

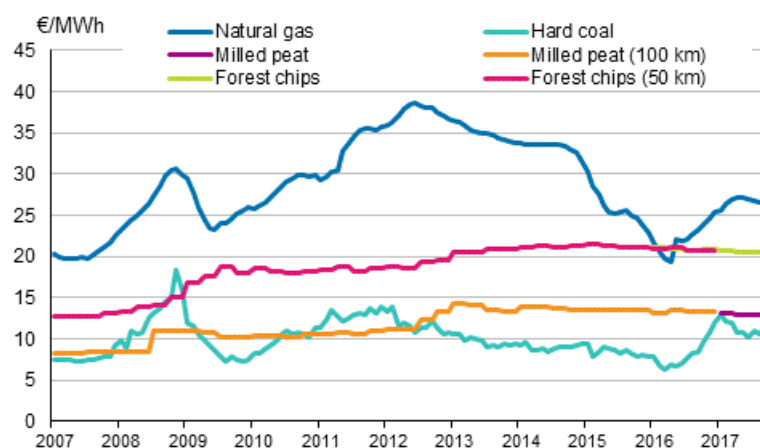
# Energy prices

2017, 3rd quarter

## Energy prices grew in the third quarter

In the third quarter, prices of energy went up for nearly all energy products. According to Statistics Finland's data, only the prices of energy peat and forest chippings decreased slightly year-on-year. The increase in the prices was caused by higher prices of imported fuels and tax increases at the start of the year.

### Fuel Prices in Electricity Production



The rise in the world market price of oil in the third quarter was also reflected in the prices of oil products imported to Finland. This was also visible in the consumer prices of liquid fuels that increased clearly from September last year to September 2017. The price of motor gasoline rose by five per cent, diesel oil by six per cent and fuel oil by 13 per cent.

The price of coal rose clearly at the end of 2016, but this year, the rise has stopped and the price has declined slightly. The tax-free price of coal used in electricity production was 34 per cent higher in September this year than one year ago in September. The price of natural gas made a slight downturn in the third quarter after rising for a little over a year. However, the tax-free price of natural gas used in electricity production was 14 per cent higher in September than one year previously.

The taxable prices of coal and natural gas used in heat production were raised by an increase in excise duties at the beginning of the year and by higher tax-free prices. Changes in tax-free prices influence taxable prices increasingly less due to the growing share of taxes in the prices of these fuels in the past few years. Compared to the situation one year earlier, the taxable price of hard coal used in heat production was 14 per cent higher in September and the corresponding price of natural gas 11 per cent higher. In the third quarter, the taxable price of milled peat declined by a few per cent and the price of forest chippings fell by one per cent from the respective period of last year.

Customer prices for district heat were one per cent higher in July than in July 2016 apart from detached houses where prices remained almost unchanged. The consumer price of wood pellets had also risen by one per cent from August 2016 to August 2017.

In September, the average for the system price of the Nordic electricity exchange derived from the sell and buy bids on the exchange was 25 per cent and the average for the Finnish area price was 15 per cent higher than one year previously. The prices of electricity for household customers increased by an average of seven per cent from September last year to September 2017. As clear a trend was not visible in the development of electricity prices for enterprise and corporate customers.

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# Appendix tables

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

Date	Fuels <sup>1)</sup>								Electricity				
	Motor-gasoline, unleaded <sup>2)</sup>	Diesel fuel <sup>3)</sup>	Light fuel oil <sup>12)</sup>	Liquefied petroleum gas	Heavy fuel oil	Hard coal <sup>11)</sup>	Natural gas	Peat	Consumption		Production		
									Electricity, I <sup>4)</sup>	Electricity, II <sup>5)</sup>	Nuclear power	Hydro power	Imports
c/l			c/kg		€/t	€/MWh		c/kWh					
<b>Excise taxes <sup>10)</sup></b>													
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	26,96	189,84	18,53	1,90	2,24	0,69	-	-	-
<b>Energy content tax <sup>8)</sup></b>													
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	-	-	-	-	-	-
<b>Carbon dioxide tax <sup>9)</sup></b>													
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	-	-	-	-	-	-
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	-	-	-	-	-	-

Date	Fuels <sup>1)</sup>								Electricity				
	Consumption			Production									
	Motor-gasoline, unleaded <sup>2)</sup>	Diesel fuel <sup>3)</sup>	Light fuel oil <sup>12)</sup>	Liquefied petroleum gas	Heavy fuel oil	Hard coal <sup>11)</sup>	Natural gas	Peat	Electricity, I <sup>4)</sup>	Electricity, II <sup>5)</sup>	Nuclear power	Hydro power	Imports
c/l			c/kg		€/t	€/MWh		c/kWh					
1.1.2017	17,38	19,90	15,47	17,53	18,78	139,91	11,48	-	-	-	-	-	-
<b>Energy tax <sup>7)</sup></b>													
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	-	-	-
<b>Strategic stockpile fees</b>													
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	-	-	-
<b>Oil pollution fees <sup>6)</sup></b>													
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 September 2017

Energy source <sup>3)</sup>	<sup>1)</sup> Price €/MWh	Annual change-%
<sup>2)</sup> Hard coal (VAT 0%)	38.33	13.8
Natural gas (VAT 0%)	45.10	10.9
Forest chips (VAT 0%)	20.45	-1.4
Milled peat (VAT 0%)	14.94	-1.7

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 September 2017

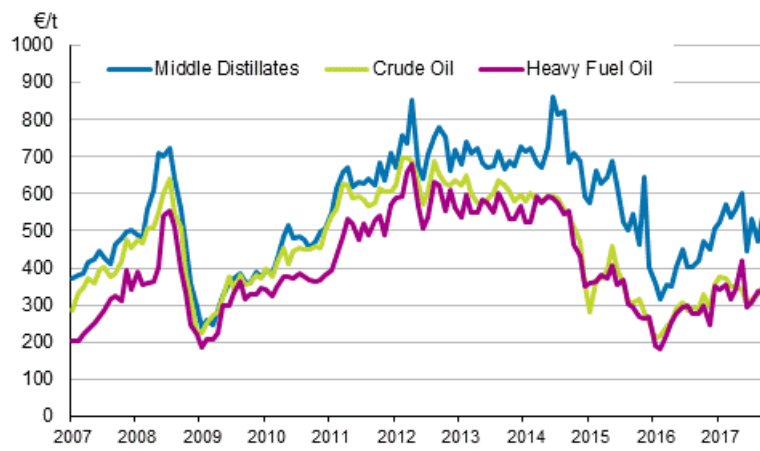
Energy source <sup>2)</sup>	<sup>1)</sup> Price €/MWh	Annual change-%
Light fuel (VAT 24%)	87.6	13.1
Household electricity, K2 (VAT 24%)	123.4	5.7
Wood pellet (VAT 24%)	57	1.1
District heat, terraced house / low-rise block of flats (VAT 24%)	78.26	1.2

1) The price of wood pellet is from August 2017 and district heat from July 2017

2) Sources: Finnish Energy Industries, Energy Authority, Petroleum and Biofuels Association of Finland, Statistics Finland

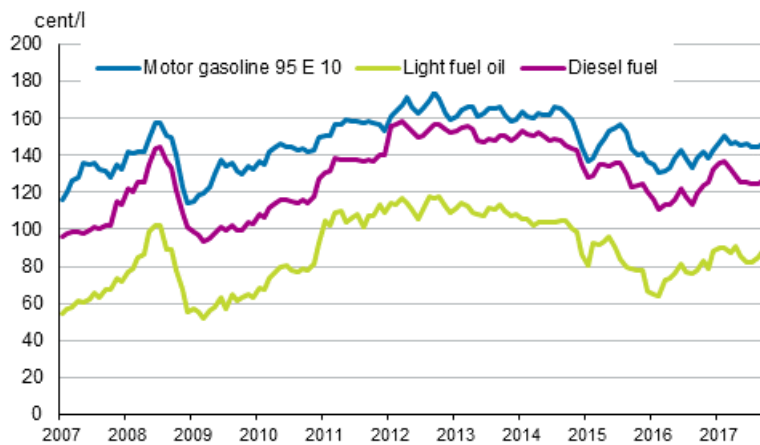
# Appendix figures

**Appendix figure 1. Import prices of oil**



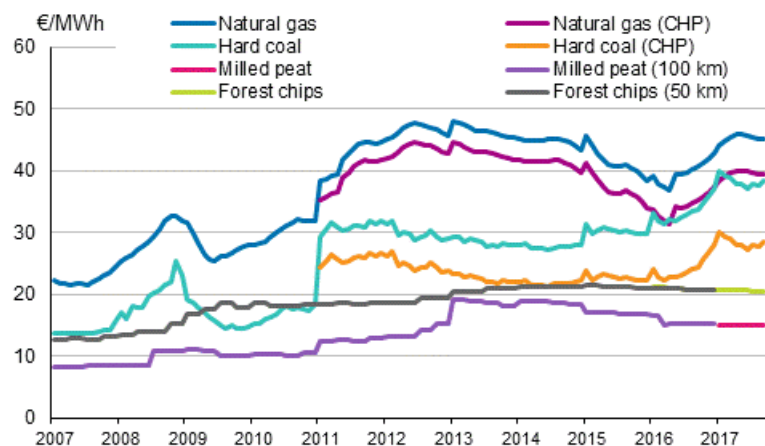
Source: Finnish Customs

**Appendix figure 2. Consumer prices of principal oil products**



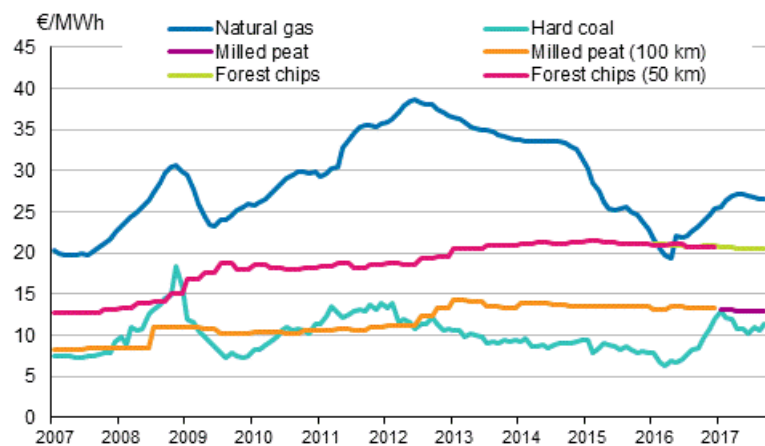
Source: Finnish Petroleum and Biofuels Association

### Appendix figure 3. Fuel prices in heat production



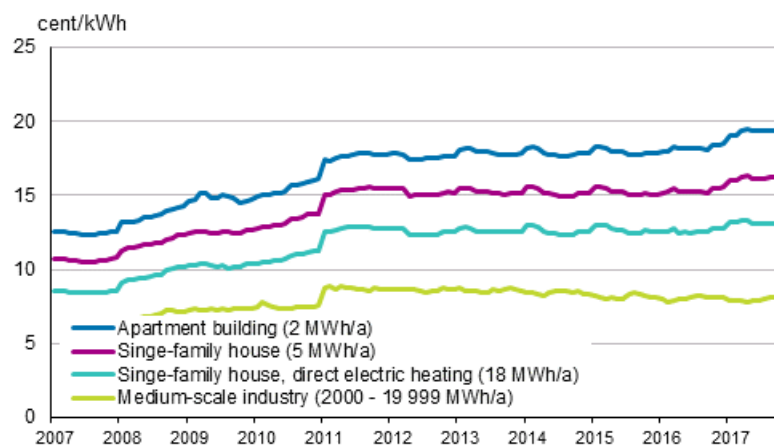
The prices include excise duties (VAT 0%). The carbon dioxide tax on natural gas and hard coal used in combined heat and power production was halved from the beginning of 2011. Sources: Finnish Customs, Energy Authority, The Bioenergy Association of Finland, Finnish Petroleum and Biofuels Association,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

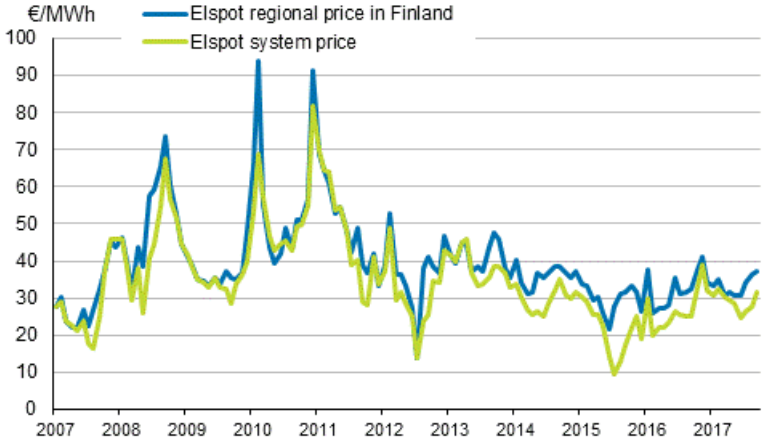
### Appendix figure 5. Price of electricity by type of consumer



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

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Source: Statistics Finland, Energy prices