-
Carbon dioxide tax ⁹⁾													
1.1.2011	11,66	-	8,00	-	9,72	72,37	5,94	-	-	-	-	-	-
1.1.2012	14,00	15,90	8,00	-	9,72	72,37	5,94	-	-	-	-	-	-

Date	Fuels ¹⁾								Electricity				
									Consumption		Production		
	Motor-gasoline, unleaded ²⁾	Diesel fuel ³⁾	Light fuel oil ¹²⁾	Liquefied petroleum gas	Heavy fuel oil	Hard coal ¹¹⁾	Natural gas	Peat	Electricity, I ⁴⁾	Electricity, II ⁵⁾	Nuclear power	Hydro power	Imports
c/l			c/kg		€/t	€/MWh		c/kWh					
1.1.2013	14,00	15,90	9,34	-	11,34	84,43	6,93	-	-	-	-	-	-
1.1.2014	16,25	18,61	9,34	-	11,34	84,43	6,93	-	-	-	-	-	-
1.1.2015	16,25	18,61	11,74	-	14,25	106,14	8,71	-	-	-	-	-	-
1.1.2016	16,25	18,61	14,40	16,32	17,49	130,26	10,69	-	-	-	-	-	-
1.1.2017	17,38	19,90	15,47	17,53	18,78	139,91	11,48	-	-	-	-	-	-
1.1.2018	17,38	19,90	16,54	18,74	20,08	149,56	12,28	-	-	-	-	-	-
1.1.2019	17,38	19,90	16,90	18,09	18,67	147,81	12,94	-	-	-	-	-	-
Energy tax ⁷⁾													
1.1.2011	-	-	-	-	-	-	-	1,90	1,69	0,69	-	-	-
1.1.2013	-	-	-	-	-	-	-	4,90	1,69	0,69	-	-	-
1.1.2014	-	-	-	-	-	-	-	4,90	1,89	0,69	-	-	-
1.1.2015	-	-	-	-	-	-	-	3,40	2,24	0,69	-	-	-
1.1.2016	-	-	-	-	-	-	-	3,40	2,24	0,69	-	-	-
1.3.2016	-	-	-	-	-	-	-	1,90	2,24	0,69	-	-	-
1.1.2019	-	-	-	-	-	-	-	3,00	2,24	0,69	-	-	-
Strategic stockpile fees													
1.7.1984	0,72	0,39	0,39	-	0,32	1,48	-	-	-	-	-	-	-
1.1.1997	0,68	0,35	0,35	-	0,28	1,18	0,084	-	0,013	0,013	-	-	-
1.1.2016	0,68	0,35	0,35	0,11	0,28	1,18	0,084	-	0,013	0,013	-	-	-
Oil pollution fees ⁶⁾													
1.1.1990	0,28	0,031	0,031	-	0,037	-	-	-	-	-	-	-	-
1.1.2005	0,038	0,042	0,042	-	0,050	-	-	-	-	-	-	-	-
1.1.2010	0,113	0,126	0,126	-	0,150	-	-	-	-	-	-	-	-

1) Fuels in electricity production tax-exempt since 1 January 1997

2) Reformulated, since 1 January 1993, also sulphur-free since 1 September 2004. Fossil fuel

3) Sulphur-free, sulphur content < 50 ppm since 1 July 1993, sulphur content < 10 ppm since 1 September 2004. Fossil fuel.

4) Tax class I: others

5) Tax class II: industry and professional greenhouses

6) Fee for imported oil and oil products: 1,50 €/t

7) Energy tax included in excise taxes

8) Energy content tax included in excise taxes

9) Carbon dioxide tax included in excise taxes

10) Excise taxes contain energy content tax, carbon dioxide tax, and energy tax.

11) Excise taxes for hard coal is in the heat production. In CHP use excise tax is lower.

12) Fossil fuel. Sulphur-free.

Appendix table 2. Energy prices in heat production in December 2018

Energy source ³⁾	¹⁾ Price €/MWh	Annual change-%
²⁾ Hard coal (VAT 0%)	42,44	6,4
Natural gas (VAT 0%)	52,26	12,4
Forest chips (VAT 0%)	20,25	-1,6
Milled peat (VAT 0%)	15,02	1,5

1) Inclusive of excise duties.

2) The price is preliminary.

3) Sources: Energy Authority, Finnish Customs, FOEX Indexes Ltd, The Bioenergy Association of Finland,

Appendix table 3. Consumer prices of heating energy in December 2018

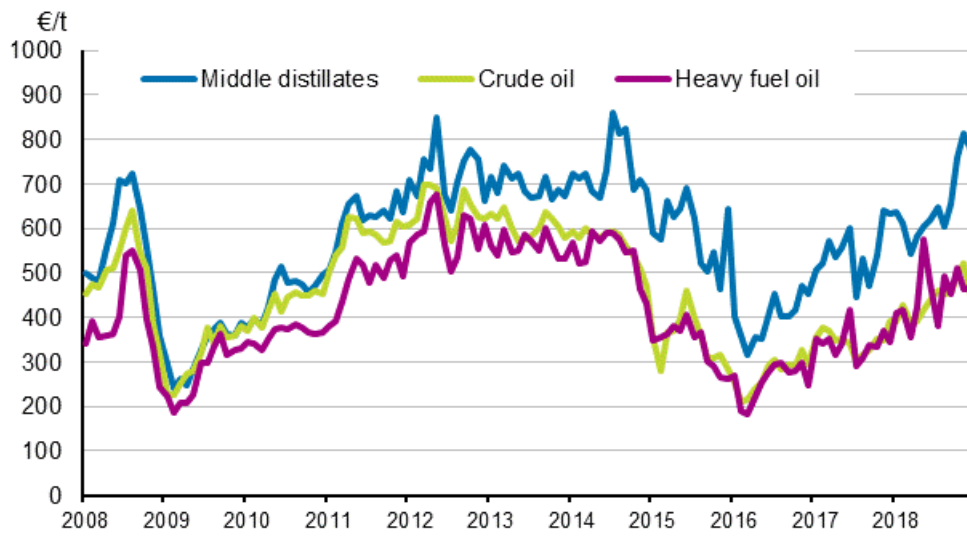
Energy source ²⁾	¹⁾ Price €/MWh	Annual change-%
Light fuel (VAT 24%)	97,7	6,4
Household electricity, L2 (VAT 24%)	137	10,9
Wood pellet (VAT 24%)	58	2,8
District heat, terraced house / low-rise block of flats (VAT 24%)	79,67	1,8

1) The prices do not take into account energy conversion losses. The price of district heat is from July 2018.

2) Sources: Finnish Energy Industries, Energy Authority, Statistics Finland

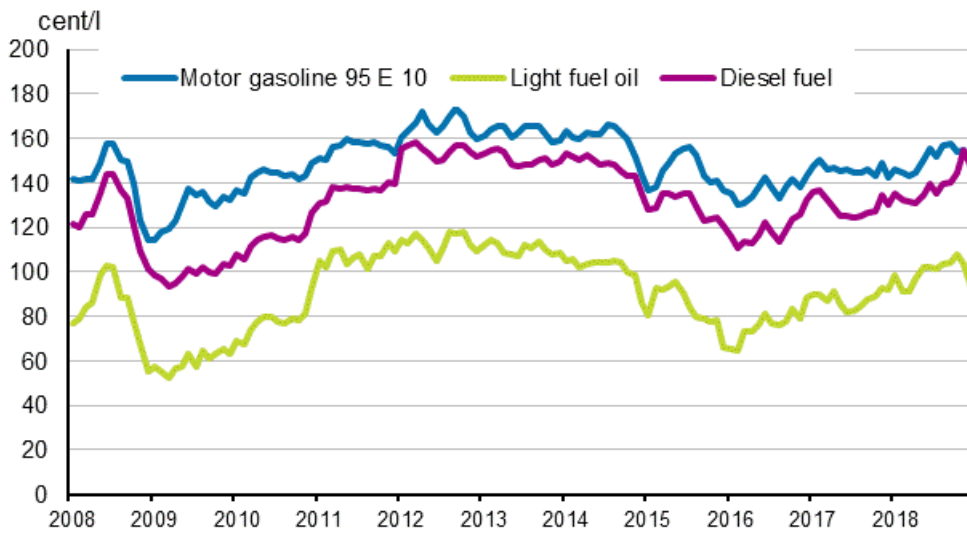
Appendix figures

Appendix figure 1. Import prices of oil



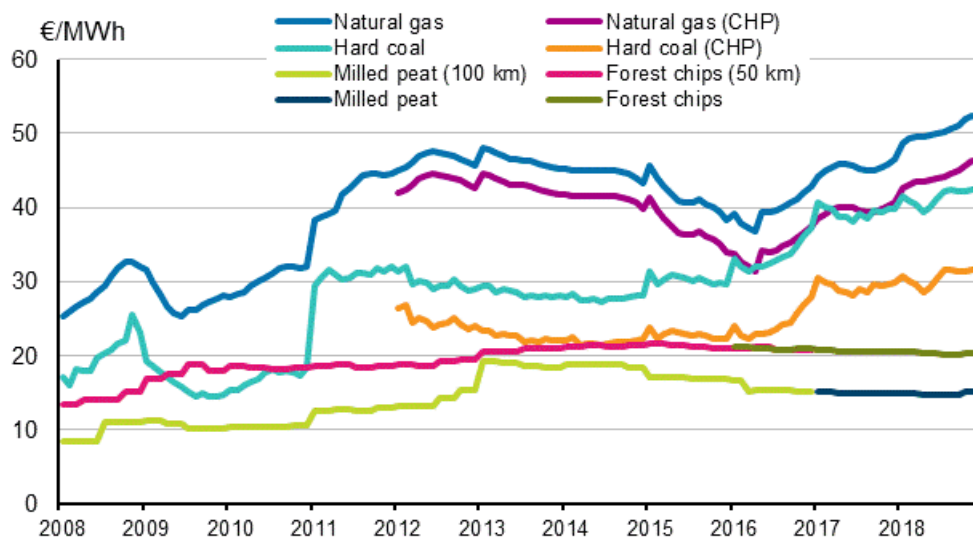
Source: Finnish Customs

Appendix figure 2. Consumer prices of principal oil products



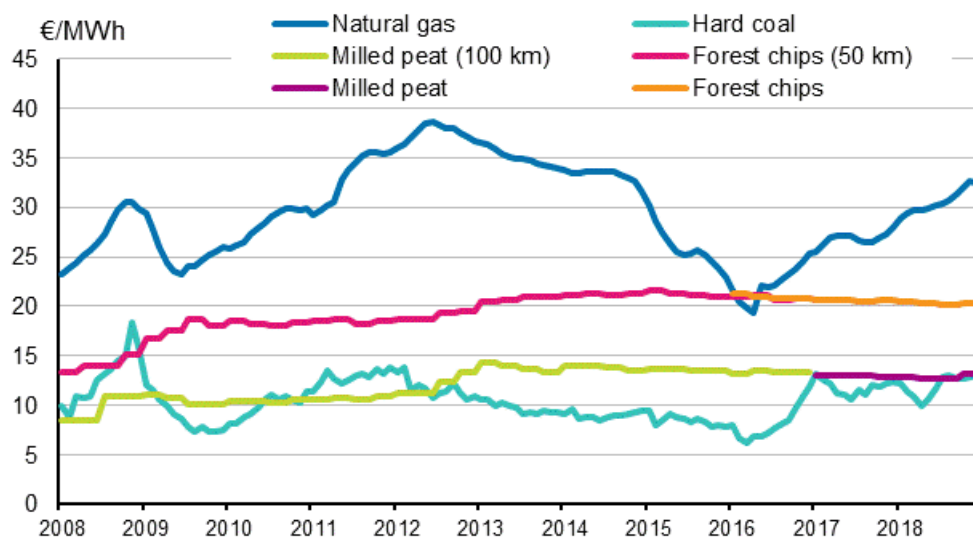
Source: Finnish Petroleum and Biofuels Association (-11/2018), Statistics Finland (12/2018-)

Appendix figure 3. Fuel prices in heat production



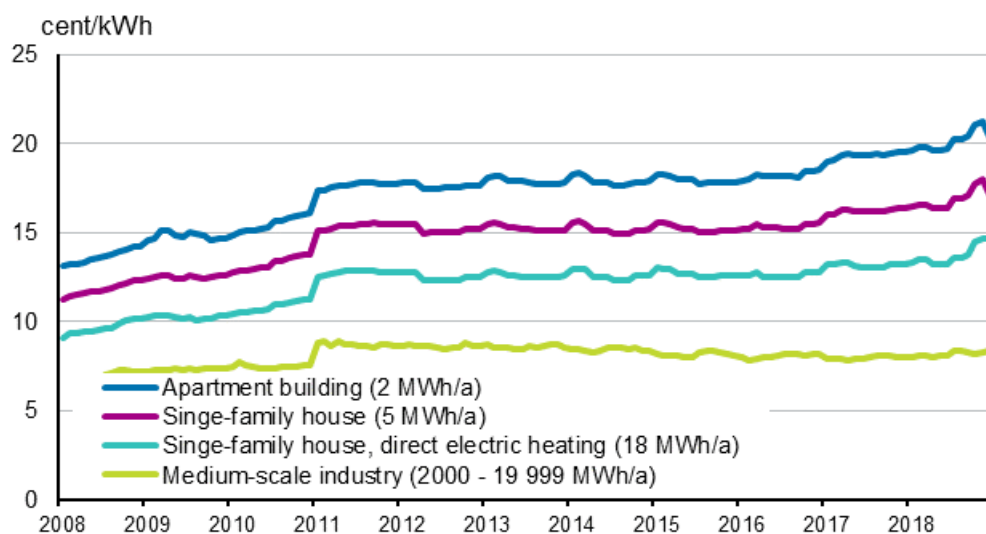
The prices include excise duties (VAT 0%). The carbon dioxide tax on natural gas and hard coal used in combined heat and power production was halved from the beginning of 2011. Sources: Finnish Customs, Energy Authority, The Bioenergy Association of Finland, Statistics Finland, FOEX Indexes Ltd

Appendix figure 4. Fuel prices in electricity production



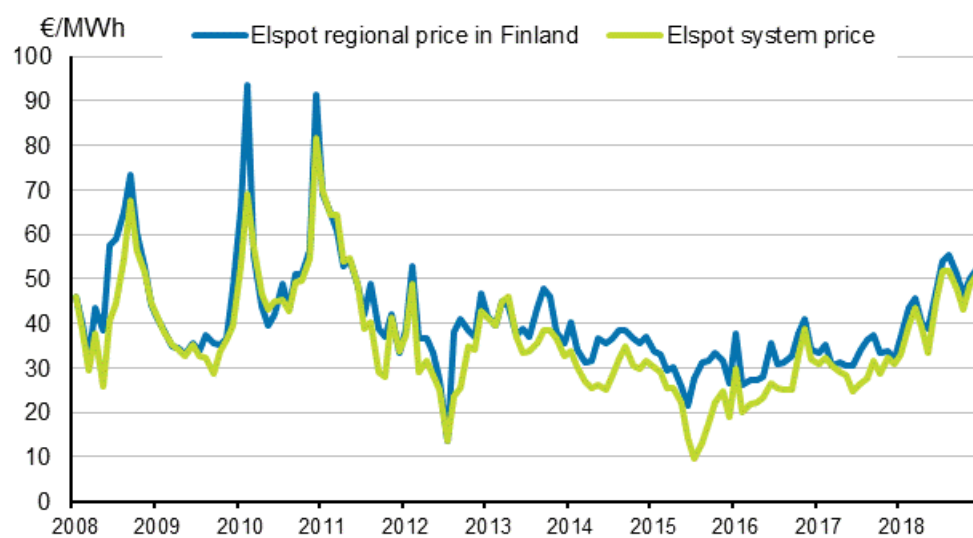
The fuels of electricity production are exclusive of tax. Sources: Finnish Customs, Energy Authority, The Bioenergy Association of Finland, Statistics Finland, FOEX Indexes Ltd

Appendix figure 5. Price of electricity by type of consumer



The prices include electrical energy, transmission fee and taxes. Source: Energy Authority, Statistics Finland

Appendix figure 6. Average monthly spotprices at the Nord Pool Spot power exchange



Source: Nord Pool Spot

Inquiries

Aleksi Sandberg 029 551 3326
Director in charge:
Ville Vertanen

energia@stat.fi
www.stat.fi
Source: Statistics Finland, Energy prices