

Data, tables, statistics and maps

# ENERGY STATISTICS 2014



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Please feel free to visit the Danish Energy Agency's website for statistics and data "Facts and figures". This website includes energy statistics that are far more detailed than the statistics published here. Go to "Facts and figures" to see (and/or download) the complete energy statistics, including tables and time-lines for energy consumption, emissions and assumptions for the period 1972-2014. Descriptions of methods and revisions are also available here.

#### **Natural gas**

The statement of natural gas generally includes bio natural gas at 0.35%. However, this excludes production, imports, exports, consumption on platforms and the emissions inventory.

The production of natural gas includes bio natural gas and biogas at 0.2%

The statement of gas works gas also includes biogas at

This only applies for 2014

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### **Energy Statistics 2014**

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This publication may be quoted with source reference.

#### Access to the statistics or parts of the statistics before publication

The organisations below have access to the statistics under a special agreement.

Statistics Denmark

DCE - Danish Centre for Environment and Energy

Danish Energy Agency, relevant employees in the scenarios team

# More than half of Danish electricity supply comes from renewables. Adjusted gross energy consumption fell in 2014

#### **Electricity supply now primarily from RE**

In 2014, electricity from renewables accounted for 53.4% of Danish domestic electricity supply. Of this figure, wind power accounted for 38.8%. Biomass accounted for 11.4% and solar energy, hydro and biogas accounted for the remaining 3.2%.

### Energy production and degree of self-sufficiency fell

The Danish production of crude oil, natural gas and renewable energy etc. fell to 680 PJ in 2014; a drop of 3.6%. Production of crude oil and natural gas fell by 6.4% and 3.1% respectively.

The degree of self-sufficiency in energy for Denmark fell again in 2014 to 90%, whereas it was 92% the year before. This means that energy production in 2014 was 10% lower than energy consumption.

### Observed energy consumption down by 5.3%

Observed energy consumption fell by 5.3%, from 759 PJ in 2013 to 719 PJ in 2014. The drop in consumption should be considered in light of the fact that 2014 was a warmer year, and that Denmark had higher net imports of electricity in 2014 than in 2013. This means that fuel consumption for electricity generation decreased by 11.6%. The decrease includes lower consumption of coal, oil and natural gas of a total of 25.0%. Renewable energy etc. rose by 9.5%.

### Adjusted gross energy consumption fell 1.1%

Besides observed energy consumption, the Danish Energy Agency calculates adjusted gross energy consumption, which is adjusted for fuel linked to foreign trade in electricity and climatic variations in relation to a normal weather year. The purpose of the adjusted calculations is to illustrate the trends underlying the development. Adjusted gross energy consumption was 755 PJ in 2014, which is 1.1% below the 2013 level. Compared to the increase in economic activity, measured as a rise of 1.1% in gross domestic product (GDP, 2010 prices, chained values), this is an improvement in energy efficiency in 2014 of 2.1%. Compared with 1990, adjusted gross energy consumption has fallen by 7.8%. During the same period, GDP has grown by 41%. In 2014, each unit of GDP therefore accounted for 34.6% less energy than in 1990.

#### Increase in consumption of renewable energy

Consumption of renewable energy increased from 187 PJ in 2013 to 192 PJ in 2014, which corresponds to an increase of 2.8%. This development is due to increases in the consumption of wood pellets and wind power of 5.9% and 17.6%, respectively. However this is counterbalanced by a drop in the consumption of firewood of 16%. Calculated according to the EU's method of calculation, renewable energy accounted for about 28.5% of energy consumption in 2014 as opposed to 27.2% in 2013.

#### Decrease in CO<sub>2</sub> emissions

Observed  $CO_2$  emissions from energy consumption decreased by 9.3% in 2014, ending at 37.7 million tonnes. Adjusted for fuel consumption linked to foreign trade in electricity and climatic variations,  $CO_2$  emissions fell by 2.7%. Since 1990, Danish adjusted  $CO_2$  emissions have gone down by 32.6%.

#### Fall in greenhouse gas emissions for 2014

A preliminary statement of total observed emissions of greenhouse gases in Denmark shows a drop of 27.4% from 1990 to 2014. A drop in observed emissions of 7.0% from 2013 to 2014 is primarily attributable to higher net imports of electricity in 2014.

#### Energy consumption by area of consumption

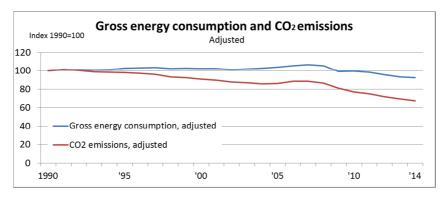
Gross energy consumption for *transport* was 2.5% higher in 2014 than the year before. Energy consumption for road transport rose by 2.0%, while consumption by international aviation increased by 8.4%.

The total climate-adjusted energy consumption of the agriculture and industry sector was 1.8% lower in 2014 than the year before. Energy consumption by manufacturing industries fell by 1.1%.

In *commercial and public services* and *households*, climate-adjusted energy consumption was respectively 2.0% and 0.1% lower in 2014 than in 2013.

#### **Exports of energy technology**

Exports of energy technology and equipment were DKK 74.4 billion in 2014 as opposed to DKK 67.2 billion in 2013. Exports of energy technology and equipment were thus 12% of total Danish goods exports. The corresponding figure for 2013 was about 11%.



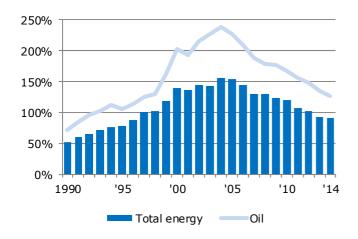
#### **Energy balance 2014**

	Total	Crude oil and refinery feedstocks	Oil products	Natural gas	Coal and coke	Waste, non- renewable	Renewable energy	Electricity	District heating	Gas works gas
Direct energy content [TJ]										
Total energy consumption	719 501									
Primary energy production	679 680	349 635	-	173 650	-	17 424	138 972	-	-	-
Recycling	11	-	11	-	-	-	-	-	-	-
Imports	736 069	170 712	328 911	23 422	112 577	-	54 577	45 728	141	-
Exports	-646 731	-241 061	-288 984	-78 439	-1 294	-	-1 503	-35 449	-	-
Border trade		-	-7 560	-	-	-	-	-	-	-
International marine bunkers	-31 131	-	-31 131	-	-	-	-	-	-	-
Stock changes		5 741	-15 256	- 842	-5 142	-	224	-	-	-
Statistical differences, input from blending		1 962	240	1 456	1 347	-	- 568	-	0	-
Energy sector		-286 990	273 984	-23 023	-	-	-	-3 400	- 578	-
Extraction and gasification	-23 023	-	-	-23 023	-	-	-	-	-	-
Petroleum products		-	288 251	-	-	-	-	-	-	-
Used in refineries		-286 990	-14 267	-	-	-	-	-1 064	- 578	-
Used in distribution	-2 337	-	-	-	-	-	-	-2 337	-	-
Transformation		-	-5 188	-36 163	-102 187	-16 415	-132 991	110 523	120 318	677
Large-scale units		-	-1 135	-9 515	-101 757	-	-32 500	52 198	48 900	-
Wind turbines and hydropower plants		-	-	-	-	-	-47 137	47 137	-	-
Small-scale units		-	- 53	-7 979	- 334	-3 691	-13 886	7 140	15 686	-
District heating units		-	-1 507	-14 359	- 79	- 195	-17 645	- 407	32 214	-
Autoproducers		-	-2 489	-3 632	- 17	-12 530	-21 824	9 383	24 710	-
Gas works		-	- 5	- 678	-	-	-	-	-	677
Own use	-6 122	-	-	-	-	-	-	-4 929	-1 192	-
Distribution losses etc.	-31 390	-	-	- 119	-	-	-	-7 153	-24 092	- 27
Final energy consumption	-586 678	-	-255 027	-59 941	-5 302	-1 009	-58 711	-110 249	-95 789	- 650
Non-energy use	-10 544	-	-10 544	-	-	-	-	-	-	-
Transport	-207 894	-	-197 571	-	-	-	-8 935	-1 387	-	-
Agriculture and industry	-120 836	-	-34 158	-29 889	-5 301	- 672	-9 385	-36 168	-5 054	- 209
Commercial and public services	-76 200	-	-2 346	-6 607	-	- 336	-1 871	-36 319	-28 685	- 35
Households	-171 204	-	-10 408	-23 445	- 0	-	-38 520	-36 374	-62 051	- 406

Note: The energy balance provides an overview of supply, transformation and consumption of energy.

A more detailed statement of input (black figures) and output (red figures) of energy products is listed in the table Energy supply and consumption 2014 on pages 18-19.

### Degree of self-sufficiency



The degree of self-sufficiency is calculated as primary energy production in relation to climate-adjusted gross energy consumption. Self-sufficiency in oil is calculated as crude oil production in relation to the share of gross energy consumption constituted by oil.

In 1997, Denmark produced more energy than it consumed for the first time ever. The degree of self-sufficiency was 52% in 1990 and peaked in 2004 at 156%. Denmark was a net importer of energy in 2013 for the first time since 1996. In 2014, the degree of self-sufficiency in energy was 90% as opposed to 92% the year before.

Denmark has been more than self-sufficient in oil since 1993, resulting in annual net exports. In 2014, the degree of self-sufficiency in oil was 127% as opposed to 134% the year before. The degree of self-sufficiency in oil peaked in 2004 and has been falling ever since.

### **Production of primary energy**

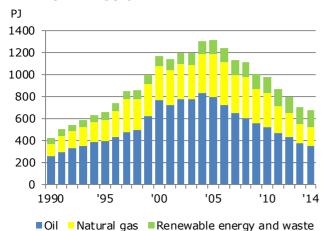
									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total production	40 228	424 361	1 164 525	1 311 683	978 612	792 012	704 745	679 680	60.2%
Crude oil	12 724	255 959	764 526	796 224	522 733	429 140	373 365	349 635	36.6%
Natural gas	17	115 967	310 307	392 868	307 425	216 000	179 275	173 650	49.7%
Renewable energy	22 699	45 461	76 016	105 585	131 306	130 067	135 246	138 972	206%
Waste, non-renewable	4 787	6 975	13 676	17 006	17 148	16 805	16 860	17 424	150%

### **Production and consumption of renewable energy**

Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	Change '90-'14
Production of renewable energy	22 699	45 461	76 016	105 585	131 306	130 067	135 246	138 972	206%
Solar	50	100	335	419	657	1 254	2 890	3 371	3277%
Wind	38	2 197	15 268	23 810	28 114	36 972	40 044	47 083	2043%
Hydro	123	101	109	81	74	63	48	54	-46.1%
Geothermal	-	48	58	172	212	288	229	166	245%
Biomass	22 023	39 996	54 039	73 542	92 268	80 611	80 527	75 911	89.9%
- Straw	4 840	12 481	12 220	18 485	23 323	18 301	20 296	18 409	47.5%
- Wood chips	-	1 724	2 744	6 082	11 352	12 425	11 149	10 842	529%
- Firewood	7 621	8 757	12 432	17 667	23 779	19 660	18 612	15 634	78.5%
- Wood pellets	-	1 575	2 984	3 262	2 407	1 749	1 843	1 951	23.9%
- Wood waste	3 710	6 191	6 895	6 500	8 500	6 996	7 191	7 053	13.9%
- Waste, renewable	5 851	8 524	16 715	20 786	20 959	20 539	20 606	21 296	150%
- Biodiesel *)			••						•
- Biooil	-	744	49	761	1 949	940	829	725	-2.6%
Biogas	184	752	2 912	3 830	4 337	4 399	4 604	5 143	584%
Heat pumps	282	2 267	3 296	3 731	5 643	6 481	6 904	7 245	220%
Imports of renewable energy	-	-	2 466	18 918	39 483	51 429	52 305	54 577	•
Firewood	-	-	-	1 963	2 939	3 200	3 308	2 778	•
Wood chips	-	-	305	1 521	4 865	6 401	5 743	5 585	•
Wood pellets	-	-	2 161	12 802	27 675	31 743	33 455	35 421	•
Bioethanol	-	-	-	-	1 118	1 911	1 855	1 998	•
Biodiesel	-	-	-	2 632	2 886	8 570	8 439	8 794	•
Exports of renewable energy	-	-	-	2 632	2 846	1 696	1 423	1 503	•
Biodiesel	-	-	-	2 632	2 846	1 696	1 423	1 503	•
Stock changes, stat. diffs. etc.	-	- 3	23	6	1	7	- 58	- 295	•
Consumption of renewable energy	22 699	45 458	78 505	121 877	167 944	180 203	186 565	191 752	322%

<sup>\*)</sup> Biodiesel production has been included under imports of biodiesel.

#### Primary energy production



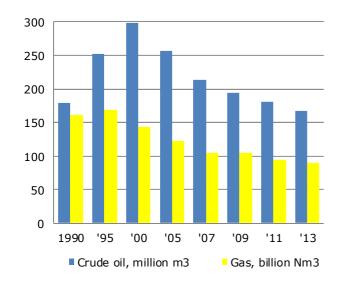
Primary energy refers to crude oil, natural gas, renewable energy (including renewable waste) and non-renewable waste.

In 2014, primary energy production was 680 PJ, as opposed to 705 PJ in 2013. This corresponds to a drop of 3.6%. Primary energy production peaked at 1312 PJ in 2005.

Production of crude oil and natural gas increased steadily up to 2004 and 2005, respectively, after which it fell.

Production of crude oil and natural gas fell by 6.4% and 3.1% respectively in 2014, while production of renewable energy etc. increased by 2.8%.

### Oil and gas reserves / resources



Up to the end of 2009, crude oil and natural gas reserves were calculated as the volumes that were financially feasible to recover from known oil fields and oil discoveries, using known technologies. The reserves are regularly reassessed for new discoveries and changes in assumptions for calculations.

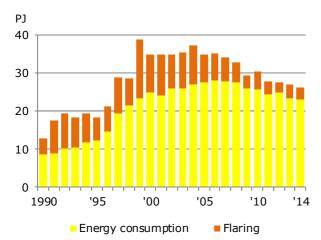
At the end of 2009, the Danish Energy Agency changed the classification system for oil and gas reserves, introducing the category *contingent resources*. For the period 2009-2011 and 2013, the statement includes the sum of reserves and contingent resources so that comparison with earlier statements is possible.

At the end of 2013, the sum of reserves and contingent resources totaled 167 million  $m^3$  oil and 90 billion  $Nm^3$  gas.

Danish oil and gas reserves have been calculated every two years since and including 2011.

Source: Oil and Gas Production in Denmark 2013.

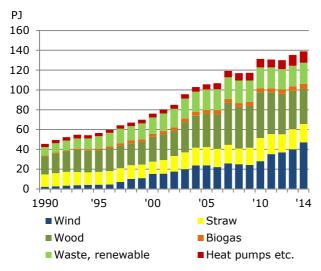
## Natural gas consumption and flaring on platforms in the North Sea



Extraction of crude oil and natural gas requires natural gas consumption for production as well as for transport and off-loading ashore. In 2014 consumption was 22.9 PJ, corresponding to 19.2% of total Danish natural gas consumption. In 2013 consumption on platforms was 23.3 PJ.

Furthermore, flaring (burning) is carried out in the production of natural gas in the North Sea fields. Flaring is not included in energy consumption, but is included in Denmark's international statement of greenhouse gases, and is covered by the EU Emission Trading System (EU ETS). In 2014, flaring of natural gas was calculated at 3.4 PJ compared with 3.8 PJ in 2013.

### Production of renewable energy by energy product



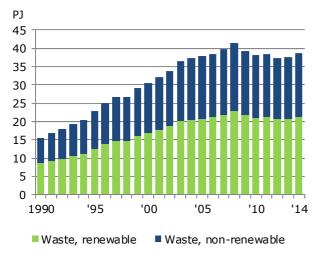
Renewable energy includes wind power, wood, straw, biogas, renewable waste and others (hydropower, geothermal energy, solar energy and heat pumps).

Production of renewable energy was 139 PJ in 2014, which corresponds to a rise of 2.8% compared with 2013. Production of renewable energy grew by 206% during the period 1990 to 2014

In 2014 wind power production was 47.1 PJ, which is an increase of 17.6% compared with 2013.

Production from straw, wood and renewable waste in 2014 was 18.4 PJ, 35.5 PJ and 21.3 PJ, respectively. Compared with 2013, the total production from the three fuels has fallen by 5.7%.

### **Consumption of waste**

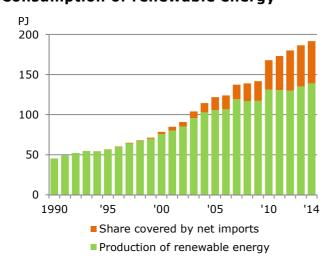


Consumption of waste for the production of electricity and district heating has increased significantly over time. Total consumption of waste increased by 3.3% in 2014 compared with 2013. Compared with 1990, waste consumption for energy purposes increased by 150% in 2014.

In statistics for energy and  $CO_2$  emissions, waste is divided into two components: Renewable waste and non-renewable waste. According to international conventions, renewable waste is included in renewable energy.

These energy statistics assume that 55.0% of the waste consumed is renewable waste. This means that waste accounts for a considerable proportion of the total consumption of renewable energy.

#### Consumption of renewable energy

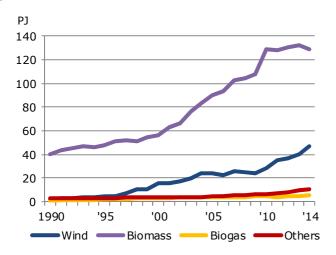


Production of renewable energy has increased dramatically since 1990. In addition, net imports have increased. Net imports of renewable energy (including stock changes etc.) were 52.8 PJ in 2014.

In 2014 consumption of renewable energy was 191.8 PJ, which is 2.8% more than the year before. Observed consumption of renewable energy was 45.5 PJ in 1990.

The increased use of renewable energy makes a significant contribution to reducing Danish CO2 emissions.

# Renewable energy - consumption by energy product

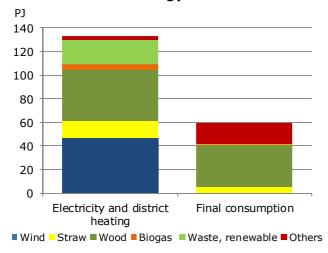


Consumption of renewable energy increased from 186.6 PJ in 2013 to 191.8 PJ in 2014.

Consumption from biomass fell from 131.9 PJ in 2013 to 129.0 PJ in 2014, while wind power rose from 40.0 PJ to 47.1 PJ.

The increasing consumption of biomass since 2000 entails higher consumption of wood chips, wood pellets and firewood. In the period 2000 to 2014 the increase was 439%, 626%, and 48.1%, respectively.

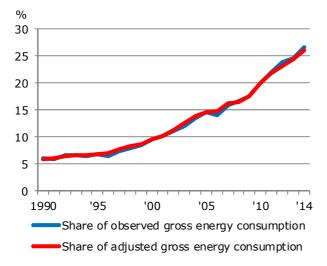
#### Use of renewable energy in 2014



Total consumption of renewable energy in 2014 (production plus net imports) was 192 PJ, of which 133 PJ was used in the production of electricity and district heating. Wind power, wood pellets and renewable waste were predominant in the production of electricity and district heating, accounting for 47.1 PJ, 23.6 PJ and 20.1 PJ, respectively. Consumption of wood otherwise, straw and biogas accounted for 20.4 PJ, 13.6 PJ and 4.5 PJ, respectively.

A total of 59.1 PJ of renewable energy was included in final energy consumption, i.e. for process consumption and consumption for heating in the agriculture and industry sector, in the commercial and public services sector, as well as for heating in households and for transport. In final energy consumption, wood, particularly firewood, is most prominent.

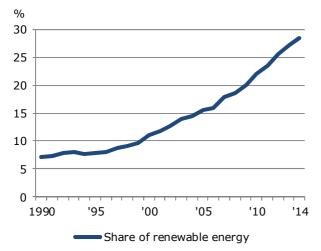
### Renewable energy - share of total energy consumption



Observed energy consumption shows the registered amount of energy consumed in a calendar year. In 2014 renewable energy covered 26.7% of total observed energy consumption, as opposed to 24.6% the year before. In 1990 this figure was 6.0%.

Adjusted gross energy consumption is found by adjusting observed energy consumption for the fuel consumption linked to foreign trade in electricity, and by adjusting for fluctuations in climate with respect to a normal weather year. In 2014 renewable energy's share of adjusted gross energy consumption was 26.0%, as opposed to 24.4% the previous year. In 1990 this figure was 5.8%.

### Share of renewable energy according to the EU method of calculation



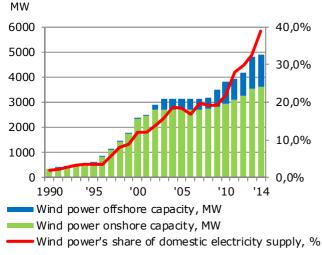
The EU Directive on renewable energy prescribes a different method for calculating the share of renewable energy than those used above.

The EU's calculation is based on final energy consumption expressed as energy consumption by end-users, excl. border trade and consumption for non-energy purposes, incl. distribution losses and own use in the production of electricity and district heating. In the EU method, renewable energy is defined as end-consumption of renewables as well as consumption of renewables for the production of electricity and district heating.

According to the EU method of calculation, the share of renewable energy was 28.5% in 2014 as opposed to 27.2% the year before, i.e. –1.8 percentage points higher than if the share of renewable energy is calculated as the share of the total energy consumption (p. 8).

Sources: 2004-2013 Eurostat. 1990-2003 and 2014 Danish Energy Agency calculations.

### Wind power capacity and wind power's share of domestic electricity supply

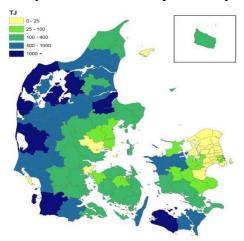


In 2014, wind power production accounted for 38.8% of domestic electricity supply, compared with 32.5% in 2013 and only 1.9% in 1990.

Wind power capacity was 4888 MW in 2014, as opposed to 4820 MW the year before. In 2014 onshore and offshore wind turbine capacities were 3616 MW and 1271 MW, respectively. In 1990 there were only onshore wind turbines and they accounted for a wind power capacity of 326 MW.

Trends in wind power capacity and production do not always correspond, as annual wind power generation is highly dependent on wind conditions, which can be quite variable in Denmark. Furthermore, when capacity goes up, this is not reflected fully in the production until in the following year, as production from new capacity is limited to the part of the year in which the installations are in operation.

#### Wind power onshore by municipality



Total wind-power production was 47.1 PJ in 2014. Of this, onshore installations accounted for 60.5% and offshore installations accounted for 39.5%.

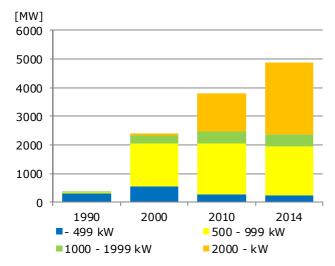
Wind power generation from onshore installations varies across Denmark. Municipalities with west-facing coastlines have many wind turbines, and the favourable wind conditions in these areas contribute to high production from these installations.

In 2014 the turbines in the eight municipalities with the highest wind power production thus together accounted for a production of 11.8 PJ, or 41.4% of total wind power production from onshore installations.

#### Wind power - number of turbines and capacity by size

	1980 Onshore	1990 Onshore	Onshore	2000 Offshore	Total	Onshore	2013 Offshore	Total	Onshore	2014 Offshore	Total
Total no. of turbines	68	2 664	6 193	41	6 234	4 719	516	5 235	4 768	516	5 284
- 499 kW	68	2 654	3 651	11	3 662	1 393	11	1 404	1 456	11	1 467
500 - 999 kW	-	8	2 283	10	2 293	2 552	10	2 562	2 503	10	2 513
1 000 - 1 999 kW	-	2	251	-	251	359	-	359	359	-	359
2 000 - kW	-	-	8	20	28	415	495	910	450	495	945
Total wind power capacity [MW]	3	326	2 340	50	2 390	3 549	1 271	4 820	3 616	1 271	4 888
- 499 kW	3	317	533	5	538	232	5	237	227	5	232
500 - 999 kW	-	6	1 512	5	1 517	1 735	5	1 740	1 705	5	1 710
1 000 - 1 999 kW	-	3	279	-	279	438	-	438	438	-	438
2 000 - kW	-	-	16	40	56	1 144	1 261	2 405	1 246	1261	2 507

#### Wind power capacity by size of turbine

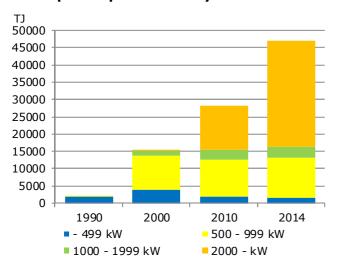


The total number of wind turbines increased by 49 from 2013 to 2014, and the total wind power capacity grew by 68 MW.

For some years now, the trend has been toward fewer but larger turbines. There were 950 fewer turbines in 2014 than in 2000. This is due to a fall of 2195 in the number of turbines with capacities of 499kW and below, as well as an increase of 1245 in the number of larger turbines.

Similarly, turbines with a capacity below 500kW accounted for only 4.7% of the total capacity in 2014, whereas this figure was 22.5% in 2000.

### Wind power production by size of turbine



The development toward larger turbines is even more evident in terms of wind power production.

Where turbines larger than 2 MW accounted for 51.3% of wind power capacity, in 2014 these turbines produced 65.1% of the total energy from wind turbines.

Similarly, in 2014 wind turbines with a capacity below 500kW accounted for only 3.2% of the total production.

The most important reason for this is that by far the majority of the turbines established offshore have capacities above 2 MW, and that offshore wind turbines have a higher production in terms of their capacity than onshore wind turbines.

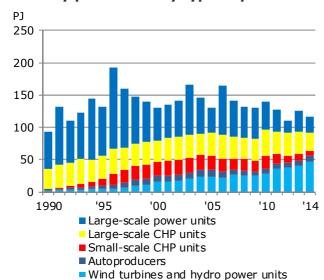
Change

#### Electricity production by type of producer

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90 -'14
Total electricity production(gross)	97 508	93 518	129 776	130 469	139 906	110 527	125 133	115 858	23.9%
Large-scale power units	44 155	7 494	8 871	49	336	221	189	82	-98.9%
Large-scale CHP units	52 056	80 639	73 809	74 932	83 940	53 978	65 598	52 115	-35.4%
- of which electricity production	36 026	50 157	41 584	38 402	43 221	18 314	31 023	24 504	-51.1%
Small-scale CHP units	18	988	21 547	21 254	19 216	11 923	10 480	7 140	623%
Autoproducers	1 118	2 099	10 168	10 336	8 203	6 997	6 911	7 239	245%
- Electricity production 1)	-	-	9	7	6	9	8	8	•
- CHP 1)	1 118	2 099	10 158	10 328	8 197	6 987	6 903	7 231	245%
Wind turbines 1)	38	2 197	15 268	23 810	28 114	36 972	40 044	47 083	2043%
Hydropower units 1)	123	101	109	81	74	63	48	54	-46.1%
Photovoltaics 1)	-	-	4	8	22	374	1 863	2 144	•
Own use in production	-5 731	-6 118	-5 776	-6 599	-7 159	-5 403	-5 774	-4 929	-19.4%
Large-scale power units	- 2 787	- 590	- 312	- 2	- 17	- 16	- 13	- 5	- 99.1%
Large-scale CHP units	- 2 944	- 5 509	- 4 993	- 6 033	- 6 602	- 4 913	- 5 275	- 4 505	-18.2%
Small-scale CHP units	-	- 19	- 472	- 564	- 541	- 474	- 487	- 419	2106%
Total electricity production (net)	91 777	87 400	123 999	123 870	132 747	105 124	119 358	110 929	26.9%
Net imports of electricity	- 4 453	25 373	2 394	4 932	- 4 086	18 771	3 892	10 279	-59.5%
Domestic electricity supply	87 323	112 773	126 393	128 802	128 661	123 895	123 250	121 208	7.5%
Transformation consumption	-	-	- 1	-	- 110	- 652	- 522	- 407	•
Distribution losses etc. <sup>2)</sup>	- 7 497	- 8 886	- 7 650	- 5 573	- 9 482	- 7 779	- 6 989	- 7 153	-19.5%
Domestic electricity consumption	79 827	103 887	118 742	123 228	119 068	115 464	115 740	113 649	9.4%
Consumption in the energy sector	- 1 214	- 1 748	- 1 893	- 2 761	- 3 658	- 3 211	- 3 377	- 3 400	94.5%
Final electricity consumption	78 613	102 139	116 849	120 467	115 411	112 253	112 363	110 249	7.9%

 $<sup>^{1)}</sup>$  Gross and net production are by definition identical.  $^{2)}$  Determined as the difference between supply and consumption.

#### **Electricity production by type of producer**



In 2014 electricity production was 115.9 PJ, which is a decrease of 7.4% compared with 2013. As domestic electricity supply was more or less unchanged, the reason for this decrease is primarily that Denmark had considerably higher net imports of electricity in 2014 opposed to 2013.

Electricity is generated at large-scale power units, at small-scale CHP units, by wind turbines and by autoproducers (i.e. small producers, whose main product is not energy).

Large-scale power units generate electricity, partly as separate electricity production, and partly as combined electricity and heat production. Of the total electricity production of 115.9 PJ, 52.2 PJ (45%) were generated from large-scale power units - 24.5 PJ as separate production. Separate electricity production varies greatly from year to year due to fluctuations in foreign trade in electricity. Electricity production from small-scale units and autoproducers was 7.1 PJ and 7.2 PJ, respectively. Wind turbines generated 47.0 PJ of electricity, an increase of 17.6% relative to 2013.

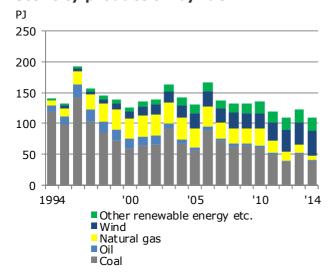
### **Electricity production by fuel**

								Change
Direct energy content [TJ]	1994	2000	2005	2010	2012	2013	2014	'94 -'14
Total electricity production (gross)	144 707	129 776	130 469	139 906	110 527	125 133	115 858	-19.9%
Oil	9 547	15 964	4 933	2 783	1 451	1 261	1 140	-88.1%
- of which orimulsion	-	13 467	-	-	-	-	-	•
Natural gas	8 206	31 589	31 606	28 464	15 092	12 304	7 545	-8.1%
Coal	119 844	60 022	55 666	61 222	37 941	51 451	39 828	-66.8%
Surplus heat	-	139	-	-	-	-	-	•
Waste, non-renewable	836	2 002	2 938	2 689	2 628	2 574	2 607	212%
Renewable energy	6 275	20 060	35 326	44 749	53 414	57 543	64 739	932%
Solar	-	4	8	22	374	1 863	2 144	•
Wind	4 093	15 268	23 810	28 114	36 972	40 044	47 083	1050%
Hydro	117	109	81	74	63	48	54	-53.7%
Biomass	1 743	3 928	10 409	15 252	14 646	14 204	13 837	694%
- Straw	293	654	3 088	3 968	2 269	2 620	2 293	684%
- Wood	429	828	3 730	7 998	9 166	8 438	8 358	1846%
- Waste, renewable	1 021	2 447	3 591	3 286	3 212	3 146	3 186	212%
Biogas	321	751	1 017	1 285	1 359	1 384	1 621	405%

#### Electricity from renewable energy: Share of domestic electricity supply

								Change
[%]	1994	2000	2005	2010	2012	2013	2014	'94 -'14
Renewable energy	5.3	15.9	27.4	34.8	43.1	46.7	53.4	913%
Solar	0.0	0.0	0.0	0.0	0.3	1.5	1.8	•
Wind	3.4	12.1	18.5	21.9	29.8	32.5	38.8	1029%
Hydro	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-54.5%
Biomass	1.5	3.1	8.1	11.9	11.8	11.5	11.4	679%
- Straw	0.2	0.5	2.4	3.1	1.8	2.1	1.9	669%
- Wood	0.4	0.7	2.9	6.2	7.4	6.8	6.9	1810%
- Waste, renewable	0.9	1.9	2.8	2.6	2.6	2.6	2.6	206%
Biogas	0.3	0.6	0.8	1.0	1.1	1.1	1.3	396%

### **Electricity production by fuel**



In 2014, 39.8 PJ (34.4%) of total electricity production was generated by coal. Natural gas accounted for 7.5 PJ (6.5%) of electricity production. Oil and non-renewable waste accounted for 1.1 PJ (1.0%) and 2.6 PJ (2.3%) of the electricity production, respectively.

Electricity production based on renewables was 64.7 PJ in 2014. This is 12.5% more than production in 2013.

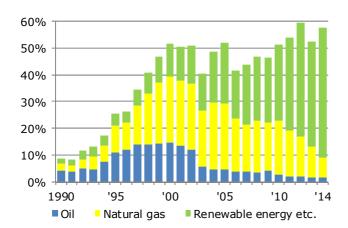
Electricity production based on biomass contributed 13.8 PJ, which is 2.6% less than in 2013. With 47.1 PJ, wind turbines accounted for the greatest contribution to electricity production based on renewable energy. This is the first time the percentage of energy coming from wind power has exceeded production based on coal.

### Fuel consumption for electricity production

		_	
U	па	п	Je.

Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90 -'14
Total fuel consumption	261 835	227 001	276 974	265 330	285 982	210 195	238 517	210 824	-7.1%
Oil	47 533	9 215	40 356	11 867	8 063	3 902	4 088	3 223	-65.0%
- of which orimulsion	-	-	33 503	-	-	-	-	-	•
Natural gas	-	6 181	68 868	65 912	57 229	31 595	26 879	15 947	158%
Coal	214 012	207 173	134 205	127 119	139 714	85 376	113 951	89 534	-56.8%
Waste, non-renewable	-	262	5 294	7 650	9 085	8 952	8 807	9 278	3443%
Renewable energy	290	4 170	28 251	52 783	71 891	80 370	84 791	92 842	2126%
Solar	-	-	4	8	22	374	1 863	2 144	•
Wind	38	2 197	15 268	23 810	28 114	36 972	40 044	47 083	2043%
Hydro	123	101	109	81	74	63	48	54	-46.1%
Biomass	90	1 428	11 009	26 469	40 808	40 060	39 772	40 072	2706%
- Straw	-	363	2 021	7 715	10 213	6 331	6 933	5 974	1546%
- Wood	90	745	2 518	9 405	19 492	22 787	22 074	22 759	2955%
- Waste, renewable	-	320	6 470	9 350	11 104	10 941	10 765	11 340	3443%
Biogas	39	444	1 861	2 415	2 872	2 902	3 064	3 489	686%

### Other fuels than coal for electricity production



in the production of electricity. In 1990, other types of fuel than coal only accounted for just 8.7% of total fuel consumption.

In the early 1990s, coal was the dominant fuel used

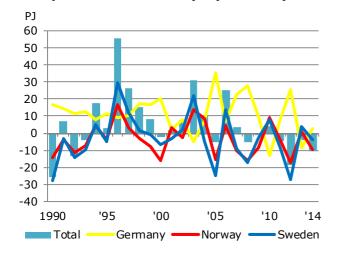
The share of fuels other than coal increased throughout the 1990s and in the period from 2000 to 2010 amounted to 40-53%. In recent years this share has been more than 50%, and in 2014, oil, natural gas and renewable energy etc. together accounted for 57.5% of fuel consumption for electricity production.

The share of other fuels than coal has increased compared with 2013. This is partly because use of coal was lower in 2014 than in 2013 due to higher imports of electricity. It is also due to an increase in the production of wind power, which has been more than outweighed by a drop in the share of natural gas.

Danish foreign trade in electricity varies considerably from year to year. Foreign trade is strongly affected by price trends on the Nordic electricity exchange, Nordpool, which, in turn, is significantly influenced by varying precipitation patterns in Norway and Sweden, where electricity production is dominated by hydropower.

In 2014, Denmark had overall net imports of electricity of 10.3 PJ. This was the result of net exports to Germany of 3 PJ and net imports from Norway and Sweden of 9.6 PJ and 3.6 PJ, respectively.

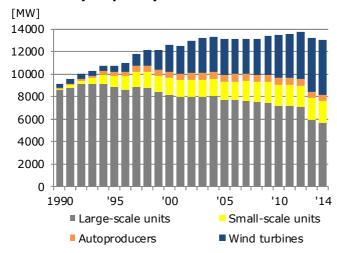
#### Net exports of electricity by country



### Electricity capacity, end of year

								Cnange
[MW]	1994	2000	2005	2010	2012	2013	2014	'94 -'14
Total	10 767	12 598	13 088	13 450	14 122	13 810	13 657	26.8%
Large-scale units	9 126	8 160	7 710	7 175	7 084	5 968	5 693	-37.6%
- Electricity	2 186	1 429	834	840	840	841	841	-61.5%
- CHP	6 940	6 731	6 877	6 335	6 244	5 127	4 852	-30.1%
Small-scale units	773	1 462	1 579	1 819	1 829	1 868	1 887	144%
Autoproducers	339	574	657	638	634	574	574	69.4%
Solar	0	1	3	7	402	571	607	606590%
Wind	521	2 390	3 128	3 802	4 164	4 820	4 888	838%
Hydro	8	10	11	9	9	9	9	3.8%

### **Electricity capacity**

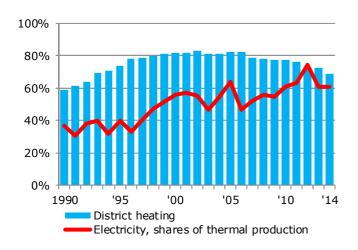


Up until the early 1990s electricity production capacity was dominated by the large-scale power units. Up through the 1990s, electricity capacity in small-scale units and secondary installations (autoproducers) increased. By the turn of the millennium, this capacity corresponded to a quarter of the capacity of the large-scale units.

A number of units at the large-scale plants which have in fact been out of operation for a number of years have now been scrapped and capacity at the large-scale plants therefore fell significantly. Capacity at small-scale units has increased slightly and has remained quite constant over recent years. Capacity at small-scale and autoproducers' installations now corresponds to one-third of the capacity of thermal plants.

Wind power capacity has also been increasing and in 2014 accounted for 4888 MW which is an increase of 68 MW or 1.4% compared with 2013.

## CHP share of thermal power and district heating production



By generating electricity and district heating together, it is possible to exploit the large amounts of heat generated through thermal production of electricity.

In 2014, 61.1% of thermal electricity production (i.e. total production excl. wind, solar and hydropower) was produced simultaneously with heating. This is unchanged compared with 2013.

In 2014, 68.9% of district heating was produced with electricity. This is 3.8 percentage points less than in 2013, and it reflects the situation that district heating production from combined heat and power plants is dropping, while district heating production from plants without co-production of electricity is increasing.

### Heat production by type of production plant, 2014

	Number of units	Electricity capacity	Heat capacity	Share of total heat supply
		[MW]	[MJ/s]	[%]
Total	2 691	7 580	23 281	100
Large-scale CHP units	28	5 127	5 924	40.6
Small-scale CHP units	648	1 906	2 392	12.3
District heating units	1 595	-	12 535	26.6
Autoproducers				
- CHP units	298	546	1 433	15.9
- Heating units	122	-	997	4.7

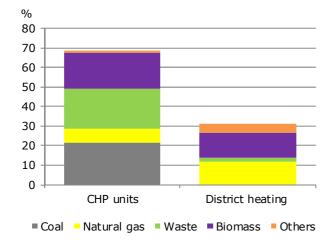
#### Heat production by primary fuel, 2014

#### CHP by plant

#### Heat producers by plant

	Number of units	Electricity capacity	Heat capacity	Share of total heat supply	Number of units	Heat capacity	Share of total heat supply
Primary fuel of unit		[MW]	[MJ/s]	[%]		[MJ/s]	[%]
Total	969	7 580	9 739	68.7	1 717	13 532	31.3
Coal	12	3 169	3 342	21.4	2	10	0.1
Natural gas	499	2 006	2 752	7.1	545	4 364	11.6
Oil	78	223	293	0.3	328	3 515	0.4
Waste	31	362	1 009	20.8	13	121	2.0
Biogas	154	93	124	0.9	29	60	0.3
Biomass	23	893	1 466	18.3	272	1 378	13.1
Biooil	-	-	-	-	61	717	0.6
Surplus heat	-	-	-	-	17	243	2.4
Solar heating	-	-	-	-	51	292	0.5
Heat pumps and electric boilers	-	-	-	-	44	364	0.4
No production in 2014	172	835	753	-	355	2 468	-

#### Heat supply by primary fuel, 2014



District heating supply takes place partly at CHP units and partly at units exclusively producing district heating. In 2014 CHP units produced 68.7%, of which: large-scale CHP units contributed 40.6%, small-scale CHP units contributed 12.3%, and CHP units at autoproducers contributed 15.9%.

Some CHP and district heating units use several types of fuel. A break down by types of primary fuel used by units in 2014 reveals that CHP units using coal as the primary fuel accounted for 21.4% of heat supply, while units using natural gas, waste or biomass as primary fuel accounted for 7.1%, 20.8% and 18.3%, respectively, of total district heating supply.

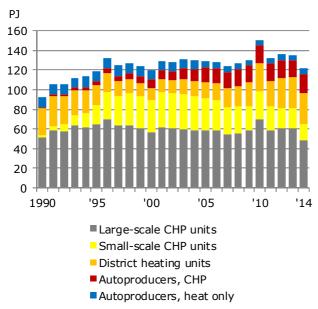
For units that produce district heating alone, units primarily firing with biomass contributed 13.1% and natural gas units contributed 11.6% of total district heating supply.

### District heating production by type of production plant

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90 -'14
Total production (gross)	79 016	92 411	119 702	128 382	150 393	135 913	135 320	121 510	31.5%
Large-scale CHP units	30 757	51 511	56 271	58 248	69 955	60 521	60 636	48 900	-5.1%
Small-scale CHP units	30	2 145	33 027	32 727	28 462	20 246	19 960	15 686	631%
District heating by type of producer	43 655	27 755	12 516	16 621	28 816	31 174	31 543	32 214	16.1%
Autoproducers									
- CHP units 1)	130	694	8 375	14 884	17 625	18 114	17 733	19 128	2656%
- Heating units <sup>1)</sup>	4 444	10 306	9 513	5 901	5 537	5 856	5 448	5 582	-45.8%
Consumption in production	-	-	-1 539	-1 303	-1 207	- 698	-1 222	-1 192	•
Large-scale CHP units	-	-	- 866	- 384	- 331	-	-	-	•
Small-scale CHP units	-	-	- 637	- 656	- 643	- 519	- 888	- 813	•
District heating units	-	-	- 36	- 262	- 233	- 179	- 334	- 380	•
Total production (net)	79 016	92 411	118 163	127 079	149 187	135 215	134 098	120 318	30.2%
Net imports	-	122	144	153	174	160	155	141	15.7%
Domestic supply	79 016	92 533	118 307	127 232	149 360	135 375	134 253	120 459	30.2%
Consumption in refineries	-	- 428	- 275	- 355	- 584	- 586	- 586	- 578	35.0%
Distribution losses	-19 754	-18 507	-23 661	-25 446	-29 872	-27 075	-26 851	-24 092	30.2%
Final consumption	59 262	73 599	94 370	101 430	118 904	107 714	106 816	95 789	30.2%

<sup>1)</sup> Gross and net production are by definition identical.

## District heating production by type of production plant



District heating production is generated at largescale CHP units, small-scale CHP units, district heating units and by autoproducers such as industrial enterprises, horticulture and waste treatment enterprises.

The greatest contribution to district heating production comes from large-scale CHP units. Throughout the 1990s, the share produced at small-scale CHP units and by autoproducers such as CHP units, at CHP units at waste treatment facilities, in industry and in horticulture etc. increased.

However, in recent years production at small-scale CHP units has fallen, while production at district heating plants has gone up again.

In 2014 total district heating production was 121.5 PJ, which is a drop of 10% compared with 2013. Compared with 2000, district heating production increased by 1%; compared with 1990 it increased by 31%.

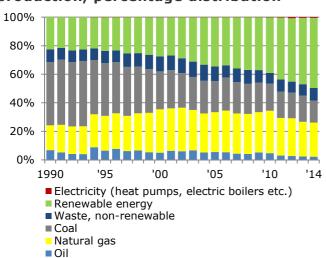
### District heating production by fuel

								Change
Direct energy content [TJ]	1994	2000	2005	2010	2012	2013	2014	'94 -'14
Total production (gross)	113 103	119 702	128 382	150 393	135 913	135 320	121 510	7.4%
Oil	6 335	4 433	6 103	4 627	2 375	2 062	1 156	-81.8%
- of which orimulsion	-	1 291	-	-	-	-	-	•
Natural gas	25 370	41 620	39 377	44 844	32 613	30 043	23 468	-7.5%
Coal	55 748	38 873	34 189	36 337	31 925	32 336	24 648	-55.8%
Surplus heat	2 838	3 676	3 174	2 517	2 463	2 287	2 533	-10.8%
Electricity excl. heat pumps	-	-	-	110	628	490	388	•
Electricity, heat pumps	23	9	2	0	6	16	14	-38.9%
Waste, non-renewable	6 084	8 651	10 713	10 627	10 750	10 748	11 396	87.3%
Renewable energy	16 704	22 440	34 823	51 331	55 152	57 337	57 907	247%
Solar	6	24	53	139	337	464	659	11376%
Geothermal	21	29	86	106	144	114	83	291%
Biomass	16 304	21 462	33 509	49 912	53 169	55 334	55 393	240%
- Straw	4 318	5 696	7 681	11 507	9 260	10 837	9 737	125%
- Wood	4 327	5 153	12 086	23 731	29 964	30 654	31 050	618%
- Biooil	223	39	650	1 685	805	707	678	204%
- Waste, renewable	7 436	10 574	13 093	12 989	13 139	13 137	13 928	87.3%
Biogas	348	903	1 169	1 173	1 486	1 369	1 723	395%
Heat pumps	25	22	6	0	17	55	50	102%

### Fuel consumption for district heating production

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90 -'14
Total fuel consumption	75 443	69 830	73 235	78 762	95 847	89 353	88 763	81 804	17.1%
Oil	51 304	4 766	3 726	4 322	4 512	2 452	2 141	1 874	-60.7%
- of which orimulsion	-	-	646	-	-	-	-	-	•
Natural gas	-	12 131	22 203	22 044	28 454	23 571	21 545	19 538	61.1%
Coal	13 527	30 898	19 459	17 121	18 245	16 021	16 225	12 653	-59.1%
Electricity	-	-	61	74	150	673	504	404	•
Waste, non-renewable	4 492	6 289	7 675	8 138	7 122	6 955	7 160	7 137	13.5%
Renewable energy	6 120	15 746	20 112	27 063	37 364	39 680	41 188	40 199	155%
Solar	-	6	24	53	143	345	475	662	10936%
Geothermal	-	48	58	172	212	288	229	166	245%
Biomass	6 105	15 611	19 425	26 125	36 288	38 168	39 699	38 264	145%
- Straw	290	3 640	5 013	5 934	8 269	7 151	8 541	7 614	109%
- Wood	324	3 541	4 983	9 484	17 365	21 576	21 578	21 202	499%
- Biooil	-	744	49	761	1 949	940	829	725	-2.6%
- Waste, renewable	5 491	7 686	9 380	9 946	8 705	8 500	8 751	8 723	13.5%
Biogas	15	81	582	707	721	863	729	1 057	1205%
Heat pumps	-	-	22	6	0	17	55	50	•

### Fuel consumption for district heating production, percentage distribution



The upper table shows output, the amount of district heating produced, and the type of fuel used. For example, in 2014 a total of 121.5 PJ district heating was produced. The lower table shows input and the amount of fuel used to produce district heating. For example, in 2014 a total of 81.8 PJ fuel was used. Input can well be less than output. This is because of variations in the heat efficiency by which the different fuels are converted into district heating, and because the energy statistics assume that certain fuels have a heat efficiency of 200% and these are used at combined heat and power plants to a greater degree. For this reason, consumption of 12.6 PJ coal (lower table) results in district heating production of 24.6 PJ (upper table).

There has been a significant change in the fuel used in the production of district heating since 1990.

Production of district heating based on coal has fallen from about 50% to the current 20%. The corresponding percentage based on renewable energy - primarily biomass - has increased from around 15% to today's slightly below 50% of district heating production.

### **Energy supply and consumption 2014**

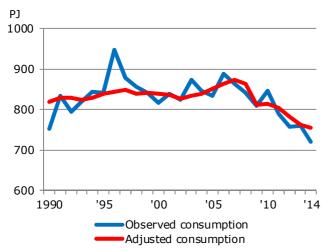
Direct energy content [TJ]	Total	Crude oil	Refinery feed- stocks	Refinery gas	LPG	Aviation gasoline		Other kerosene	JP1	Gas- /diesel- oil	Fuel oil	Waste oil	Petro- leum coke	Lubri- cation oil and bitumen
Energy supply														
- Primary production	679 680	349 635	-	-	-	-	-	-	-	-	-	-	-	-
- Recycling	11	-	-	-	-	-	-	-	-	-	-	11	-	-
- Imports	736 069	148 671	22 041	-	825	69	28 188	-	32 459	112 519	134 802	-	9 088	10 961
- Exports	-646 731	-206 404	-34 656	-	-4 494	- 4	-53 217	-	-2 786	-71 353	-156 854	-	- 110	- 166
- Border trade		-	_	_	_	_	1 675	-	_	-9 864	-	_	628	-
- International marine bunkers	-31 131	-	_	_	_	_	_	-	_	-12 772	-18 258	_	_	- 101
- Supply from blending		- 0	2 223	_	131	- 1	- 72	11	- 1	- 736	-1 432	_	- 1	9
- Stock changes		5 470	272	_	170	- 16	498	-	4 374	-12 053	-5 596	_	-2 423	- 209
Statistical differences		- 255	- 6	0	- 152	- 1	- 307	- 0	27	810	1 874		31	49
Extraction and gasification	-23 023						-		-				-	
Refineries														
- Input and net production		-297 115	10 126	15 524	5 445	_	81 206	-	5 973	129 603	50 500	_	_	_
- Own use in production	-15 908	-	-	-13 880	-	_	-	_	-	-	- 387	_	_	_
Used in distribution	-2 337	_	_	-	_	_	_	_	_		-			
Large-scale power units	2 337													
- Fuel used and production		_	-	-	-	_	-	-	-	- 289	- 7	_	_	-
- Own use in production	- 5	_	_	_	_	_	_	_	_	203		_	_	_
Large-scale CHP units														
- Fuel used and production					- 0			-	_	- 26	- 812			
- Own use in production	-4 505	_	_	_	- 0	_	_	_		- 20	- 012	_		_
-	-4 303													
Renewable energy, selected														
- Wind		-	-	-	-	-	-	-	-	-	-	-	-	-
- Hydro		-	-			-	-	-						
Small-scale CHP units														
- Fuels used and production	4 000	-	-	-	-	-	-	-	-	- 41	- 11	-	-	-
- Own use in production	-1 232	-	-	-				-	-		-			-
District heating units														
- Fuels used and production		-	-	-	-	-	-	-	-	-1 382	- 123	- 3	-	-
- Own use in production	- 380	-	-	-	-	-	-	-	-	-	-	-	-	-
Autoproducers														
- Electricity units		-	-	-	-	-	-	-	-	-	-	-	-	-
- CHP units		-	-	-1 644	- 86	-	-	-	-	- 49	- 698	- 5	-	-
- Heat units		-	-	-	-	-	-	-	-	- 5	-	- 3	-	-
Gas works		-	-	-	-	-	-	-	-	- 5	-	-	-	-
Distribution losses etc.	-31 344	-	-	-	-	-	-	-	-	-	-	-	-	-
Final consumption														
- Non-energy use	-10 544	-	-	-	-	-	-	-	-	-	-	-	-	-10 544
- Road	-156 495	-	-	-	-	-	-57 023	-	-	-90 537	-	-	-	-
- Rail	-4 795	-	-	-	-	-	-	-	-	-3 407	-			
- Domestic sea transport	-5 670	-	-	-	-	-	-	-	-	-5 124	- 546	-	-	-
- International aviation	-37 748	-	-	-	-	- 3	-	-	-37 745	-	-	-	-	-
- Domestic aviation	-1 377	-	-	-	- 0	- 39	- 0	-	-1 338	-	-	-	-	-
- Military transport	-1 810	-	-	-	-	- 6	- 3	-	- 963	- 838	-	-	-	-
- Agriculture, forestry and horticulture	-26 791	-	-	-	- 147	-	- 59	- 0	-	-13 250	- 70	-	- 2	-
- Fishing	-4 211	-	-	-	- 12	-	- 0	-	-	-4 199	-	-	-	-
- Manufacturing	-83 378	-	-	-	- 864	-		- 2	-	-2 195	-2 065	-	-6 574	-
- Construction	-6 456	_	-	_	- 80	-	- 8	- 0	-	-4 620		-	-	-
- Wholesale	-10 283	_	-	-	- 20			- 0	-	- 239	- 2	-	- 1	-
- Retail trade	-9 865	_	-	-	- 16			- 0	-	- 102	- 1			-
- Private service	-33 513	_			- 76		-	- 1	_	- 609	- 60	- 0	- 2	
- Public service	-22 539	_			- 79	_		- 2	_	-1 023	- 110	-		
- Single-family houses	-124 960	-	-	-	- 427	-	- 868	- 1	-	-6 925	-	-		-
- Multi-family houses	-46 244	-	-	-	- 118	-	-	- 3	-	-1 290	- 144	-	- 4	

Natural gas	Coal	Coke etc.	Solar energy	Wind power	Hydro power	Geo- ther- mal	Straw	Wood chips	Fire- wood	Wood pellets	Wood waste	Biogas	Waste	Biooil, biodie- sel etc.	Heat pumps			Gas- works gas
173 650	-	-	3 371	47 083	54	166	18 409	10 842	15 634	1 951	7 053	5 143	38 720	725	7 245	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23 422	111 963		-	-	-	-	-	5 585	2 778	35 421	-	-		10 792	-	45 728		
-78 439	-1 294	- 0	-	-	-	-	-	-	-	-	-	-	-	-1 503	-	-35 449	-	-
-	-	-	-	_	_	-	-	-	-	-	-	-	-	-		-		-
														- 209				
- 842	-5 111		_	_	_	_	_	_	_	_	_	_	_	224	_	_	_	_
1 456	1 440		0		_	_		- 0		0		_	- 0	- 360		_	0	- 0
-23 023	-		_		_	_	-	_	-		-	-	-	_	_	-	-	
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	-	-
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-9 515	-101 757	-	-	-	-	-	-5 837	-4 818	-	-21 275	- 557	- 12	-	-	-		48 900	-
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-7 979	- 334	_	_	_	_	_	-2 649	-2 926	_	- 354	- 498	-2 948	-8 201	_	_	7 140	15 686	_
-	-		_	-	_	-			_	-	-	-	-	-	-	- 419		
-14 359	- 79	-	- 662	-	_	- 166	-5 076	-8 067	-	-1 956	- 599	- 154	- 434	- 725	-	- 407	32 214	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 380	-
-	-	-	-2 144	-	-	-	-	-	-	-	-	- 26	-	-	-	2 152	-	-
-3 473	- 17	-	-	-	-	-	- 3	- 11	-	- 0	-2 226	-1 242	-25 272	-	-	7 231	19 128	-
- 159	-	-	-	-	-	-	- 22	- 351	-	-	- 323	- 163	-2 572	-	-	- 47		
- 678	-		-	-		-	-	-	-		-	-	-	-	-	-		677
- 119	-	-		-	_		-	-	-	-	-	-		-	-	-7 106	-24 092	- 27
_																		
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-1 416	-1 041	-	-	-	-	-	-1 929	- 25	-	-	- 177	- 107	-	-	- 563	-6 421	-1 585	-
-	-	-			_		-		-	-	-	-	-	-	-	-	-	-
-28 009	-3 770	- 491	-	-	-	-	-	-	-	-1 103	-2 665	- 243	-1 494	-	-1 752	-28 463	-3 469	- 209
- 463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-1 285	-	-
- 908	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-5 358	-3 756	
- 689	-	-	-	-	-	-	-	-	-		-			-	-	-6 156		
-2 801	-	-	-	-	-	-	-	- 14	-	-	- 9			-	-		-12 632	
-2 209	-			-				- 139		- 965	-					-8 506		
-19 787	-		- 395	-			-2 893			-11 719	-			- 9			-30 284	
-3 658	-	- 0	- 85		-	-	-	-	-	-	-	-	-	-	-	-ა 990	-31 766	- 186

#### **Gross energy consumption**

									Change
	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Adjusted total gross energy consumption. Fuel equivalent [PJ]	814	819	839	850	814	782	763	755	-7.8%
By fuel	814	819	839	850	814	782	763	755	-7.8%
Oil	546	355	376	352	312	289	278	276	-22.2%
Natural gas	0	82	192	192	176	149	138	127	55.7%
Coal and coke	241	327	175	166	147	146	143	137	-58.1%
Waste, non-renewable	5	8	14	17	16	17	17	18	137%
Renewable energy	22	48	81	123	163	180	186	196	312%
By energy product	814	819	839	850	814	782	763	755	-7.8%
Oil	446	338	329	333	300	281	272	270	-20.2%
Natural gas	0	59	98	100	94	90	89	87	46.5%
Coal and coke	22	17	12	11	6	5	5	5	-68.4%
Waste, non-renewable	0	0	1	1	1	1	1	1	122%
Renewable energy	16	28	32	43	54	60	60	63	127%
Electricity	249	297	286	279	274	256	248	238	-20.0%
District heating	73	77	79	81	86	88	88	90	16.7%
Gas works gas	7	2	1	1	1	1	1	1	-61.5%
By use	814	819	839	850	814	782	763	755	-7.8%
Energy sector	17	28	44	52	46	45	41	39	38.8%
Non-energy use	16	13	13	12	11	12	12	11	-18.9%
Transport	144	172	203	218	212	207	204	209	22.1%
Agriculture and industry	228	226	226	213	187	176	168	163	-28.2%
Commercial and public services	130	132	125	127	130	124	120	117	-11.5%
Households	277	248	228	229	228	218	218	217	-12.6%
Observed total energy consumption [PJ]	830	752	816	835	846	757	759	719	-4.4%
Oil	555	343	370	348	316	288	278	273	-20.5%
Natural gas	0	76	186	188	185	146	138	119	56.7%
Coal and coke	252	255	166	155	164	106	136	107	-57.8%
Waste, non-renewable	5	7	14	17	17	17	17	17	150%
Renewable energy	23	45	79	122	168	180	187	192	322%
Foreign trade in electricity, net imports	- 4	25	2	5	- 4	19	4	10	-59.5%
Foreign trade in district heating, net imports	-	0	0	0	0	0	0	0	15.7%

## Observed energy consumption and adjusted gross energy consumption

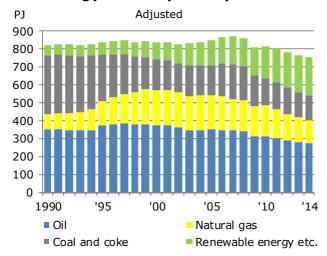


Observed energy consumption shows the registered amount of energy consumed in a calendar year. Gross energy consumption is derived by adjusting observed energy consumption for the fuel consumption linked to foreign trade in electricity. The adjusted gross energy consumption is moreover adjusted for climate variations with respect to a normal weather year. The purpose of this consumption figure is to provide a clearer picture of trends in domestic energy consumption.

Adjusted gross energy consumption was 755 PJ in 2014, which is 1.1% below the 2013 level. Compared with 1990, consumption fell by 7.8%.

Observed energy consumption was 719 PJ in 2014, which is 5.3% less than in 2013. The decrease can be explained in part by higher net imports of electricity, warmer weather and increased wind power production. Compared with 1990, observed energy consumption was 4.4% lower. This should be seen in the context of high net imports of electricity in 1990, which in 1990 led to low fuel consumption for electricity production.

#### Gross energy consumption by fuel

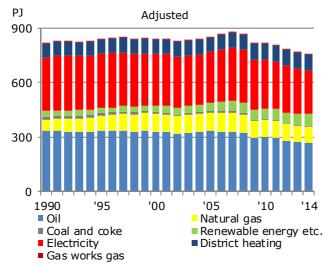


Adjusted gross energy consumption was 7.8% lower in 2014 than in 1990. However, consumption of individual fuels has followed rather varied trends.

Consumption of oil fell up until 1993, after which it rose again and stabilised, first at around 380 PJ and then at around 350 PJ. After this, there was another drop. From 1990 to 2014, oil consumption fell by 22.2%. Consumption of coal, which primarily takes place at CHP units, has decreased by 58.1% since 1990. In the period consumption of natural gas and renewable energy etc. (i.e. renewable energy and non-renewable waste) went up by 55.7% and 287%, respectively.

In 2014 consumption of oil, natural gas and coal fell by 0.8%, 7.9% and 4.5%, respectively, compared with the year before. Renewable energy etc. grew by 5.7% compared with 2013.

### Gross energy consumption by energy product after transformation

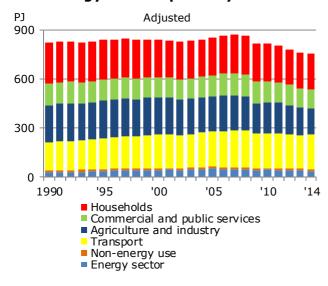


Gross energy consumption by energy product shows gross energy consumption after a number of fuels have been transformed to electricity, district heating, and gas works gas. In other words, the consumption of oil, natural gas, coal and renewable energy etc. is a statement of the volumes of these fuels used outside the transformation sector.

Fuel consumption for electricity production was 238 PJ in 2014, which is 4.1% less than in 2013. Compared with 1990, fuel consumption fell by 20.0% due to more efficient electricity production and a growing share of wind power.

Fuel consumption for district heating was 90 PJ in 2014, which is 2.9% higher than in 2013. Compared with 1990, fuel consumption increased by 16.7%. Also in this regard, production has become more efficient, as district heating production has increased by 31.5% since 1990.

#### Gross energy consumption by use



For gross energy consumption broken down by use, note that electricity, district heating and gas works gas are included with their associated fuel consumptions.

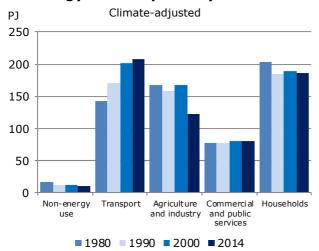
Gross energy consumption for transport was 2.5% higher in 2014 than the year before, whereas in the agriculture and industry sector consumption fell by 3.1%. In the commercial and public services sector and households, gross energy consumption fell by 3.3% and 0.6%, respectively. In the energy sector (platforms in the North Sea and oil refineries) gross energy consumption fell by 4.1%.

Compared with 1990, gross energy consumption for transport increased by 22.1%. In the agriculture and industry sector, gross energy consumption fell by 28.2%, while it fell by 11.5% and 12.6%, respectively, for the commercial and public services sector and for households. From 1990 to 2014, developments were affected by the fact that electricity and district heating can be generated with ever smaller fuel consumption.

### Final energy consumption

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total final energy consumption Climate adjusted	609 602	604 097	650 815	665 869	633 048	613 283	607 592	607 685	0.6%
By energy product									
Oil	430 738	321 946	312 354	312 290	283 653	263 993	257 522	256 658	-20.3%
Natural gas	-	50 060	72 674	72 415	67 638	65 068	65 062	63 734	27.3%
Coal and coke	21 623	17 243	12 389	10 826	5 559	4 825	5 418	5 456	-68.4%
Waste, non-renewable	288	470	763	1 239	922	895	890	1 045	122%
Renewable energy	15 928	27 833	32 228	43 216	53 578	59 553	60 112	63 264	127%
Electricity	78 378	103 212	117 590	120 731	114 488	112 149	112 280	110 987	7.5%
District heating	57 715	81 679	102 127	104 604	106 725	106 275	105 702	105 854	29.6%
Gas works gas	4 930	1 654	691	547	485	525	607	688	-58.4%
By use									
Non-energy use	16 253	13 004	12 619	12 064	11 026	11 505	11 636	10 544	-18.9%
Total transport	143 337	170 216	201 209	215 789	209 741	205 284	202 731	207 894	22.1%
Road transport	100 945	129 943	153 666	161 923	161 215	156 029	153 469	156 495	20.4%
Rail transport	5 016	4 765	4 339	4 488	4 728	4 757	4 740	4 795	0.6%
Sea transport, domestic	5 588	6 344	6 857	8 026	6 533	6 219	6 293	5 670	-10.6%
Aviation	23 642	27 515	34 822	37 627	35 795	36 696	36 300	39 125	42.2%
Military transport	8 145	1 649	1 525	3 726	1 470	1 583	1 930	1 810	9.8%
Total agriculture and industry	167 679	158 790	167 113	158 242	136 802	129 755	125 015	122 788	-22.7%
Agriculture, forestry and horticulture	29 818	33 087	32 428	29 322	29 146	28 104	28 039	27 875	-15.8%
Fishing	7 312	10 785	9 451	7 488	6 049	4 669	5 209	4 211	-61.0%
Manufacturing	124 557	108 624	117 583	113 280	94 467	90 275	85 144	84 174	-22.5%
Construction	5 992	6 295	7 651	8 152	7 140	6 706	6 623	6 528	3.7%
Total commercial and public services	78 314	77 047	80 599	85 045	83 893	82 124	82 065	80 435	4.4%
Wholesale	19 045	13 795	13 893	12 906	11 493	11 150	11 135	10 736	-22.2%
Retail trade	9 702	8 883	9 323	9 991	10 939	10 592	10 544	10 272	15.6%
Private service	25 955	28 812	32 901	36 238	36 653	36 064	36 028	35 368	22.8%
Public service	23 612	25 557	24 481	25 909	24 807	24 318	24 358	24 060	-5.9%
Total households	204 018	185 039	189 275	194 729	191 585	184 616	186 145	186 024	0.5%
Single-family houses	155 706	137 383	139 568	144 258	140 888	134 509	136 118	135 756	-1.2%
Multi-family houses	48 312	47 656	49 706	50 471	50 696	50 106	50 027	50 268	5.5%
Observed consumption Total final energy consumption	616 998	580 458	632 528	658 455	659 547	616 323	609 948	586 678	1.1%

#### Final energy consumption by use

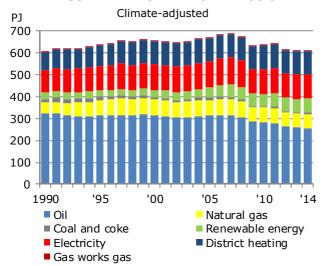


Final energy consumption includes consumption for transport and non-energy purposes (such as lubricants and asphalt), and energy consumption for production and heating by the agriculture and industry sector, the commercial and public services sector, and energy consumption by households.

Final energy consumption in 2014 was 607.7 PJ, which is unchanged compared with 2013. Final consumption was 0.6% higher compared with 1990.

Energy consumption for the transport sector increased steadily throughout most of the period. From 1990 to 2014 consumption went up by 22.1%. Energy consumption in the agriculture and industry sector fell by 22.7% from 1990 to 2014, while consumption in the commercial and public services sector and households increased by 4.4% and 0.5%, respectively.

### Final energy consumption by energy product

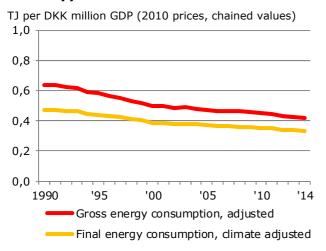


Consumption of oil fell by 0.3%, while consumption of natural gas (for other uses than electricity and district heating production) fell by 2.0% from 2013 to 2014. Consumption of electricity decreased by 1.2% and consumption of district heating was 0.1% higher than the year before.

Since 1990, final consumption of natural gas has increased by 27.3%, while consumption of electricity and district heating has increased by 7.5% and 29.6%, respectively. In the same period, consumption of oil and coal fell by 20.3% and 68.4%, respectively.

In 2014, final consumption of renewable energy etc. was 5.4% higher than in 2013. Consumption of renewable energy etc. has increased by 127% since 1990.

# Gross energy consumption and final energy consumption per DKK million GDP (intensity)



Economic activity in Denmark, measured in terms of gross domestic product (GDP) in 2010 prices (chained values), has increased much faster than energy consumption.

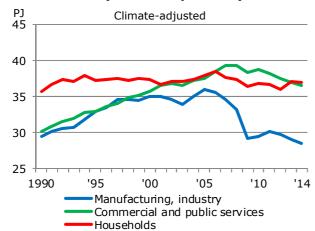
In 2014 gross energy consumption was 0.415 TJ per DKK million GDP (calculated in 2010 prices, chained values), as opposed to 0.635 TJ in 1990; i.e. fuel intensity was reduced by 34.6% during this period. Intensity fell by 2.1% in 2014 compared with the year before.

If developments in GDP are instead compared to developments in final energy consumption, energy intensity fell by 28.6% from 1990 to 2014. This reduction is less than the figure above, because the increased efficiency of the transformation sector is not included. Intensity fell by 1.1% in 2014 compared with the year before.

### Final electricity consumption

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total final electricity consumption Climate adjusted	78 378	103 212	117 590	120 731	114 488	112 149	112 280	110 987	7.5%
Rail transport	479	736	1 253	1 351	1 455	1 387	1 391	1 387	88.6%
Agriculture and industry	27 724	36 633	43 283	44 092	37 638	37 475	36 923	36 253	-1.0%
Agriculture, forestry and horticulture	5 553	6 143	7 047	6 874	6 841	6 412	6 572	6 463	5.2%
Manufacturing	21 404	29 436	35 022	35 943	29 426	29 717	29 053	28 505	-3.2%
Construction	767	1 054	1 214	1 274	1 372	1 346	1 299	1 285	21.9%
Commercial and public services	21 788	30 147	35 715	37 479	38 656	37 400	36 920	36 438	20.9%
Wholesale	3 599	5 451	5 936	5 973	5 740	5 527	5 470	5 368	-1.5%
Retail trade	3 784	5 202	5 742	6 260	6 543	6 366	6 284	6 167	18.6%
Private services	8 347	11 715	14 903	15 866	17 108	16 685	16 502	16 363	39.7%
Public services	6 058	7 778	9 134	9 380	9 266	8 821	8 664	8 540	9.8%
Households	28 388	35 696	37 339	37 810	36 738	35 887	37 046	36 908	3.4%
Single-family houses	21 431	27 011	28 210	28 279	27 335	26 627	27 994	27 870	3.2%
Multi-family houses	6 957	8 686	9 129	9 530	9 403	9 260	9 052	9 039	4.1%
Observed electricity consumption	78 613	102 139	116 849	120 467	115 411	112 253	112 363	110 249	7.9%

#### Final electricity consumption by use

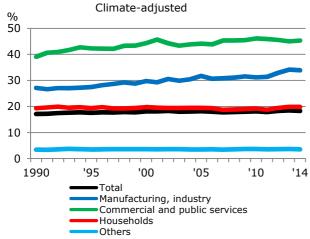


Electricity consumption by manufacturing industries was 1.9% lower in 2014 than in 2013. Compared with 1990, electricity consumption fell by 3.2%.

In the commercial and public services sector, electricity consumption increased until 2008, after which it fell. In 2014, electricity consumption was 1.3% lower than the year before. From 1990 to 2014 electricity consumption went up by 20.9%.

The electricity consumption of households increased slightly from 1990 to 2006. Consumption has remained almost stable from 2009 to 2011. Electricity consumption decreased by 0.4% in 2014. Consumption increased by 3.4% relative to 1990.

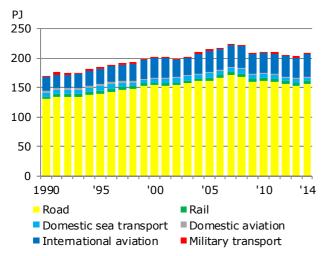
# Electricity consumption's share of total energy consumption



From 1990 to 2000, there was a slight increase in electricity consumption's share of total energy consumption in all areas of use, except for in the transport sector. In 1990, the share was 17.1%, in 2000 it was 18.1% and in 2014 it was 18.3%.

In the commercial and public services sector, electricity consumption's share of total energy consumption grew steadily from 1990 when the share was 39.1% and up to 2001 when it was 45.7%. Since 2002 the share has fluctuated between 43.4% and 46.1%. In 2014, electricity consumption accounted for 45.3% of the sector's total energy consumption. Manufacturing industries has seen a steady increase across the period 1990-2014; with the share of electricity at 33.9% in 2014 compared with 27.1% in 1990. Electricity consumption's share for households remains more or less unchanged with 19.3% in 1990 and 19.8% in 2014.

### Energy consumption for transport by type

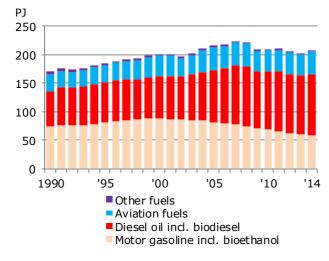


Energy consumption for transport followed an upward trend until 2007, when energy consumption was at 224.0 PJ. In 2009 energy consumption fell to 208.4 PJ. In 2014, energy consumption was calculated at 207.9 PJ, which is 2.5% higher than in 2013. Compared with 1990, energy consumption for transport has increased by 22.1% in 2014.

Energy consumption for road transport was 156.5 PJ in 2014, which is 2.0% higher compared with 2013. Energy consumption for road transport is calculated as sales in Denmark, adjusted for border trade.

Energy consumption for international aviation grew steadily throughout almost the whole period 1990-2014, only interrupted by drops in 2002 and 2009. In 2014, consumption increased by 8.4%.

## Energy consumption for transport by fuel type

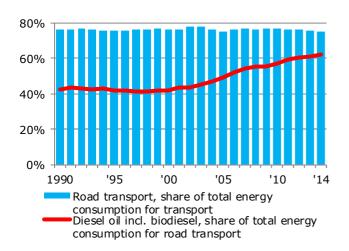


Consumption of motor gasoline (including bioethanol) fell by 1.1% from 2013 to 2014, while consumption of diesel oil (including biodiesel) increased by 3.2%. Consumption of bioethanol and biodiesel together went up from 8.7 PJ in 2013 to 8.9 PJ in 2014.

Considering developments from 1990 to 2014, consumption of motor gasoline (including bioethanol) fell by 20.8%, while consumption of diesel oil (including biodiesel) grew by 73.4%. Consumption of aviation fuels increased by 38.3%.

Consumption of other types of fuel fell by 63.0% in the same period. Other types of fuel include fuel oil for sea transport, as well as electricity consumption by railways.

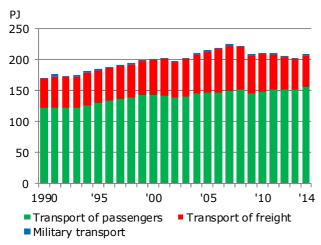
#### **Energy consumption for road transport**



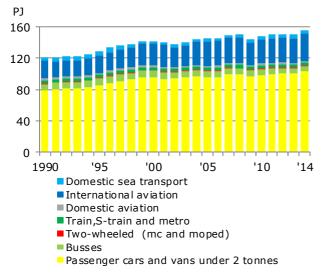
Energy consumption for road transport is by far the largest contributor to total energy consumption for transport. This contribution was almost unchanged from 1990 to 2014. In 2014, road transport accounted for 75.3% of total energy consumption for transport.

Consumption of diesel oil has increased significantly since 1990. Diesel oil has been the most common fuel for road transport since 2006. In 2014, diesel oil (including biodiesel) accounted for 62.4% of total energy consumption for transport, as opposed to 42.1% in 1990.

### Final energy consumption by passenger and freight transport



## Energy consumption for passenger transport by means of transport



In the distribution of energy consumption for transport of passengers and freight, vans less than two tonnes are included under passenger transport, whereas vans of 2-6 tonnes are included under freight transport.

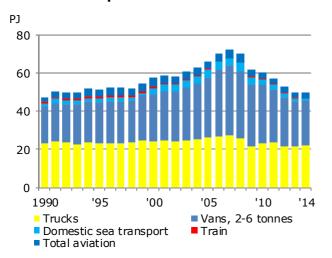
Out of the total energy consumption for transport in 2014, which amounted to 207.9 PJ, passenger transport accounted for 156.2 PJ, corresponding to 75.1%. Energy consumption for freight transport was 49.9 PJ, corresponding to 24.0%, while energy consumption for transport by Danish military was 1.8 PJ.

Energy consumption for passenger transport increased by 3.5% from 2013 to 2014, while energy consumption for freight transport grew by 0.1%. Considering the trend from 1990 to 2014, energy consumption for passenger transport increased by 28.7%, while energy consumption for freight transport increased by 5.7%.

Energy consumption for passenger transport is mainly used for transport by car and for international aviation. In 2014, energy consumption for these categories made up 66.1% and 22.2%, respectively, of total energy consumption for passenger transport.

Energy consumption for cars and vans (less than 2 tonnes) increased by 2.4% from 2013 to 2014, while energy consumption for international aviation increased by 8.4%. From 1990 to 2014, energy consumption for cars and vans increased by 31.1%, while energy consumption for international aviation grew by 55.7%.

### Energy consumption for freight transport by means of transport



Energy consumption for freight transport is mostly by trucks and vans (2-6 tonnes). In 2014, energy consumption by these types of vehicle made up 44.2% and 46.9%, respectively, of total energy consumption for freight transport.

Energy consumption for trucks grew by 3.5% from 2013 to 2014, while energy consumption for vans fell by 1.6%. Energy consumption for trucks dropped by 4.9% from 1990 to 2014, while energy consumption for vans increased by 22.6%.

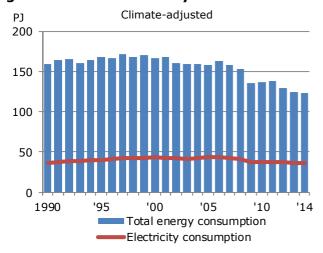
### Final energy consumption for transport

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	′90-′14
Total transport Observed consumption	143 337	170 216	201 209	215 789	209 741	205 284	202 731	207 894	22.1%
LPG	880	464	425	323	3	-	-	0	-100%
Aviation gasoline	201	155	119	107	76	67	69	48	-69.1%
Motor gasoline	67 830	74 327	88 976	82 126	67 726	59 951	57 601	57 026	-23.3%
JP4	7 500	-	-	-	-	-	-	-	•
Petroleum	129	462	39	14	0	0	0	-	-100%
JP1	23 473	28 828	35 810	39 959	36 586	37 330	37 284	40 046	38.9%
Gas/diesel oil	41 053	61 685	73 077	90 529	101 893	97 282	96 901	99 906	62.0%
Fuel oil	1 791	3 560	1 509	1 379	868	624	775	546	-84.7%
Bioethanol	-	-	-	-	1 118	2 116	1 927	1 872	•
Biodiesel	-	-	-	-	16	6 526	6 783	7 063	•
Electricity	479	736	1 253	1 351	1 455	1 387	1 391	1 387	88.6%
Road	100 945	129 943	153 666	161 923	161 215	156 029	153 469	156 495	20.4%
Rail	5 016	4 765	4 339	4 488	4 728	4 757	4 740	4 795	0.6%
Domestic sea transport	5 588	6 344	6 857	8 026	6 533	6 219	6 293	5 670	-10.6%
Domestic aviation	1 850	3 177	2 191	1 817	1 865	1 545	1 485	1 377	-56.6%
International aviation	21 792	24 338	32 631	35 810	33 930	35 151	34 815	37 748	55.1%
Military transport	8 145	1 649	1 525	3 726	1 470	1 583	1 930	1 810	9.8%
Passenger transport	100 889	121 356	142 254	145 935	147 948	150 879	150 921	156 169	28.7%
Freight transport	34 303	47 212	57 430	66 129	60 322	52 821	49 880	49 915	5.7%
Military transport	8 145	1 649	1 525	3 726	1 470	1 583	1 930	1 810	9.8%

### Final energy consumption in agriculture and industry

									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	′90-′14
Total for agriculture and industry Climate adjusted	167 679	158 790	167 113	158 242	136 802	129 755	125 015	122 788	-22.7%
By energy product									
Oil	112 269	65 613	58 460	53 743	44 071	39 646	36 666	34 571	-47.3%
Natural gas	-	25 281	35 606	32 433	30 901	30 011	29 643	30 524	20.7%
Coal and coke	19 126	16 315	12 339	10 817	5 531	4 802	5 399	5 455	-66.6%
Waste, non-renewable	25	13	72	591	759	657	664	672	5229%
Renewable energy	5 174	9 377	8 098	7 759	11 509	10 329	9 682	9 668	3.1%
Electricity	27 724	36 633	43 283	44 092	37 638	37 475	36 923	36 253	-1.0%
District heating	2 949	5 409	9 210	8 788	6 353	6 686	5 857	5 434	0.4%
Gas works gas	413	149	45	19	41	150	179	212	41.9%
By use									
Agriculture, forestry and horticulture	29 818	33 087	32 428	29 322	29 146	28 104	28 039	27 875	-15.8%
Fishing	7 312	10 785	9 451	7 488	6 049	4 669	5 209	4 211	-61.0%
Manufacturing industries	124 557	108 624	117 583	113 280	94 467	90 275	85 144	84 174	-22.5%
Construction	5 992	6 295	7 651	8 152	7 140	6 706	6 623	6 528	3.7%

### Energy and electricity consumption in agriculture and industry

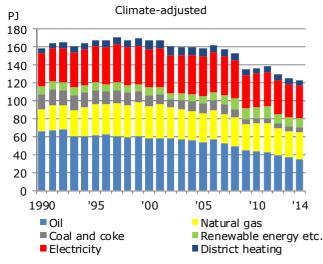


Agriculture and industry covers agriculture, forestry and horticulture, fishing, manufacturing industries (excl. refineries), as well as construction.

In 2014 climate-adjusted energy consumption in agriculture and industry was 122.8 PJ, which is 1.8% lower than the year before. Compared with 1990, energy consumption decreased by 22.7%.

Electricity consumption in 2014 was 36.3 PJ after adjusting for climate variation. This is 1.8% less than the year before. Compared with 1990, electricity consumption decreased by 1.0%.

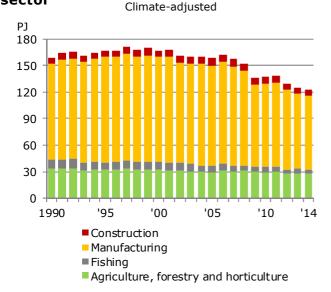
### Energy consumption in agriculture and industry by energy products



In 2014 consumption of oil and renewable energy etc. for agriculture and industry fell by 5.7% and 0.1%, respectively, compared with 2013, while coal and natural gas increased by 1.0% and 3.0%, respectively. Consumption of electricity fell by 1.8%, while consumption of district heating was 7.2% lower in 2014 than the year before.

Consumption of natural gas in the period 1990-2014 increased by 20.7%, while consumption of oil and coal fell by 47.3% and 66.6%, respectively. Consumption of renewable energy etc. increased by 10.1%. Consumption of electricity has decreased by 1.0% and district heating has increased by 0.4% since 1990.

# Energy consumption by individual industry in the agriculture and industry sector

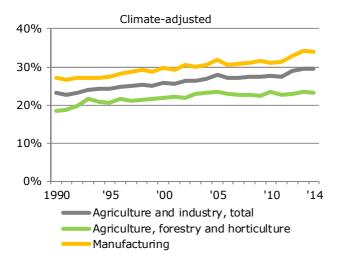


Compared with 2013 energy consumption fell by 1.1% and 1.4%, respectively, in manufacturing industries and in construction. Energy consumption in agriculture, forestry and horticulture fell by 0.6% in 2014.

From 1990 to 2014, energy consumption in manufacturing industries fell by 22.5% Energy consumption in agriculture, forestry and horticulture fell by 15.8%, while in construction consumption increased by 3.7%. In fishing, energy consumption fell by 61.0%.

In 2014, agriculture, forestry and horticulture's share of total energy consumption by the agriculture and industry sector was 22.7%, while the share of manufacturing industries was 68.6%. In 2014, fishing and construction accounted for 3.4% and 5.3%, respectively, of energy consumption in the agriculture and industry sector.

### Electricity consumption's share of total energy consumption

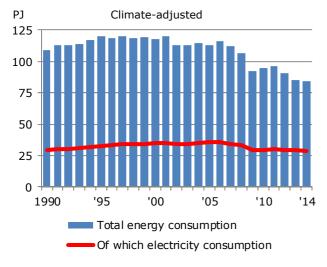


Electricity consumption's share of total energy consumption in the agriculture and industry sector increased from 23.1% in 1990 to 29.5% in 2014.

In manufacturing industries the share of electricity increased from 27.1% in 1990 to 33.9% in 2014.

In agriculture, forestry and horticulture the share of electricity was 18.6% in 1990. In 2014 this share increased to 23.2%.

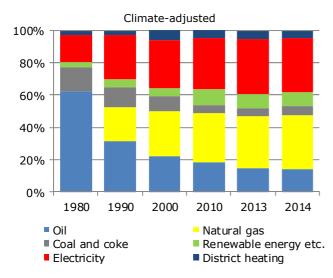
### Energy and electricity consumption in manufacturing industries



Climate-adjusted energy consumption in manufacturing industries fell from 85.1 PJ in 2013 to 84.2 PJ in 2014, corresponding to a fall of 1.1%. Compared with 1990, energy consumption decreased by 22.5%.

In 2014, electricity consumption was 28.5 PJ, which is 1.9% lower than the year before. Electricity consumption has fallen by 3.2% since 1990.

### Composition of energy consumption in manufacturing industries



The composition of energy consumption in manufacturing industries has changed significantly since 1980, when oil consumption was dominant by 62.2% of the total energy consumption. In 1990, oil consumption accounted for almost one-third of total energy consumption. In 2014 this figure was 14.0%.

Natural gas continues to make up an increasing share of energy consumption in manufacturing industries. This share was 33.8% in 2014, as opposed to 20.8% in 1990.

Coal's share of energy consumption has gone down from 12.3% in 1990 to 5.1% in 2014. The contribution from renewable energy etc. and district heating has increased from 1990 to 2014. In 2014, their shares were 8.7% and 4.3%, respectively.

The share of electricity consumption grew from 27.1% in 1990 to 33.9% in 2014.

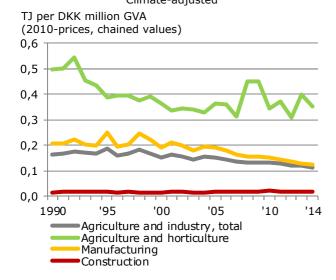
### Energy intensities in agriculture and industry

Climate-adjusted

TJ per DKK million GVA (2010 prices, chained values) 3,0 1,2 2,5 1,0 2,0 0,8 1.5 0.6 1.0 0,4 0,5 0,2 0,0 0,0 '14 1990 '95 '00 '05 '10 Agriculture and industry, total Manufacturing Construction

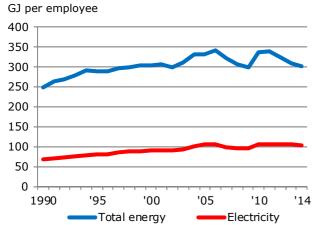
# Electricity intensities in agriculture and industry Climate-adjusted

Agriculture and horticulture (Right axis)



### Energy consumption per employee in manufacturing industries

Climate-adjusted



Energy intensity has been calculated as climateadjusted energy consumption in relation to the gross value added (GVA), measured at 2010 prices, chained values.

Energy intensity in agriculture and industry dropped by 45.4% from 1990 to 2014. The annual average fall in energy intensity from 1990 to 2014 was 2.5% per year.

In manufacturing industries, energy intensity fell by 51.8% from 1990 to 2014. In 2014, energy intensity fell by 3.2% compared with 2013.

In agriculture, forestry and horticulture, energy intensity decreased by 11.6% in 2014. The energy intensity has fallen by 43.6% since 1990. Since 2005, the trend has been influenced by significant fluctuations in agricultural, forestry and horticultural GVA.

Electricity intensity has been calculated as climateadjusted electricity consumption in relation to GVA, measured at 2010 prices, chained values.

After a period of fluctuating electricity intensity in the 1990s, it fell steadily up to 2014. In the period 1990 to 2014, electricity intensity fell by 30.1%. In 2014, electricity intensity was 0.113, i.e. 0.113 TJ of electricity (corresponding to 31,402 kWh) were used for every DKK 1 million GVA in the agriculture and industry sector. In 2014, electricity intensity fell by 4.6% compared with 2013.

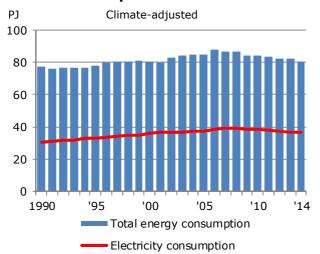
Electricity intensity in manufacturing industries fell by 3.9% in 2014. In agriculture, forestry and horticulture intensity fell by 12.5%. Both compared with 2013. Electricity intensity in construction fell by 4.3%.

Energy and electricity consumption per employee in manufacturing industries have developed differently than the intensities shown above. This is due to a considerable increase in productivity, i.e. measured as GVA per employee in this sector.

Energy consumption per employee was 301.4 GJ in 2014, as opposed to 308.8 GJ the year before. This corresponds to a decrease of 2.4%. Compared with 1990, energy consumption per employee grew by 21.8%.

Electricity consumption per employee was 102.1 GJ in 2014, which is 3.1% lower than the year before. Compared with 1990, electricity consumption per employee increased by 52.2%.

### Energy and electricity consumption in the commercial and public services

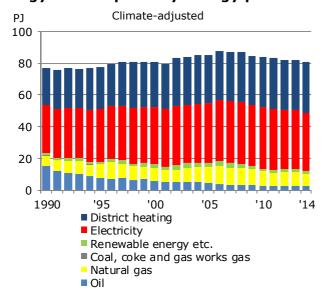


The commercial and public services sector includes wholesale, retail, private and public services.

Climate-adjusted energy consumption was 80.4 PJ in 2014, which is 2.0% lower than the year before. Compared with 1990, consumption increased by 4.4%.

In 2014, climate-adjusted electricity consumption was 36.4 PJ, which is 1.3% lower than the year before. Compared with 1990, electricity consumption increased by 20.9%.

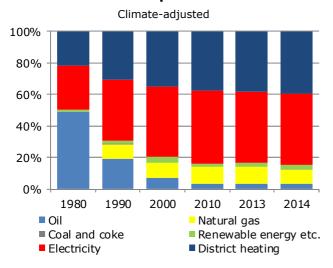
### **Energy consumption by energy product**



Electricity and district heating are predominant energy sources in the commercial and public services sector. In 2014, consumption of electricity fell by 1.3%, while consumption of district heating was 0.5% higher than the year before.

Compared with 1990, oil consumption fell by 82.8%, while natural gas consumption increased by 5.1%. In 2014, consumption of electricity and district heating was 20.9% and 35.3% higher, respectively, compared with 1990.

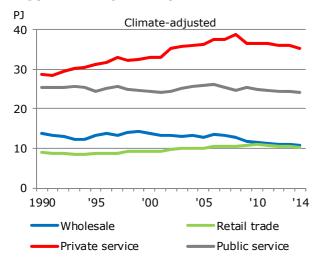
### Composition of energy consumption in the commercial and public services



In 1990, electricity and district heating together accounted for 69.6% of total energy consumption in the commercial and public services sector (electricity 39.1% and district heating 30.4%). The share of oil and natural gas was 19.3% and 9.0%, respectively, while consumption of renewable energy etc. accounted for 1.9%.

In 2014, electricity and district heating consumption together accounted for 84.7% of total energy consumption (electricity 45.3% and district heating 39.4%). The share of oil had fallen to 3.2%, while the share of natural gas was 9.0%. Renewable energy etc. was 3.0%.

### **Energy consumption by sector**

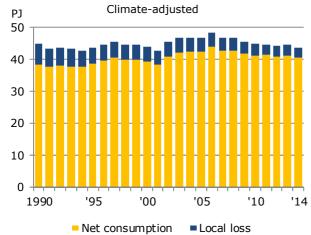


In 2014, 73.9% of energy consumption in the commercial and public services sector was in private and public services, while wholesale and retail accounted for the remaining 26.1%. From 2013 to 2014, energy consumption in private services and in public services fell by 1.8% and 1.2%, respectively, whereas in wholesale it fell by 3.6% and in retail it fell by 2.6%.

Compared with 1990, energy consumption in wholesale fell by 22.2%, while energy consumption in retail grew by 15.6%.

Energy consumption in the private service sector is higher today than in 1990. Since 1990, growth has been 22.8%. In the public service sector, energy consumption is 5.9% lower compared with 1990.

# Energy consumption for heating in the commercial and public services

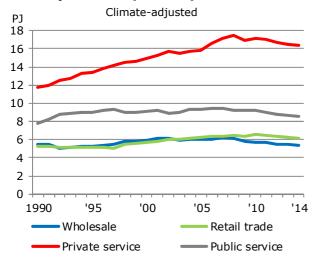


Energy consumption for heating (space heating and hot water) can be calculated in different ways. While final energy consumption is the volume of energy paid for, net energy consumption is the volume of energy utilised. The difference is local losses by the individual consumers, e.g. from oil and natural gas boilers.

Final energy consumption for heating in the commercial and public services sector was 43.8 PJ in 2014, which is 2.0% lower than the year before. Compared with 1990, consumption fell by 2.5%.

Net energy consumption was 40.4 PJ in 2014, which is 2.0% lower than the year before. Compared with 1990, net energy consumption increased by 4.9%. The increase in net energy consumption is due to the fact that the growth in the total heated area has been greater than the reduction in consumption per  $m^2$ .

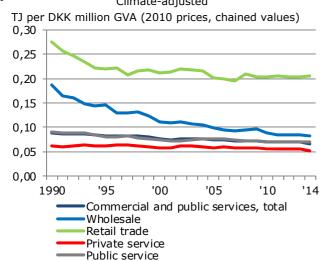
#### **Electricity consumption by sector**



Electricity consumption generally increased in the commercial and public services sector up to 2008, after which it decreased. In 2014, electricity consumption was 1.9% lower in both in wholesale and retail than in 2013. In private and public service, electricity consumption fell by 0.8% and 1.4%, respectively.

From 1990 to 2014, electricity consumption in wholesale fell by 1.5% and retail increased by 18.6%. Electricity consumption in the public service sector increased by 9.8%. In the private service sector the increase was significantly higher, reaching 39.7%.

# Energy intensities in the commercial and public services $_{Climate-adjusted}$

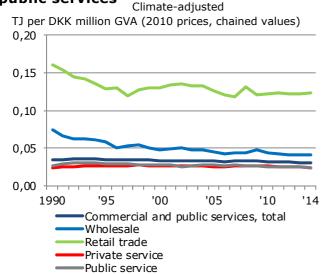


Energy intensities have been calculated as climateadjusted energy consumption in relation to gross value added (GVA), measured at 2010 prices, chained values.

Energy intensity was 0.067 in 2014, i.e. for every DKK 1 million GVA in the commercial and public services sector, 0.067 TJ of energy were used. This is 3.3% less than the year before.

Energy intensity in the commercial and public services sector fell by 25.1% from 1990 to 2014. For wholesale and retail, energy intensities fell by 56.5% and 25.4%, respectively. For the private service sector and the public service sector, intensities fell by 14.1% and 22.5%, respectively.

### Electricity intensities in commercial and public services

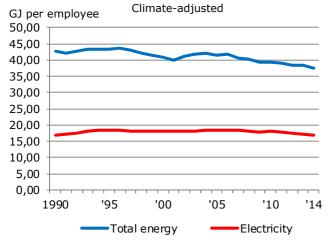


Electricity intensities have been calculated as climate-adjusted electricity consumption in relation to GVA, measured at 2010 prices, chained values.

In 2014 electricity intensity was 0.030, i.e. for every DKK 1 million GVA in the commercial and public services sector, 0.030 TJ of electricity (corresponding to 8,409 kWh) were used. Electricity intensity fell by 2.6% relative to the year before.

Electricity intensity in the commercial and public services sector fell by 13.2% from 1990 to 2014. For wholesale, retail and public services, electricity intensities fell by 44.9%, 23.5% and 9.6%, respectively. In private services, electricity intensity fell by 2.2%.

# Energy consumption per employee in the commercial and public services



Energy and electricity consumption per employee in the commercial and public services sector have developed differently than the intensities shown above. This is due to a considerable increase in productivity, measured as GVA per employee.

Energy consumption per employee was 37.4 GJ in 2014, as opposed to 38.5 GJ the year before. This corresponds to a decrease of 2.9%. Compared with 1990, energy consumption per employee fell by 12.8%.

In 2014, electricity consumption per employee was 16.9 GJ as opposed to 17.3 GJ the year before, which is a fall of 2.2%. Compared with 1990, electricity consumption per employee increased by 1.0%.

### Final energy consumption in the commercial and public services

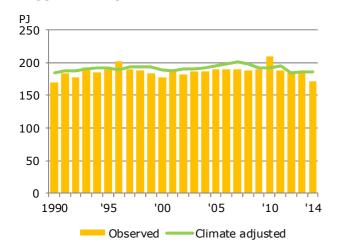
									Change
Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total commercial and public services. Climate adjusted	78 314	77 047	80 599	85 045	83 893	82 124	82 065	80 435	4.4%
Oil	38 337	14 850	5 874	4 428	2 810	2 816	2 663	2 557	-82.8%
Natural gas	-	6 902	7 739	9 989	8 977	8 567	8 831	7 251	5.1%
Coal and coke	-	98	-	-	-	-	-	-	-100%
Waste, non-renewable	263	457	691	648	163	239	225	372	-18.6%
Renewable energy	448	1 022	2 078	2 178	1 491	1 585	1 824	2 062	102%
Electricity	21 788	30 147	35 715	37 479	38 656	37 400	36 920	36 438	20.9%
District heating	17 117	23 449	28 451	30 281	31 761	31 487	31 567	31 716	35.3%
Gas works gas	361	121	52	42	35	30	34	38	-68.4%
By use									
Wholesale	19 045	13 795	13 893	12 906	11 493	11 150	11 135	10 736	-22.2%
Retail	9 702	8 883	9 323	9 991	10 939	10 592	10 544	10 272	15.6%
Private service	25 955	28 812	32 901	36 238	36 653	36 064	36 028	35 368	22.8%
Public service	23 612	25 557	24 481	25 909	24 807	24 318	24 358	24 060	-5.9%

Change

### Final energy consumption in households

Total households. Climate adjusted         204 018         185 039         189 275         194 729         191 585         184 616         186 145         186 024         0.5% Ol.9% Ol.9%           Oil         121 022         58 998         35 444         27 617         18 595         14 772         13 925         11 415         -80.7%           Natural gas         -         17 877         29 329         29 993         27 761         26 490         26 588         25 959         45.2%           Coal and coke         2 498         830         49         8         28         24         18         0         -99.9%           Renewable energy         10 305         17 434         22 052         33 279         39 444         38 997         39 806         42 599         144%           Electricity         28 388         35 696         37 339         37 810         36 788         35 887         37 046         36 908         3.4%           District heating         37 649         52 820         64 466         65 536         68 612         68 102         68 277         68 704         30.1%           Gas works gas         4 157         1 384         594         486         408         345         394										
Climate adjusted         204 018         185 039         189 275         194 729         191 585         184 116         185 125         185 024         0.5%           Oil         121 022         58 998         35 444         27 617         18 595         14 772         13 925         11 415         -80.7%           Natural gas         -         17 877         29 329         29 993         27 761         26 490         26 588         25 959         45.2%           Coal and coke         2 498         830         49         29 93         37 761         26 490         26 588         25 959         45.2%           Coal and coke         2 498         830         49         29 93         37 444         38 997         39 896         42 599         144%           Electricity         28 388         35 696         37 339         37 810         36 812         68 102         68 217         68 704         30 1%           Gas works gas         4 157         1 384         594         486         408         345         394         438         -68.4%           Single-family houses         155 706         137 383         139 568         144 258         140 88         134 509         13 18         15	Direct energy content [TJ]	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Natural gas  - 17 877 29 329 29 993 27 761 26 490 26 588 25 959 45.2% Coal and coke 2 498 830 49 8 28 24 18 0 -99.9% Renewable energy 10 305 17 434 22 052 33 279 39 444 38 997 39 896 42 599 144% Electricity 28 388 35 696 37 339 37 810 36 738 35 887 37 046 36 908 3.4% District heating 37 649 52 820 64 466 65 536 68 612 68 102 68 277 68 704 30.1% Gas works gas 4 157 1 384 594 486 408 345 394 438 -68.4% Single-family houses 155 706 137 383 139 568 144 258 140 888 134 509 136 118 135 756 -1.2% Oil 102 281 52 233 32 741 25 032 16 910 13 078 12 314 9 693 -81.4% Natural gas - 15 143 24 907 25 472 23 554 22 455 22 450 21 909 44.7% Coal and coke 1 249 136 17 00 13 3 7 389 14 42 514 144% Electricity 21 431 27 011 28 210 28 279 27 335 26 627 27 994 27 870 3.2% District heating 18 190 24 685 31 364 31 985 33 486 33 238 33 233 33 532 35.8% Multi-family houses 24 28 38 35 696 31 32 8 35 8 16 8 50 16 50 027 50 268 5.5% Oil 18 74 656 2703 25 85 1 685 1 693 1 611 1 723 -74.5% Multi-family houses 48 312 47 656 49 706 50 471 50 696 50 106 50 027 50 268 5.5% Oil Renewable energy 8 14 42 573 44 22 4 522 4 207 4 036 4 138 4 050 48.2% Coal and coke 1 249 693 32 8 15 1685 1 693 1 611 1 723 -74.5% Multi-family houses 48 312 47 656 49 706 50 471 50 696 50 106 50 027 50 268 5.5% Oil Renewable energy 8 693 32 8 15 1685 1 693 1 611 1 723 -74.5% Multi-family houses 9 2 7 7 33 2 80 2 80 2 80 2 80 2 80 2 80 2 80 2	Total households. Climate adjusted	204 018	185 039	189 275	194 729	191 585	184 616	186 145	186 024	0.5%
Coal and coke         2 498         830         49         8         28         24         18         0         -99.9%           Renewable energy         10 305         17 434         22 052         33 279         39 444         38 997         39 896         42 599         144%           Electricity         28 388         35 696         37 339         37 810         36 738         35 887         37 046         36 908         3.4%           District heating         37 649         52 820         64 466         65 536         68 612         68 102         68 277         68 704         30.1%           Gas works gas         4 157         1 384         594         486         408         345         394         438         -68.4%           Single-family houses         155 706         137 383         139 568         144 258         140 888         134 509         136 118         135 756         -1.2%           Oil         102 281         52 233         32 741         25 032         16 910         13 078         12 314         9 693         -81.4%           Natural gas         -         15 143         24 907         25 472         23 554         22 455         22 450         21 909	Oil	121 022	58 998	35 444	27 617	18 595	14 772	13 925	11 415	-80.7%
Renewable energy  10 305 17 434 22 052 33 279 39 444 38 997 39 896 42 599 144% Electricity  28 388 35 696 37 339 37 810 36 738 35 887 37 046 36 908 3.4% District heating  37 649 52 820 64 466 65 536 68 612 68 102 68 277 68 704 30.1% Gas works gas  4 157 1 384 594 486 408 345 394 438 -68.4%  Single-family houses  155 706 137 383 139 568 144 258 140 888 134 509 136 118 135 756 -1.2% Oil  102 281 52 233 32 741 25 032 16 910 13 078 12 314 9 693 -81.4% Natural gas  - 15 143 24 907 25 472 23 554 22 455 22 450 21 909 44.7% Coal and coke  1 249 136 17 0 13 77 9 0 -99.8% Renewable energy  10 298 17 420 22 006 33 226 39 370 38 917 39 814 42 514 144% Electricity  21 431 27 011 28 210 28 279 27 335 26 627 27 994 27 870 3.2% District heating  18 190 24 685 31 364 31 985 33 486 33 238 33 323 35 532 35.8% Gas works gas  2 258 754 323 264 221 188 214 238 -68.4%  Multi-family houses  48 312 47 656 49 706 50 471 50 696 50 106 50 027 50 268 5.5% Oil  18 740 6 766 2 703 2 585 1 685 1 693 1 611 1 723 -74.5% Natural gas  - 2 733 4 422 4 522 4 207 4 036 4 138 4 050 48.2% Coal and coke  1 249 693 32 8 15 169 9 0 -100% Renewable energy  8 14 486 9 4 74 80 83 8 97 98 9 50 9 90 90 90 90 90 90 90 90 90 90 90 90	Natural gas	-	17 877	29 329	29 993	27 761	26 490	26 588	25 959	45.2%
Electricity         28 388         35 696         37 339         37 810         36 738         35 887         37 046         36 908         3.4%           District heating         37 649         52 820         64 466         65 536         68 612         68 102         68 277         68 704         30.1%           Gas works gas         4 157         1 384         594         486         408         345         394         438         -68.4%           Single-family houses         155 706         137 383         139 568         144 258         140 888         134 509         136 118         135 756         -1.2%           Oil         102 281         52 233         32 741         25 032         16 910         13 078         12 314         9 693         -81.4%           Natural gas         -         15 143         24 907         25 472         23 554         22 455         22 450         21 909         44.7%           Coal and coke         1 249         136         17         0         13         7         9         0         -99.8%           Renewable energy         10 298         17 420         22 006         33 226         39 370         38 917         39 814         42 514	Coal and coke	2 498	830	49	8	28	24	18	0	-99.9%
District heating 37 649 52 820 64 466 65 536 68 612 68 102 68 277 68 704 30.1% Gas works gas 4 157 1 384 594 486 408 345 349 438 -68.4% Single-family houses 155 706 137 383 139 568 144 258 140 888 134 509 136 118 135 756 -1.2% Oil 102 281 52 23 32 741 25 032 16 91 13 078 12 314 9 693 41.7% Abutural gas 15 144 27 15 143 24 907 25 472 23 554 22 455 22 450 21 909 44.7% Coal and coke 1 249 136 17 0 13 078 37 9 0 90 -99.8% Renewable energy 10 298 17 420 22 006 33 226 39 370 38 917 39 814 42 514 144% Electricity 21 431 27 011 28 210 28 279 27 335 26 627 27 994 27 870 3.2% District heating 18 190 24 685 31 364 31 985 33 486 33 238 33 323 33 532 35.8% Gas works gas 2 258 754 323 264 221 188 214 238 -68.4% Multi-family houses 48 312 47 656 49 706 50 471 50 696 50 106 50 027 50 268 5.5% Oil 18 740 6 766 2 703 2 585 1 685 1 693 1 611 1 723 -74.5% Natural gas 2 3 3 4 422 4 522 4 207 4 036 4 138 4 050 48.2% Coal and coke 1 249 693 32 8 15 168 1 693 1 611 1 723 -74.5% Natural gas 2 3 3 3 3 3 8 3 8 5 50 2% Electricity 6 957 8 686 9 129 9 530 9 403 9 260 9 3 52 9 0 9 3 9 4.1% District heating 19 459 28 135 33 103 33 550 3 5 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 3 5 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 3 5 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 35 35 35 15 35 18 864 34 954 35 173 25.0% District heating 19 459 28 135 33 103 33 35 35 15 15 18 48 48 48 48 48 48 48 48 48 48 48 48 4	Renewable energy	10 305	17 434	22 052	33 279	39 444	38 997	39 896	42 599	144%
Gas works gas         4 157         1 384         594         486         408         345         394         438         -68.4%           Single-family houses         155 706         137 383         139 568         144 258         140 888         134 509         136 118         135 756         -1.2%           Oil         102 281         52 233         32 741         25 032         16 910         13 078         12 314         9 693         -81.4%           Natural gas         - 15 143         24 907         25 472         23 554         22 455         22 450         21 909         44.7%           Coal and coke         1 249         136         17         0         13         7         9         0         -99.8%           Renewable energy         10 298         17 420         22 006         33 226         39 370         38 917         39 814         42 514         144%           Electricity         21 431         27 011         28 210         28 279         27 335         26 627         27 994         27 870         3.2%           District heating         18 190         24 685         31 364         31 985         33 486         33 238         33 323         33 533         33 533	Electricity	28 388	35 696	37 339	37 810	36 738	35 887	37 046	36 908	3.4%
Single-family houses         155 706         137 383         139 568         144 258         140 888         134 509         136 118         135 756         -1.2%           Oil         102 281         52 233         32 741         25 032         16 910         13 078         12 314         9 693         -81.4%           Natural gas         - 15 143         24 907         25 472         23 554         22 455         22 450         21 909         44.7%           Coal and coke         1 249         136         17         0         13         7         9         0         -99.8%           Renewable energy         10 298         17 420         22 006         33 226         39 370         38 917         39 814         42 514         144%           Electricity         21 431         27 011         28 210         28 279         27 335         26 627         27 994         27 870         3.2%           District heating         18 190         24 685         31 364         31 985         33 486         33 238         33 323         33 532         35.8%           Gas works gas         2 258         754         323         264         221         188         214         238         -68.4%	District heating	37 649	52 820	64 466	65 536	68 612	68 102	68 277	68 704	30.1%
Oil         102 281         52 233         32 741         25 032         16 910         13 078         12 314         9 693         -81.4%           Natural gas         -         15 143         24 907         25 472         23 554         22 455         22 450         21 909         44.7%           Coal and coke         1 249         136         17         0         13         7         9         0         -99.8%           Renewable energy         10 298         17 420         22 006         33 226         39 370         38 917         39 814         42 514         144%           Electricity         21 431         27 011         28 210         28 279         27 335         26 627         27 994         27 870         3.2%           District heating         18 190         24 685         31 364         31 985         33 486         33 238         33 323         33 532         35.8%           Gas works gas         2 258         754         323         264         221         188         214         238         -68.4%           Multi-family houses         48 312         47 656         49 706         50 471         50 696         50 106         50 027         50 268         5.5%<	Gas works gas	4 157	1 384	594	486	408	345	394	438	-68.4%
Natural gas  - 15 143	Single-family houses	155 706	137 383	139 568	144 258	140 888	134 509	136 118	135 756	-1.2%
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District heating  18 190  24 685  31 364  31 985  33 486  33 238  33 323  33 532  35.8%  Gas works gas  2 258  754  323  264  221  188  214  238  -68.4%  Multi-family houses  48 312  47 656  49 706  50 471  50 696  50 106  50 027  50 268  5.5%  Oil	Renewable energy	10 298	17 420	22 006	33 226	39 370	38 917	39 814	42 514	144%
Gas works gas         2 258         754         323         264         221         188         214         238         -68.4%           Multi-family houses         48 312         47 656         49 706         50 471         50 696         50 106         50 027         50 268         5.5%           Oil         18 740         6 766         2 703         2 585         1 685         1 693         1 611         1 723         -74.5%           Natural gas         -         2 733         4 422         4 522         4 207         4 036         4 138         4 050         48.2%           Coal and coke         1 249         693         32         8         15         16         9         0         -100%           Renewable energy         8         14         46         54         74         80         83         85         502%           Electricity         6 957         8 686         9 129         9 530         9 403         9 260         9 052         9 039         4.1%           District heating         19 459         28 135         33 103         33 550         35 125         34 864         34 954         35 173         25.0%	Electricity	21 431	27 011	28 210	28 279	27 335	26 627	27 994	27 870	3.2%
Multi-family houses         48 312         47 656         49 706         50 471         50 696         50 106         50 027         50 268         5.5%           Oil         18 740         6 766         2 703         2 585         1 685         1 693         1 611         1 723         -74.5%           Natural gas         -         2 733         4 422         4 522         4 207         4 036         4 138         4 050         48.2%           Coal and coke         1 249         693         32         8         15         16         9         0         -100%           Renewable energy         8         14         46         54         74         80         83         85         502%           Electricity         6 957         8 686         9 129         9 530         9 403         9 260         9 052         9 039         4.1%           District heating         19 459         28 135         33 103         33 550         35 125         34 864         34 954         35 173         25.0%	District heating	18 190	24 685	31 364	31 985	33 486	33 238	33 323	33 532	35.8%
Oil       18 740       6 766       2 703       2 585       1 685       1 693       1 611       1 723       -74.5%         Natural gas       -       2 733       4 422       4 522       4 207       4 036       4 138       4 050       48.2%         Coal and coke       1 249       693       32       8       15       16       9       0       -100%         Renewable energy       8       14       46       54       74       80       83       85       502%         Electricity       6 957       8 686       9 129       9 530       9 403       9 260       9 052       9 039       4.1%         District heating       19 459       28 135       33 103       33 550       35 125       34 864       34 954       35 173       25.0%	Gas works gas	2 258	754	323	264	221	188	214	238	-68.4%
Natural gas       -       2 733       4 422       4 522       4 207       4 036       4 138       4 050       48.2%         Coal and coke       1 249       693       32       8       15       16       9       0       -100%         Renewable energy       8       14       46       54       74       80       83       85       502%         Electricity       6 957       8 686       9 129       9 530       9 403       9 260       9 052       9 039       4.1%         District heating       19 459       28 135       33 103       33 550       35 125       34 864       34 954       35 173       25.0%	Multi-family houses	48 312	47 656	49 706	50 471	50 696	50 106	50 027	50 268	5.5%
Coal and coke       1 249       693       32       8       15       16       9       0       -100%         Renewable energy       8       14       46       54       74       80       83       85       502%         Electricity       6 957       8 686       9 129       9 530       9 403       9 260       9 052       9 039       4.1%         District heating       19 459       28 135       33 103       33 550       35 125       34 864       34 954       35 173       25.0%	Oil	18 740	6 766	2 703	2 585	1 685	1 693	1 611	1 723	-74.5%
Renewable energy 8 14 46 54 74 80 83 85 502% Electricity 6 957 8 686 9 129 9 530 9 403 9 260 9 052 9 039 4.1% District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0%	Natural gas	-	2 733	4 422	4 522	4 207	4 036	4 138	4 050	48.2%
Electricity 6 957 8 686 9 129 9 530 9 403 9 260 9 052 9 039 4.1%  District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0%	Coal and coke	1 249	693	32	8	15	16	9	0	-100%
District heating 19 459 28 135 33 103 33 550 35 125 34 864 34 954 35 173 25.0%	Renewable energy	8	14	46	54	74	80	83	85	502%
	Electricity	6 957	8 686	9 129	9 530	9 403	9 260	9 052	9 039	4.1%
Gas works gas 1 899 630 271 222 187 158 180 199 -68.4%	District heating	19 459	28 135	33 103	33 550	35 125	34 864	34 954	35 173	25.0%
	Gas works gas	1 899	630	271	222	187	158	180	199	-68.4%

#### **Energy consumption in households**

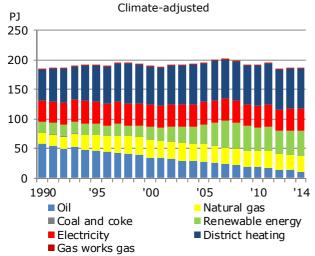


Household energy consumption is greatly influenced by the weather. The years 1990, 2000 and 2014 were very hot years with low energy consumption, whereas 1996 and 2010 were exceptionally cold.

In 2014 climate-adjusted energy consumption by households was 186.0 PJ, accounting for 30.6% of total final energy consumption in Denmark. 153.5 PJ of the 186.0 PJ was used for heating and 32.5 PJ were used for electrical appliances etc.

The climate-adjusted energy consumption of households was 0.1% lower in 2014 than the year before. Compared with 1990, energy consumption fell by 0.5%.

## Household consumption by energy products

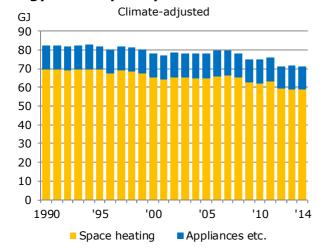


There have been significant changes in the composition of household energy consumption since 1990. Oil consumption decreased throughout the period shown due to a shift to district heating and natural gas. Firewood and wood pellets consumption has increased significantly since 2000.

In 2014 district heating amounted to 36.9% of household energy consumption, and renewable energy and electricity amounted to 22.9% and 19.8%, respectively. Consumption of natural gas, oil and gas works gas amounted to 14.0%, 6.1% and 0.2%, respectively.

Household electricity consumption increased significantly from 1980 to the early 1990s, and subsequently remained more or less constant until 2000. Electricity consumption showed an increasing trend from 2002 to 2006, whereas consumption in the period from 2009 to 2014 has fluctuated around 36 and 37 PJ. Electricity consumption fell by 0.4% in 2014 compared with 2013.

#### **Energy consumption per household**

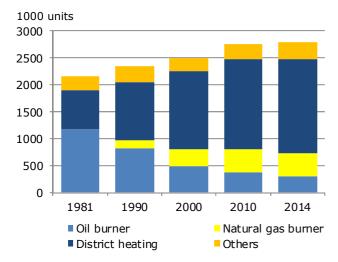


In 2014, average energy consumption per household was 71.2 GJ, which is 0.6% lower than the year before. Of this, 58.8 GJ were used for space heating and hot water, corresponding to the energy content in 1638 litres of heating oil. Energy consumption by households went down by 13.6% compared with 1990.

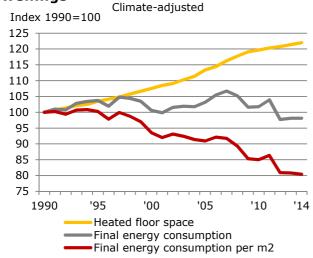
In 2014, average electricity consumption per household for electrical appliances and lighting was 12.3 GJ, corresponding to approximately 3405 kWh. This is 1.0% less than the year before and 4.9% more than in 1990.

Households also consume a small amount of motor gasoline for garden tools etc., LPG (bottled gas) and gas works gas for other purposes. Consumption of motor gasoline and diesel oil for household vehicles has been included under road transport.

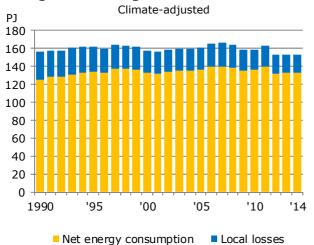
### Heating installations in dwellings



Energy consumption for heating in dwellings



Net energy consumption and heat loss for heating in dwellings



The significant changes in the composition of energy consumption by energy type reflect changes in the composition of heating installations in dwellings over time. Until the mid-1980s, oil-fired boilers clearly dominated the market, after which district heating became the most common source of heating. Thus since the late 1980s and during the 1990s, the number of district heating installations and natural gas boilers continued to increase at the cost of oil-fired boilers.

As at 1 January 2014, the total of 2.79 million heating installations could be analysed as follows: District heating installations 63.2%, natural gas boilers 15.4%, oil-fired boilers 10.7% and other installations, including heat pumps, electric heating and wood-fired boilers 10.7%.

Source: Statistics Denmark

In the period 1990 to 2011, climate-adjusted energy consumption for heating (space heating and hot water) has been between 0.1% and 7.6% above the 1990 level. Since then, energy consumption has been below the 1990 level. In 2013 and 2014, energy consumption was 1.9% lower compared with 1990.

The background for this is a 22.0% increase in total heated area in the period from 1990 to 2014.

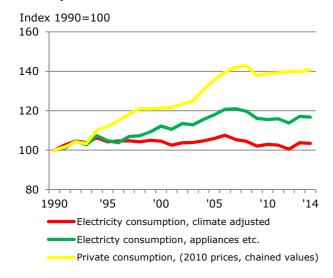
In the period 1990 to 2014, energy consumption for heating per  $m^2$  fell by 19.6%. This fall can be explained by improvements in the insulation of older dwellings as well as a shift away from old oil-fired boilers to more efficient natural gas boilers and district heating installations. In addition, according to the building regulations, new homes must have lower energy consumption per  $m^2$  than existing homes.

Net energy consumption means the energy utilised. The difference between final energy consumption and net energy consumption is local heat loss in individual dwellings, e.g. from oil and natural gas boilers.

While final consumption for heating as mentioned fell by 1.9% from 1990 to 2014, net energy consumption for space heating and hot water in households increased by 5.8% in the same period.

The different trend is due to the shift from oil heating to district heating and later also to natural gas heating, where the local losses are considerably smaller. The increase in net energy consumption is due to the fact that the growth in the total heated area has been greater than the reduction in consumption per m<sup>2</sup>.

### Private consumption and electricity consumption in households

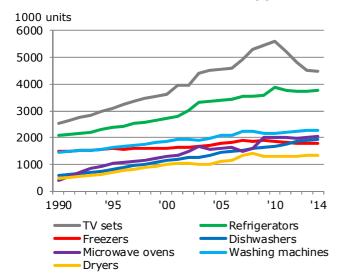


In the period 1990-2014, total household electricity consumption increased by 3.4%, whereas electricity consumption for appliances and lighting etc. increased by 16.7%. This big difference is due to a significant fall in electricity consumption for heating.

Taking into account the large increase in the number of electrical appliances per household, see below, and a general increase of 40.8% in total private consumption, i.e. considerably larger growth than in electricity consumption for appliances and lighting etc., this may seem as a surprise.

This is due to significant falls in the specific electricity consumption of electrical appliances, see below.

#### Household stock of electrical appliances

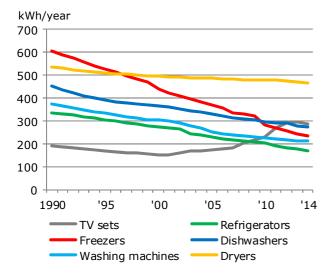


The past 20 years and more have seen a sharp increase in the stock of almost all electricity-consuming household appliances.

For instance, since 1990 the number of microwaves has increased by 436%, while the number of tumble dryers and dishwashers has increased by 192% and 242%, respectively. Television sets, washing machines and refrigerators have also increased considerably in numbers. With an increase of 20.0%, separate freezers have seen a more moderate growth.

Source: ElmodelBOLIG

## Specific electricity consumption of household appliances



Ceteris paribus, the trend in the stock of appliances should lead to a considerable increase in electricity consumption. The reason that this has not happened is particularly due to a significant improvement in the average specific electricity consumption (kWh/year) of appliances in the same period.

For example, the average annual electricity consumption of a refrigerator fell from 336 kWh in 1990 to 172 kWh in 2014, i.e. by 49.0%. Electricity consumption for a separate freezer fell by 61.5%, while the fall for a washing machine was 43.4% in the same period. Other electrical appliances, apart from television sets, have also experienced considerable reductions in average specific annual consumption.

Source: ElmodelBOLIG

#### CO<sub>2</sub> accounts and statements for other greenhouse gases

CO<sub>2</sub> accounts are used along with statements for the other greenhouse gas emissions in order to e.g. monitor developments with regard to international greenhouse gas emission reduction targets. Denmark's international climate commitment means that, in accordance with the EU Effort Sharing Decision (ESD), by 2020 Denmark must have reduced emissions of greenhouse gases from the sectors not covered by the EU Emissions Trading System (ETS) by 20% in relation to the base year, 2005. In 2010 the base year was determined in relation to emissions outside the ETS in 2005 for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O and the fluorinated greenhouse gases (the F-gases). Furthermore, annual permitted non-ETS emissions have been set under the ESD for the period 2013-2020, and in 2013 this was 36.8 million tonnes CO<sub>2</sub> equivalents.

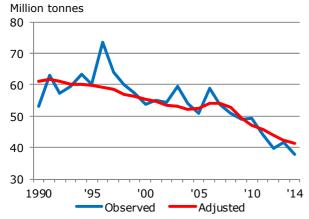
In 2013, observed total emissions of greenhouse gases were 55.0 million tonnes  $CO_2$  equivalents, which is 21.9% lower than in 1990. Including adjustments in the Energy Statistics for fluctuations in temperature and net exports of electricity, the level in 2013 was 55.8 million tonnes  $CO_2$  equivalents, corresponding to a drop of 28.9% relative to the adjusted emissions in

1990. In 2013, total observed emissions of greenhouse gases outside the ETS (ESD) were 33.5 million tonnes  $CO_2$  equivalents, which is 12.2% lower than the 2005 base-year emissions and 3.4 million tonnes  $CO_2$  equivalents lower than the emissions permitted under the ESD for 2013.

The greenhouse gas inventory for 2014 will be ready in 2016. The overall greenhouse gas accounts include both CO2 emissions from energy use (excluding emissions from international aviation and the effect of border trade in motor gasoline and diesel oil - unlike the separate CO<sub>2</sub> accounts in the Energy Statistics) and CO2 emissions from other sources (flaring of gas in the North Sea and certain industrial processes). Emissions of five other greenhouse gases are also included in the commitment: methane (CH<sub>4</sub>), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride ( $SF_6$ ), which are converted to  $CO_2$  equivalents. Reductions achieved in connection with certain carbon removals by forests and soils, as well as from projects in other countries (JI and CDM projects) must also be stated in the climate accounts under the Kyoto Protocol.

Source: Danish Energy Agency and DCE, Danish Centre for Environment and Energy

### CO<sub>2</sub> emissions from energy consumption

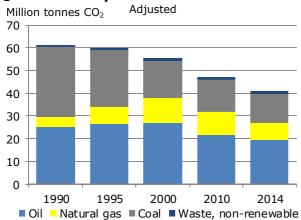


The Danish Energy Agency calculates observed  $CO_2$  emissions as well as adjusted  $CO_2$  emissions, which take annual temperature variations and foreign trade in electricity into account, see the statement of energy consumption on pages 18 and 19. The purpose of the adjusted calculations is to illustrate the trends underlying the development.

In 2014, observed  $CO_2$  emissions from energy consumption were 37.7 million tonnes, which is 9.3% lower than in 2013. Observed  $CO_2$  emissions dropped by 28.9% compared with 1990.

Adjusted  $CO_2$  emissions from energy consumption fell to 41.2 million tonnes in 2014; a drop of 2.7% compared with the previous year. Compared with 1990, the drop is 32.6%.

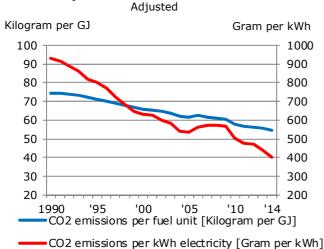
#### CO<sub>2</sub> emissions by fuel



Since 1990, there has been a significant shift in energy consumption analysed by fuel. Consumption of natural gas and renewable energy has increased at the expense of consumption of oil and coal.

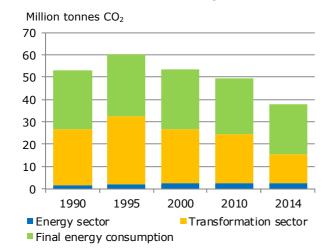
This shift in fuels has led to a reduction in  $CO_2$  emissions, as consumption of oil and coal entails greater  $CO_2$  emissions than consumption of natural gas and renewable energy. While gross energy consumption has fallen by 7.8% since 1990, adjusted  $CO_2$  emissions have fallen by 32.6%.

## CO<sub>2</sub> emissions per fuel unit and per kWh electricity

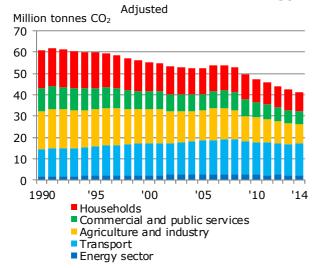


Observed CO<sub>2</sub> emissions by sector

(right axis)



CO<sub>2</sub> emissions from end-use of energy



The figure for gross energy consumption until 2014 has fallen by 7.8% compared with 1990, whereas the breakdown by fuel has changed significantly. As a result of the shift from oil and coal to natural gas and renewable energy, still less  $CO_2$  is emitted for each unit of fuel consumed. In 2014, each GJ of adjusted gross energy consumption was linked to 54.5 kg  $CO_2$ , as opposed to 74.5 kg in 1990. This corresponds to a reduction of 26.8%.

One kWh of electricity sold in Denmark in 2014 led to 401 grams of  $CO_2$  emissions. In 1990,  $CO_2$  emissions were 928 grams per kWh of electricity sold. This corresponds to a reduction of more than 50%. The reasons for this large reduction are shifts to other fuels in electricity production as well as the ever increasing significance of wind power.

The energy system is divided into three sectors: The energy sector (extraction and refining), the transformation sector (production of electricity, district heating, and gas works gas), and final consumption (transport and consumption by households and industries).

In 1990, total observed  $CO_2$  emissions were 53.0 million tonnes. Of these, 25.1 million tonnes came from the transformation sector and 26.5 million tonnes came from final energy consumption, while the energy sector emitted 1.4 million tonnes.

In 2014, total observed  $CO_2$  emissions were 37.7 million tonnes, of which 13.4 million tonnes were from the transformation sector, 22.1 million tonnes were from final energy consumption, and 2.3 million tonnes were from the energy sector. The transformation sector saw a fall of 11.8 million tonnes of  $CO_2$  from 1990 to 2014, although electricity and district heating production grew significantly in this period.

Breaking down  $CO_2$  emissions from production of electricity, district heating, and gas works gas by end consumer provides a picture of how total emissions of  $CO_2$  can be allocated to the energy sector, transport, industry and households.

In 2014, the transport and the agriculture and industry sectors were responsible for the largest shares of total  $CO_2$  emissions, with 35.6% and 22.6%, respectively. Households and the commercial and public services sector accounted for 21.7% and 14.3%, respectively, while the energy sector accounted for 5.9% of  $CO_2$  emissions.

Compared with 1990,  $CO_2$  emissions from transport increased by 16.1%. Industries and households have seen significant decreases. In the agriculture and industry sector, and the commercial and public service sectors,  $CO_2$  emissions fell by 47.8% and 45.8% respectively, while for households they fell by 50.7%.

#### Observed CO<sub>2</sub> emissions from energy consumption

1000 tonnes									Change
Observed emissions	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total CO <sub>2</sub> emissions	64 159	53 048	53 579	50 854	49 380	39 847	41 562	37 707	-28.9%
By fuel	64 159	53 048	53 579	50 854	49 380	39 847	41 562	37 707	-28.9%
Oil	40 030	24 180	26 213	24 199	22 066	20 029	19 649	19 347	<b>-</b> 20.0%
Natural gas	1	4 323	10 629	10 676	10 572	8 415	7 778	6 823	57.8%
Coal	23 734	23 972	15 612	14 582	15 331	10 021	12 749	10 105	-57.8%
Waste, non-renewable	394	573	1 124	1 398	1 410	1 382	1 386	1 433	150%
By sector	64 159	53 048	53 579	50 854	49 380	39 848	41 562	37 707	-28.9%
Energy sector	888	1 401	2 322	2 439	2 323	2 364	2 278	2 277	62.6%
Transformation sector	30 026	25 129	24 211	21 124	21 944	14 500	16 778	13 361	-46.8%
Electricity production	23 824	20 556	20 160	17 227	17 665	10 860	13 247	10 300	-49.9%
District heating production	5 638	4 472	4 009	3 864	4 245	3 608	3 495	3 022	-32.4%
Gas works gas production	564	101	42	33	35	32	36	39	-61.4%
Final energy consumption	33 246	26 519	27 046	27 291	25 112	22 984	22 506	22 069	-16.8%
Transport	10 439	12 418	14 637	15 708	15 192	14 317	14 126	14 485	16.7%
Agriculture and industry	10 404	7 774	7 573	7 020	5 827	5 300	5 087	4 904	-36.9%
Commercial and public services	2 965	1 406	868	922	803	723	721	575	-59.1%
Households	9 438	4 922	3 967	3 641	3 292	2 645	2 573	2 105	-57.2%

**Observed CO<sub>2</sub> emissions** have been calculated on the basis of observed energy consumption as shown in the energy balance on page 4. By using emission factors specific to fuel, energy consumption is

converted to  $\text{CO}_2$  emissions. The emission factors applied are shown on page 59. Renewable energy, including renewable waste, is not linked to  $\text{CO}_2$  emissions in the calculations.

### CO<sub>2</sub> emissions from energy consumption, adjusted\*)

1000 tonnes									Change
Adjusted emissions	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Total CO <sub>2</sub> emissions	62 449	61 023	55 329	52 401	47 016	43 885	42 301	41 156	-32.6%
By fuel	62 449	61 023	55 329	52 401	47 016	43 885	42 301	41 156	-32.6%
Oil	39 367	25 035	26 732	24 472	21 766	20 151	19 662	19 564	-21.9%
Natural gas	1	4 646	10 961	10 955	10 054	8 566	7 781	7 273	56.5%
Coal	22 690	30 758	16 500	15 570	13 798	13 788	13 473	12 874	-58.1%
Waste, non-renewable	392	583	1 136	1 403	1 398	1 380	1 385	1 445	148%
By sector	62 449	61 023	55 329	52 401	47 016	43 885	42 301	41 156	-32.6%
Energy sector	888	1 401	2 322	2 439	2 323	2 364	2 278	2 277	62.6%
Transformation sector	28 702	32 248	25 452	22 487	20 110	18 595	17 560	16 456	-49.0%
Electricity production	22 664	27 064	20 962	18 409	16 569	15 046	14 100	12 738	-52.9%
District heating production	5 484	5 077	4 445	4 045	3 509	3 517	3 424	3 677	-27.6%
Gas works gas production	553	108	45	33	32	31	36	41	-62.0%
Final energy consumption	32 859	27 374	27 554	27 474	24 583	22 927	22 463	22 423	-18.1%
Transport	10 439	12 418	14 637	15 708	15 192	14 317	14 126	14 485	16.7%
Agriculture and industry	10 339	7 952	7 686	7 061	5 708	5 287	5 077	4 985	-37.3%
Commercial and public services	2 895	1 542	934	949	727	714	714	630	-59.2%
Households	9 187	5 462	4 298	3 756	2 956	2 610	2 546	2 323	-57.5%

<sup>\*)</sup> Adjusted for fuel consumption linked to net import of electricity, as well as for temperature fluctuations.

**Adjusted CO<sub>2</sub> emissions** have been calculated on the basis of adjusted gross energy consumption as shown in the table on page 20. In this statement, energy consumption has been adjusted for temperature fluctuations relative to a normal weather year and fuel

consumption linked to foreign trade in electricity. In cold years or years with net electricity exports, the adjustment is therefore negative, while in warmer years or years with net imports of electricity, the adjustment is positive.

Change

#### Total emissions of greenhouse gases

										Change
1000 tonnes CO2 equivalents	Base year	1990	1995	2000	2005	2010	2011	2012	2013	'90-'13 <sup>1)</sup>
Observed emissions in total <sup>2)</sup>	-	70 515	78 383	70 687	66 235	63 013	57 919	53 088	55 049	-21.9%
- ETS excl. aviation (ETS) 3)	-	-	-	-	26 476	25 266	21 466	18 186	21 602	-18.4%
- Domestic aviation, ETS 3)	-	-	-	-	-	-	-	146	140	•
- Non-ETS (ESD) 3)	38 127	-	-	-	39 759	37 746	36 453	34 756	33 307	-12.6%
Observed net emissions in total 4	-	77 287	83 429	75 452	72 343	66 058	58 714	55 358	57 439	-25.7%
Emissions from energy consumption		51 881	59 885	52 440	49 906	48 471	43 398	38 824	40 618	-21.7%
Energy and transformation sector		26 248	32 567	26 046	23 149	24 015	20 066	16 777	19 006	-27.6%
Final energy consumption		25 633	27 318	26 395	26 757	24 456	23 332	22 047	21 612	-15.7%
- Transport		10 919	12 430	12 482	13 623	13 330	13 085	12 386	12 181	11.6%
- Agriculture and industry		5 517	5 996	6 115	5 623	4 589	4 556	4 286	4 195	-24.0%
- Commercial and public services and households		9 196	8 892	7 798	7 511	6 536	5 691	5 374	5 236	-43.1%
Industrial process, flaring etc.		2 857	3 577	4 718	3 665	2 600	2 595	2 486	2 520	-11.8%
Transient emissions and flaring		516	698	1 088	876	567	420	367	387	-25.0%
Industrial process		2 341	2 878	3 630	2 790	2 033	2 175	2 119	2 133	-8.9%
Emissions from agriculture		12 489	11 892	10 897	10 452	10 082	10 080	10 035	10 148	-18.7%
Animals digestion		3 799	3 703	3 389	3 242	3 392	3 363	3 443	3 467	-8.7%
Animal manure		2 707	2 938	3 040	3 145	2 794	2 776	2 727	2 673	-1.2%
Agricultural land		5 983	5 252	4 468	4 065	3 896	3 941	3 864	4 009	-33.0%
Other emissions		2 041	1 853	1 725	1 454	1 288	1 324	1 255	1 298	-36.4%
Waste deposit		1 774	1 556	1 276	1 099	931	925	879	844	-52.4%
Sewage treatment		200	207	194	190	184	187	182	187	-6.8%
Other waste		67	90	255	165	173	212	195	267	301%
Forestry and land use 5)		6 772	5 046	4 765	6 109	3 046	795	2 271	2 390	•
Forestry		368	- 699	- 496	894	-1 842	-3 869	-2 390	-2 310	•
Land use		6 404	5 746	5 261	5 215	4 888	4 664	4 661	4 700	•
Indirect CO <sub>2</sub> -emissions		1 247	1 175	906	758	572	521	489	465	-62.7%

Note 1: This table only includes Denmark's emissions and removal of greenhouse gases. In the total climate accounts in relation to the Kyoto Protocol, credits that are part of the  $CO_2$  removal under "Forestry and land use", credits from reductions achieved through projects in other countries and purchases of emission allowance, must also be included. The base year stated is the non-ETS emissions set in 2010 for 2005.

#### Observed and adjusted emissions of greenhouse gases

								Change
1000 tonnes CO₂ equivalents	1990	2000	2005	2010	2012	2013	2014*	'90 - '14
Observed emissions, total 1)	70 515	70 687	66 235	63 013	53 088	55 049	51 194	-27.4%
Adjusted emissions, total 1)	78 489	72 436	67 781	60 649	57 125	55 788	54 643	-30.4%

Note 1: See note 1 above.

Note 2: Denmark's greenhouse gas inventory must be reported internationally without adjustments for fluctuations in climate or fuel consumption linked to foreign trade in electricity. The adjusted greenhouse gas inventory can only be used to illustrate the effect of initiatives and other national impacts influencing CO<sub>2</sub> emissions connected to Denmark's own energy consumption.

1) See 2) above.

<sup>1)</sup> The changes have been stated in relation to 1990, except for the figures split between ETS and non-ETS (ESD), in which the changes have been stated in relation to 2005, as the split is only available from 2005. For non-ETS (ESD), the change has been stated in relation to the 2005 base year set in 2010. The change in the non-ETS analysis for 2005 is due to new methods of calculation from the UN Intergovernmental Panel on Climate Change (IPCC).

<sup>2)</sup> Total emissions without the contribution from "Forestry and land use", as only a part of this is to be included in the climate accounts in the Kyoto Protocol.

<sup>3)</sup> CO<sub>2</sub> emissions from domestic aviation have been calculated under the ESD for 2005-2011, and from 2012 under the ETS.

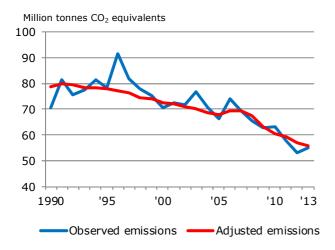
<sup>4)</sup> Total emissions with the contribution from "Forestry and land use", in which carbon sequestration has been included as negative emissions.

<sup>5)</sup> The figures are not directly comparable with contributions from forestry and soil, which are included in Denmark's reduction commitment in the Kyoto Protocol.

<sup>\*</sup> The preliminary emissions statement for 2014 is solely based on  $CO_2$  emissions from energy consumption and flaring as calculated in the Energy Statistics 2014. Total greenhouse gas emissions are calculated by assuming that all emissions other than  $CO_2$  from energy consumption and flaring are constant at the values for 2013, calculated by DCE - Danish Centre for Environment and Energy.

Source: DCE - Danish Centre for Environment and Energy

#### **Emissions of greenhouse gases**



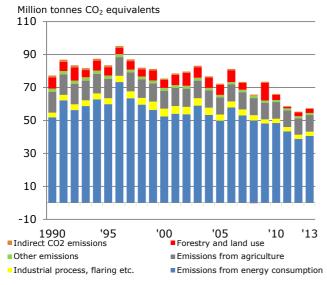
The figure shows emissions of greenhouse gases, excluding the effects of  $CO_2$  removal by forests and land use.

Observed emissions of greenhouse gases were 55.0 million tonnes of  $CO_2$  equivalents in 2013, which is 3.7% less than in 2012.

Adjusted for climatic variations and fuel consumption linked to foreign trade in electricity, emissions of greenhouse gases were 55.8 million tonnes of  $CO_2$  equivalents in 2013, which is 2.3% less than in 2012.

Source: DCE - Danish Centre for Environment and Energy www.dce.au.dk

### Observed net emissions of greenhouse gases by origin

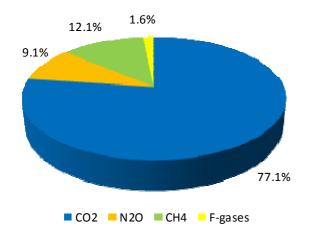


Emissions from energy consumption make the largest contribution to total net emissions of greenhouse gases. Such emissions derive from the energy and transformation sector as well as from final energy consumption. The second-largest contribution derives from agriculture.

In 2013 observed emissions excluding  $CO_2$  removals from forestry and land use were: Emissions from energy consumption 70.7%, emissions from agriculture 17.7%, industrial processes, flaring etc. 4.4% and other emissions 2.3% and indirect  $CO_2$  emissions of 0.8%.  $CO_2$  removals from forestry and land use corresponded to a deduction of 4.2% from observed emissions.

Source: DCE - Danish Centre for Environment and Energy  $\underline{www.dce.au.dk}$ 

## Observed emissions by type of greenhouse greenhouse gases in 2013



The greenhouse gases included in the statement of total emissions contribute with different percentages. With 77.1%,  $CO_2$  accounted for the largest part of total greenhouse gas emissions in 2013. With 12.1%, methane ( $CH_4$ ) was the second-largest contributor to total emissions, followed by nitrous oxide ( $N_2O$ ) with 9.1% and F-gases with 1.6%.

The primary source of  $CO_2$  emissions is fuel consumption for energy purposes. The primary source of both methane and nitrous oxide emissions is agriculture, but waste also significantly contributes to methane emissions.

Source: DCE - Danish Centre for Environment and Energy www.dce.au.dk

#### ETS and non-ETS CO<sub>2</sub> emissions from energy consumption 2012-2014

#### Observed CO<sub>2</sub> emissions from energy consumption

1000 tonnes		Total			EU ETS			Non-EU E1	rs
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Total	39 847	41 562	37 707	17 137	20 492	16 886	22 711	21 070	20 821
Energy sector	2 364	2 278	2 277	2 364	2 278	2 277	-	-	-
Transformation sector	14 500	16 778	13 361	12 605	16 177	12 427	1 895	601	934
Final energy consumption	22 984	22 506	22 069	2 168	2 037	2 182	20 816	20 468	19 887
Transport*	14 317	14 126	14 485	111	107	99	14 205	14 019	14 386
Agriculture and industry	5 300	5 087	4 904	2 056	1 930	2 083	3 243	3 156	2 821
<ul> <li>agriculture, forestry and horticulture</li> </ul>	1 292	1 278	1 178	14	13	11	1 278	1 265	1 167
- manufacturing	3 276	3 039	3 041	2 045	1 917	2 072	1 232	1 122	969
- other industry	732	769	685	-	-	-	732	769	685
Commercial and public services	723	721	575	-	-	-	723	721	575
Households	2 645	2 573	2 105	-	-	-	2 645	2 573	2 105

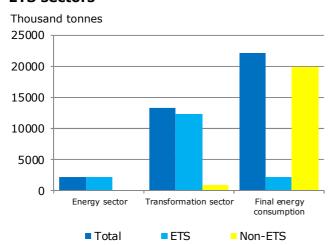
Note 1: The three first columns of figures include  $CO_2$  emissions from oil, natural gas and non-renewable waste.

Note 2: The table does not include emissions from industrial processes and flaring.

Note 3: From 2013 non-renewable waste is covered by the EU ETS (EU Emission  $^{-}$  Trading System). CO<sub>2</sub> emissions from own consumption by waste incineration plants (industry code 383921) have been included under the transformation sector.

\* Of the stated Danish  $CO_2$  emissions in the transport sector the stated EU ETS  $CO_2$  emissions are from domestic flights. However, the statement is inclusive of  $CO_2$  emissions from non-scheduled flights which are not covered by the EU ETS.

# Observed CO<sub>2</sub> emissions from energy consumption in 2014, EU ETS and non-EU ETS sectors



The EU Emission Trading System (EU ETS) comprises almost half the  ${\rm CO_2}$  emissions from energy consumption. However, the share varies considerably from sector to sector.

In the energy sector, which includes refineries and oil and gas production plants in the North Sea, all emissions are covered by the EU ETS. In the transformation sector, which includes power plants and district heating plants, if non-renewable waste is excluded, the picture is almost the same.

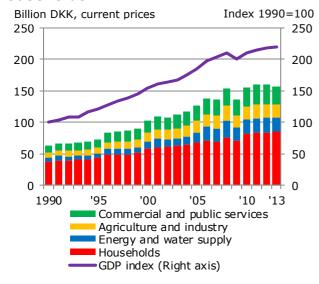
In relation to emissions linked to final energy consumption, i.e. emissions from burning oil, natural gas and coal by enterprises, households and means of transport, less than 10% is covered by the EU ETS. In this context, almost all emissions can be attributed to manufacturing industries.

#### Total observed emissions of greenhouse gases, EU ETS and non-EU ETS sectors

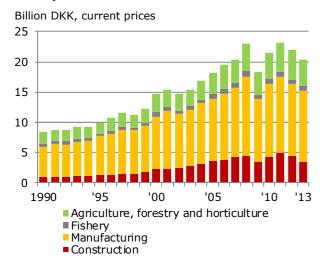
1000 tonnes CO₂ equivalents	Total	EU ETS, from energy consumption	EU ETS, from industries and flaring	Non-EU ETS
2013	55 049	20 492	1 202	33 355
2014	51 194 *)	16 886	1 227	33 081

Note: The preliminary emissions statement for 2014 is solely based on  $CO_2$  emissions from energy consumption and flaring as calculated in the Energy Statistics 2014. Total greenhouse gas emissions are calculated by assuming that all emissions other than  $CO_2$  from energy consumption and flaring are constant at the values for 2013, calculated by DCE - Danish Centre for Environment and Energy.

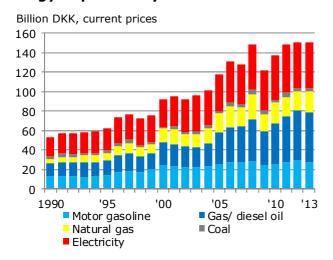
### Energy expenses by industry and households



### Energy expenses in agriculture and industry



#### **Energy expenses by fuel**



Energy expenses have been calculated based on purchase prices for the year, including taxes and VAT. For industries, as a general rule, a full refund of energy taxes (but not  $CO_2$  taxes) and VAT applies.

Total energy expenses by industry and households amounted to DKK 156.3 billion in 2013, which is 2.2% less than the year before. For households energy expenses were DKK 84.9 billion; for agriculture and industry (excluding oil refineries) expenses were DKK 20.4 billion; while for commercial and public services expenses were DKK 27.7 billion.

Energy expenses in current prices increased during the period from 1990-2013. The fall from 2008 to 2009 is due to a reduction in energy consumption.

The indexed value for GDP on the right axis has been added to illustrate the relationship between the trend in energy expenses and GDP.

Source: Statistics Denmark

Energy expenses for agriculture and industry can be further analysed between four sub-sectors.

Energy expenses for manufacturing industries (DKK 11.7 billion) accounted for the major part of agriculture and industry's energy expenses in 2013 (57.2%).

With DKK 4.4 billion (21.7%), agriculture, forestry and horticulture contributed the second-largest share. The third-largest share was contributed by construction with DKK 3.5 billion (17.0%). Finally, with DKK 0.8 billion (4.0%), fishing accounted for the smallest share of energy expenses.

In the period 1990-2013, manufacturing industries' share of the agriculture and industry sector's energy expenses followed a downward trend, while the energy expenses of construction have followed an upward trend. There was a small drop in fishing's share during the period.

Source: Statistics Denmark

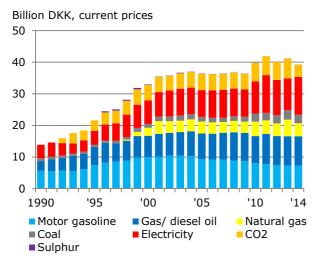
Energy expenses include i.a. motor gasoline, gas/diesel oil, natural gas, coal and electricity. These five fuels account for almost 50% of total energy expenses of DKK 318 billion, when including expenses for foreign bunkering of Danish vessels and oil refineries.

Of these fuels, the greatest share of energy expenses in 2013 was attributable to gas/diesel oil (DKK 51.6 billion). Electricity accounted for the second-largest share (DKK 47.1 billion). However, seen over the period 1990-2013, electricity usually accounts for the largest share.

This is followed by motor gasoline (DKK 27.5 billion), natural gas (DKK 21.7 billion), and coal (DKK 2.5 billion).

Source: Statistics Denmark

### Revenue from energy, CO<sub>2</sub> and sulphur taxes



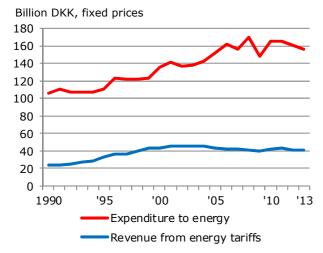
In 2014, revenues from energy taxes calculated in current prices were DKK 39.3 billion, which is a drop of 4.6% compared with 2013. In addition to energy taxes, revenues include  $CO_2$  and sulphur taxes. The largest contributions to revenues in 2014 is from electricity (DKK 12.0 billion), gas/diesel oil (DKK 9.3 billion), motor gasoline (DKK 7.3 billion) and  $CO_2$  taxes (DKK 3.9 billion).

The 2014 revenues in current prices increased by 182% compared with 1990, when there were no  $CO_2$  and sulphur taxes. Gas/diesel oil, electricity and motor gasoline have seen growths of 196%, 177% and 30%, respectively, since 1990.

In 2013 and 2014, energy,  $CO_2$  and sulphur taxes amounted to 4.6% and 4.0%, respectively, of total tax and VAT revenues in Denmark.

Source: Statistics Denmark

## Energy expenditures and tax revenues, fixed prices



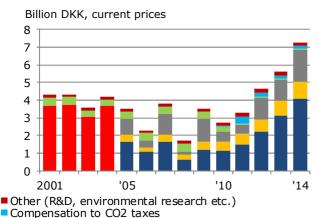
In order to assess changes in energy expenses and tax revenues in relation to general price fluctuations, the figures have been converted to 2013 prices.

Measured as 2013 prices, energy expenses in 2013 were 3.0% lower than in the previous year. Compared with 1990, energy expenses have risen by 46.7%.

Revenues from energy taxes measured in 2013 prices rose by almost 75% from 1990 to 2013. Since 2005, revenues have remained at the same level.

Source: Statistics Denmark

## Expenses for Public Service Obligations (PSO) in the electricity area



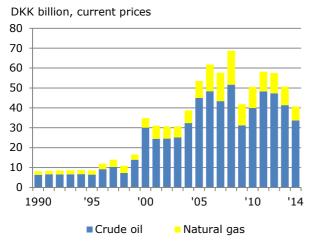
Total expenses for Public Service Obligations (PSO) were DKK 7.3 billion in 2014, compared with DKK 5.6 billion the year before. The increase in PSO expenses from 2013 to 2014 is attributable in particular to low prices on the electricity market and an increased wind power production.

For 2014, total funding support for environmentally friendly electricity production was DKK 6.9 billion, divided between DKK 4.1 billion for wind power, DKK 1.8 billion for small-scale CHP and DKK 1.0 billion for biomass.

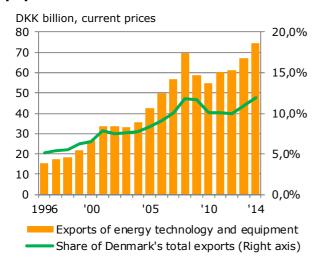
In 2010, compensation for  $CO_2$  taxes was introduced. Compensation paid in 2014 amounted to DKK 0.2 billion.

- Supply security
- Payment of subsidies for environmentally friendly electricity
- Small-scale CHP units
- Biomass etc.
- Wind

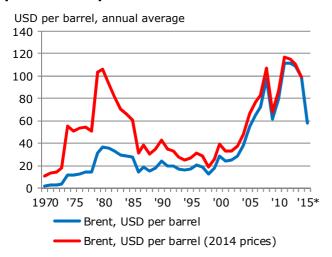
## Value of crude oil and natural gas production



## Exports of energy technology and equipment



#### Spot market prices for crude oil



<sup>\*</sup>Prices for 2015 cover only the first six months.

The value of the crude oil and natural gas produced from the North Sea in 2014 was DKK 40.7 billion, compared with DKK 50.7 billion the previous year. The value of crude oil fell from DKK 41.4 billion to DKK 33.6 billion, and the value of natural gas fell from DKK 9.3 billion to DKK 7.1 billion.

The value of the North Sea production depends on the scale of production as well as on world market prices. In 2014, the production of crude oil and natural gas fell by more than the production value. Production fell for both these products in 2014.

Compared with 1990, the value of the North Sea production has increased more than fourfold.

Source: Oil and Gas Production in Denmark 2014.

Exports of energy technology and equipment such as wind turbines, district heating pipes, thermostat valves, pumps etc. increased rapidly up to the year 2008.

Following falls in 2009 and 2010, exports increased once more in 2011 and onward and were 10.7% higher in 2014 than the year before. In 2014, Denmark exported energy technologies and equipment at a value of DKK 74.4 billion, corresponding to 12.0% of total Danish goods exports.

For more information see the publication on Danish energy technology exports 2014, "Energiteknologieksporten 2014", which is published as collaboration between the Danish Energy Agency, DI Energy and the Ministry of Business and Growth. The publication is available in Danish at the website of the Danish Energy Agency.

Source: Energiteknologieksporten 2014

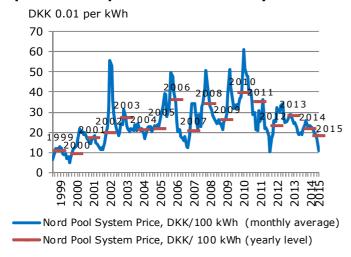
The average crude oil price was USD 99 per barrel in 2014. Measured in 2014 prices, this is the same level compared with the late 1970s and early 1980s, in which the average price per barrel was around USD 100. At that time, the reason for high oil prices was political instability in the Middle East.

The oil price has been at an historic high, even when measured in constant prices and despite recent years' economic decline. The global need for oil is increasing; so are the costs of oil production, and, worldwide, the shift from oil to other types of energy is taking place very slowly. Furthermore, there is political instability, in particular in the Middle East. These are all factors that contribute to keeping oil prices relatively high and with dramatic fluctuations.

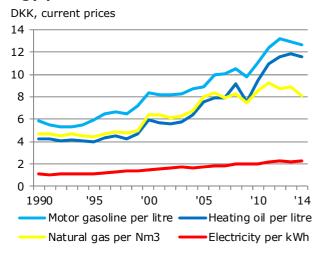
Following a large drop in 2009, the price of crude oil quickly went up again. Since 2009, the day price has fluctuated between USD 40 and USD 129 per barrel (not illustrated in the graph).

Source: BP and the World Bank (prices for 2014)

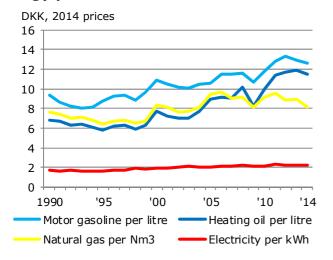
#### Spot market prices for electricity



#### **Energy prices for households**



#### **Energy prices for households**



The system price of electricity on NordPool is set hour by hour on the basis of supply and demand. The price is affected by a number of factors, including precipitation and temperature. For example, the winter 2010/2011 was affected by concerns over water shortages and increasing electricity consumption in Norway because of low temperatures, and this resulted in high prices. The market price of electricity in Denmark may deviate from the system price because of restrictions in transfer capacity between areas.

The average system price of electricity per kWh was DKK 0.22 in 2014 as opposed to DKK 0.28 in 2013.

In the first half of 2015, the average system price was DKK 0.18 per kWh.

Source: NordPool

The energy prices shown are annual averages of current consumer prices, i.e. including energy and  $\text{CO}_2$  taxes and VAT.

The price of heating oil was DKK 11.54 per litre in 2014, as opposed to DKK 11.84 per litre the year before, corresponding to a fall of 2.5%. In the period 1990-2014 the price increased by 172%.

The price of natural gas for households was DKK 8.10 per Nm³ in 2014, as opposed to DKK 8.93 per Nm³ the year before, corresponding to a drop of 9.2%.

The tax on motor gasoline has varied considerably over time and this has affected the price. The price of a litre of motor gasoline was DKK 12.60 in 2014, compared with DKK 12.89 in 2013, corresponding to a drop of 2.2%. The drop in the price is attributable to a lower price of crude oil in 2014 than in the year before.

The price of electricity was DKK 2.27 per kWh in 2014, as opposed to DKK 2.21 in 2013, corresponding to a rise of 2.3%.

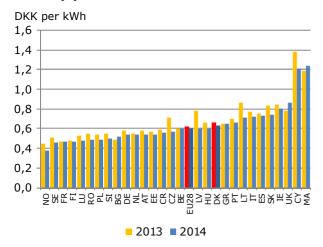
Source: Eurostat (electricity and natural gas) and EOF (oil products)

Household energy prices have been calculated at 2014 prices by adjusting current prices for changes in the general price level as stated in the consumer price index. Measured in 2014 prices, the price per litre of motor gasoline dropped 2.7% in 2014 compared with 2013.

Over a period in the 1990's the price of heating oil fluctuated around DKK 6 per litre. Since 2000, however, the price has been above this level and in 2014 it was DKK 11.54 per litre, which is 3.1% lower than in 2013. The price of natural gas was DKK 8.10 per Nm³ in 2014, which is 9.7% lower than the year before. The price of electricity in 2014 prices was 1.8% higher in 2014 than the year before.

Source: Eurostat (electricity and natural gas) and EOF (oil products), DEA

#### **Electricity prices for industrial customers**



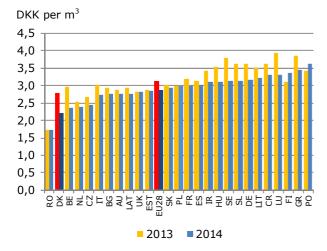
Electricity prices are shown in current prices (DKK per kWh) exclusive of taxes for industry customers with an annual consumption between 2 - 20 GWh.

In 2014, the price of electricity per kWh varied in the EU Member States (EU28) from DKK 0.46 in Sweden to DKK 1.24 in Malta. Norway had an electricity price of DKK 0.37 per kWh.

In 2014 the Danish electricity price was DKK 0.63 per kWh. This was 5.5% higher than the average price in EU28, which was DKK 0.60 per kWh. The Danish electricity price fell by 3.7% in 2014 compared with the year before. In EU28, the average electricity price fell by 4.1% between 2013 and 2014.

Source: Eurostat

## Natural gas prices for industrial customers



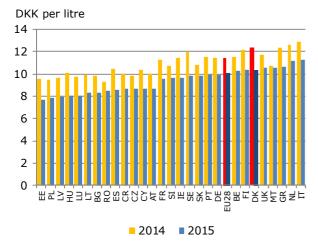
Natural gas prices are shown in current prices (DKK per m³) exclusive of taxes for industry customers with an annual consumption of 10 TJ to 100 TJ.

In 2014, the price of natural gas per  $m^3$  varied in the EU28 Member States from DKK 1.74 in Romania to DKK 3.62 in Poland. The Danish price in 2014 was DKK 2.21, while the average EU28 price was DKK 2.88.

In 2014, the Danish price of natural gas was 21.0% lower than in 2013, while the average EU28 price was 8.0% lower.

Source: Eurostat

#### Motor gasoline prices



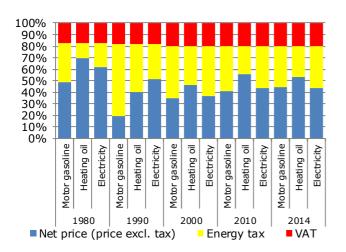
The price of motor gasoline in week 1 in 2014 and 2015, respectively, are shown in current prices (DKK per litre). Prices are for motor gasoline 95 unleaded, including taxes. The average for the EU28 Member States is a weighted average.

In 2015, the lowest price, DKK 7.67 per litre, was in Estonia, while the highest price, DKK 11.22, was in Italy. In Denmark, the price per litre was DKK 10.38, while the average price in EU28 was DKK 10.06 per litre.

The price of motor gasoline fell from 2014 to 2015 in all EU28 Member States. The largest drop was in Hungary, where the price fell by 20.9% within a year. In Denmark, the price of motor gasoline fell by 15.7% during the same period.

Source: Oil Bulletin, European Commission

### Composition of energy prices for households



Expenses on taxes increased considerably from 1980 to 1990. Since then, the share of the consumer price which comprises taxes has been falling for motor gasoline and heating oil. For electricity, the tax share continued to increase up to 2000, after which it went down again.

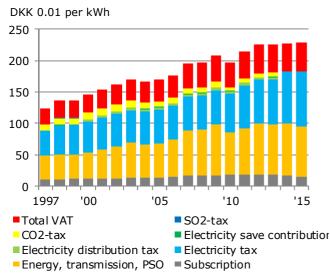
The price of motor gasoline in 2014 of DKK 12.60 per litre was made up as follows: Price exclusive of taxes and VAT 44.7%, taxes 35.3% and VAT 20.0%.

The price of heating oil in 2014 of DKK 11.54 per litre was made up as follows: Price exclusive of taxes and VAT 53.1%, taxes 26.9% and VAT 20.0%.

The price of electricity in 2014 of DKK 2.27 per kWh was made up as follows: Price inclusive of PSO and exclusive of taxes and VAT 43.2%, taxes 36.8% and VAT 20.0%.

Source: Eurostat (electricity) and EOF (oil products)

## Electricity prices for households 1997-2015 (as at 1 January)



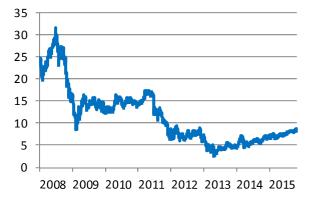
At the beginning of 2015, the average price of electricity for household customers with an annual consumption of 4,000 kWh was DKK 2.30 per kWh, which constitutes a slight increase of 0.6% from the year before. The price of electricity has increased by 48.9% since 2001.

Total tax revenues for the state per kWh in 2015 were DKK 1.34 compared with DKK 0.96 in 2001. Until 2014 these taxes included: Electricity tax, electricity distribution tax, electricity savings contribution,  $\text{CO}_2$  tax (electricity savings tax) and VAT. From 2014 these taxes were changed to include only electricity tax and VAT.

The payment for the actual energy per kWh (inclusive of PSO and electricity transmission) was DKK 0.80 in 2015, as opposed to DKK 0.46 in 2001, while subscription costs per kWh were DKK 0.16 as opposed to DKK 0.13 in 2001.

Source: Danish Energy Association

#### CO<sub>2</sub> prices (EUR/tonne)



The price of allowances in the EU ETS has varied greatly since the beginning in 2008.

Prices for allowances in the period 2008-12, which also reflect expectations up to 2020, also dropped significantly as of the summer of 2008 in parallel with expectations for lower energy consumption and emissions in the coming years due to the economic slowdown. The allowance price was relatively stable from April 2009 to June 2011. After this time it fell additionally in step with an increasing surplus of allowances due to the continuing economic crisis and a steeply falling price of international climate credits. From mid-2013 the trend in the allowance price is slightly rising.

Source: Point Carbon and European Energy Exchange

### Energy consumption in EU28 and other countries 2013 - by share of renewable energy

#### Share in percentage

	Energy consumption <sup>1)</sup> . PJ	Oil	Natural gas	Coal	Nuclear power	Renewable energy and waste <sup>2)</sup>	Of which. biomass and waste	Other
Latvia	187	32	27	2	0	36 (37)	30	4
Sweden	2 057	24	2	5	35	35 (52)	21	-1
Austria	1 414	36	21	10	0	30 (33)	16	4
Finland	1 420	25	8	15	18	29 (37)	25	5
Denmark	758	37	18	17	0	24 (27)	17	3
Portugal	947	46	17	12	0	24 (26)	11	2
Lithuania	280	36	32	4	0	18 (23)	16	9
Romania	1 354	26	30	18	9	17 (24)	11	0
Italy	6 699	36	36	9	0	16 (17)	7	3
Slovenia	288	35	10	20	20	16 (22)	9	-1
Croatia	328	41	29	9	0	16 (18)	6	5
Spain	4 973	42	22	9	12	15 (15)	5	0
Estonia	281	16	8	66	0	13 (26)	12	-3
EU28	69 765	33	23	17	14	12 (15)	7	1
Bulgaria	702	21	14	35	22	11 (19)	6	-3
Greece	1 020	47	13	29	0	11 (15)	4	1
Germany	13 577	34	22	25	8	10 (12)	6	0
France	10 856	30	15	5	42	9 (14)	5	- 1
Poland	4 110	23	14	54	0	9 (11)	7	0
Czech Republic	1 766	20	16	39	19	8 (12)	7	-3
Hungary	952	25	34	10	17	8 (10)	7	5
Slovakia	723	19	28	20	24	8 (10)	5	1
Ireland	575	49	28	15	0	6 (8)	2	2
Belgium	2 375	41	25	6	19	6 (8)	4	3
Cyprus	92	94	0	0	0	6 (8)	1	0
UK	8 418	34	33	19	9	5 (5)	3	1
Netherlands	3 398	41	41	10	1	4 (5)	3	3
Luxembourg	182	64	21	1	0	4 (4)	2	11
Malta	35	98	0	0	0	2 (4)	0	0
Norway	1 409	44	17	2	0	37 (66)	4	-1
USA	91 622	41	28	20	10	6	3	-4
Japan	19 035	40	23	27	1	4	2	5

<sup>1)</sup> Source: Eurostat (Gross inland consumption). Corresponds to "gross energy consumption". however without e.g. adjustments for conversion loss in connection with foreign trade in electricity.

2) The statement figures in brackets are according to the EU Directive on renewable energy. The percentage share for other fuels is the Danish Energy Agency's calculation based on figures from Eurostat. For a more detailed explanation. See pages 8 and 9. Source: Eurostat and IEA (figures for USA and Japan)

### Consumption of renewable energy in EU28 and other countries in 2013

#### Share in percentage

	Consumption of renewable energy and waste. PJ	Hydro	Wind	Solar	Geo- thermal	Biomass. incl. waste	Biofuels
Latvia	67	15.5	0.6	0.0	0.0	82.5	1.3
Sweden	715	30.9	5.0	0.1	0.0	59.6	4.5
Austria	418	36.1	2.7	1.8	0.4	53.3	5.2
Finland	415	11.1	0.7	0.0	0.0	85.0	3.2
Denmark	183	0.0	21.8	0.6	0.1	70.7	5.7
Portugal	222	22.2	19.4	1.4	3.4	47.6	5.2
Lithuania	51	3.7	4.3	0.0	0.1	86.8	4.8
Romania	232	23.2	7.0	0.0	0.5	65.0	3.7
Italy	1 104	17.2	4.9	0.6	19.0	43.7	7.5
Slovenia	47	35.1	0.0	0.9	3.4	53.6	5.4
Croatia	53	54.3	3.5	0.6	0.5	38.4	2.6
Spain	729	18.2	26.6	11.3	0.1	34.5	5.2
Estonia	36	0.3	5.3	0.0	0.0	94.0	0.4
EU28	8 238	16.2	10.3	1.9	3.0	57.8	7.3
Bulgaria	76	19.3	6.5	1.1	1.8	57.7	7.1
Greece	109	20.9	13.6	7.2	0.4	40.6	5.3
Germany	1 398	5.9	13.3	1.7	0.4	62.0	8.6
France	976	26.0	5.9	0.4	1.0	53.4	11.4
Poland	358	2.5	6.0	0.2	0.2	82.4	8.7
Czech Republic	149	6.6	1.2	0.4	0.0	79.2	7.7
Hungary	79	1.0	3.3	0.3	6.0	80.9	8.4
Slovakia	59	29.6	0.0	0.4	0.5	58.9	7.0
Ireland	36	5.8	45.9	1.3	0.0	38.4	8.5
Belgium	146	0.9	9.0	0.5	0.1	72.4	10.6
Cyprus	6	0.0	14.8	48.9	1.1	21.0	11.2
UK	423	4.0	24.2	1.9	0.0	57.7	10.5
Netherlands	141	0.3	14.4	0.8	0.7	71.3	11.2
Luxembourg	7	6.5	4.6	1.6	0.0	47.9	35.4
Malta	1	0.0	0.0	32.5	0.0	19.0	26.8
Norway	527	87.8	1.3	0.0	0.0	9.9	1.0
USA	5 856	16.7	10.4	1.2	6.2	43.8	21.7
Japan	795	35.4	2.4	1.7	12.7	47.9	0.0

Source: Eurostat and IEA (figures for USA and Japan)

Key figures 2013 - ranked by degree of self-sufficiency

_		Self-suffi	ciency, %	Energy cons	umption per capita, GJ	Energy intensity, gross energy consumption in toe per 1 million EUR (2005 prices)		
	Total	Oil	Natural gas	Gross energy consump- tion	Final energy consump- tion	2000	2013	
Denmark	92	129	129	135	106	101	87	
Estonia	84	0	0	213	91	629	513	
Netherlands	86	3	186	203	128	157	150	
Romania	81	50	88	68	46	606	335	
Poland	72	4	28	108	70	424	295	
Czech Republic	71	2	3	168	95	481	354	
Sweden	71	0	0	215	138	187	144	
Bulgaria	63	1	9	96	50	1 040	611	
UK	54	58	50	132	89	143	103	
Finland	53	0	0	262	190	235	206	
Slovenia	52	0	0	140	98	268	226	
France	52	1	1	166	97	162	143	
Latvia	48	0	0	92	80	443	311	
EU28	47	12	34	138	91	171	142	
Croatia	46	17	66	77	57	270	220	
Hungary	45	10	20	96	63	350	257	
Greece	38	1	0	93	58	179	151	
Germany	37	2	12	169	113	159	131	
Slovakia	37	0	2	134	84	604	337	
Austria	36	7	16	167	138	128	124	
Spain	29	1	0	106	73	160	129	
Belgium	26	0	0	213	131	211	173	
Portugal	25	0	0	90	63	171	151	
Italy	23	10	11	112	83	127	117	
Lithuania	21	4	0	94	67	490	266	
Ireland	17	0	4	125	98	111	82	
Cyprus	5	0	-	106	78	207	154	
Luxembourg	3	0	0	338	322	143	128	
Malta	1	0	-	83	50	173	144	
Norway	576	507	1 667	279	156	121	126	
USA	86	54	93	290	198			
Japan	6	0	3	149	102			

Source: Eurostat and IEA (figures for Norway, USA and Japan)

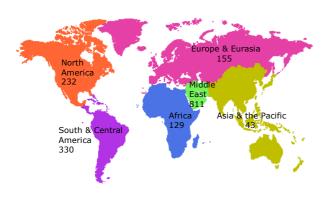
### Reserves, production, stocks and consumption of oil by regions

									Change
	1980	1990	1995	2000	2005	2010	2013	2014	'90 - '14
Oil reserves <sup>1)</sup> , 1000 million									
barrels									
The world	683	1028	1301	1374	1637	1702	1701	1700	65.5%
North America	123	125	232	224	222	232	232	232	85.3%
South and Central America	27	72	98	104	324	330	330	330	362%
Europe and Eurasia	84	76	141	139	158	158	157	155	104%
Middle East	362	660	697	756	766	809	809	811	22.9%
Africa	53	59	93	111	125	131	130	129	120%
Asia and the Pacific	34	36	40	41	42	42	43	43	17.6%
Oil production, million tonnes									
The world	3 092	3 175	3 618	3 942	3 975	4 116	4 127	4 221	32.9%
North America	671	655	642	638	639	721	785	867	32.4%
South and Central America	195	234	344	375	377	377	376	391	67.1%
Europe and Eurasia	747	788	729	849	859	833	833	834	5.8%
Middle East	935	852	1 151	1 226	1 218	1 343	1 325	1 339	57.0%
Africa	301	321	370	471	480	442	413	392	22.2%
Asia and the Pacific	245	326	382	383	403	400	395	397	21.7%
Oil stocks*), million tonnes									
	271	217	209	207	214	207	206	209	-3.8%
The OECD North America	116	90	73	77	83	79	78	81	-9.6%
Europe	131	106	109	107	108	104	103	104	-1.9%
·	23	22	27	22	22				
Pacific	23	22	27	22	22	23	24	24	11.1%
Oil consumption, million tonnes The world	s 2 975	3 161	3 582	3 919	4 042	4 133	4 179	4 211	33.2%
North America	929	923	1 062	1 131	1 040	1 013	1 025	1 024	10.9%
South and Central America	164	173	229	243	286	304	318	327	89.2%
Europe and Eurasia	1 198	1 129	931	965	908	880	869	859	-23.9%
Middle East	99	176	244	293	354	375	382	393	123%
Africa	70	96	119	139	164	168	172	179	86.1%
Asia and the Pacific	515	663	997	1 149	1 289	1 393	1 412	1 429	115%
Total energy consumption Mto	•								
Total energy consumption, Mto	6 631	0 122	9 371	10 920	12 111	12 586	12 907	12 928	57.5%
The world North America	2 107	<b>8 133</b> 2 326	2 759	2 848	2 784	2 726	<b>12 807</b> 2 796	2 823	20.2%
South and Central America	2 107	329	468	2 646 528	621	665			108%
	2 834	3 205		2 971	2 949	2 943	685	693	-9.2%
Europe and Eurasia			2 821				2 912	2 830	
Middle East	133	269	421	558	724	780	793	828	195%
Africa	145	222	274	329	390	403	409	420	83.8%
Asia and the Pacific	1 161	1 782	2 628	3 686	4 643	5 069	5 212	5 335	193%
Oil consumption - total share of consumption, %	f energy								
The world	45	39	38	36	33	33	33	33	
North America	44	40	38	40	37	37	37	36	
South and Central America	65	52	49	46	46	46	46	47	
Europe and Eurasia	42	35	33	32	31	30	30	30	
•									
Middle East	75	66	58	53	49	48	48	4/	
Middle East Africa	75 48	66 43	58 44	53 42	49 42	48 42	48 42	47 43	

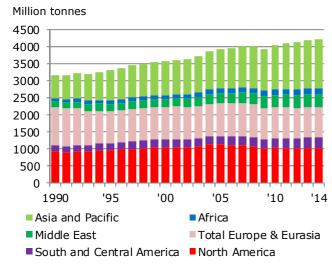
<sup>1)</sup> Crude oil, at the end of the year \*) At the end of the year Sources: BP Statistical Review of World Energy and IEA, International Energy Agency, Paris

#### Proved oil reserves at end 2014

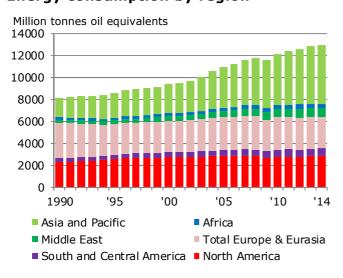
Billion barrels



#### Oil consumption by region



#### **Energy consumption by region**



At the end of 2014, the world's total proved oil reserves totalled 1700 billion barrels.

47.7% of crude oil reserves are in the Persian Gulf region, where the fields are relatively large and geologically easily accessible, which means production costs are low.

Comparing proved regional oil reserves with actual regional oil production (reserves-to-production ratio, R/P), shows that Europe and Eurasia have reserves for 24.7 years' unchanged production, while North America has reserves for 34.0 years. The R/P ratio for total world oil reserves is 52.5 years' unchanged production. However, new oil reserves are being discovered continually, and for 2014 oil reserves are almost unchanged compared with 2013.

Source: BP Statistical Review of World Energy 2014

In 2014, total world oil consumption was 4.211 billion tonnes, which is 0.8% more than the year before. A total of 24.3% of this oil was consumed in North America, which accounted for 20.5% of the world's crude oil production. Europe & Eurasia accounted for 20.4% of oil consumption and 19.8% crude oil production. Neither North America nor Europe & Eurasia are self-sufficient in oil, as their consumption is greater than their production.

Asia and the Pacific's share of consumption was 33.9% in 2014, the Middle East's share was 9.3%, South and Central America's share was 7.8%, while Africa's share was 4.3%.

Total world oil consumption in 2014 was 32.6% of total world energy consumption , which is unchanged compared with 2013. For Europe & Eurasia, this figure was 30.3% compared with 29.9% in 2013.

Source: BP Statistical Review of World Energy

World energy consumption was 12.928 billion tonnes oil equivalents in 2014, which is 0.9% higher than in 2013. Except for in 2009, world consumption increased steadily over the period 1990-2014. The fall from 2008 to 2009 was due to economic recession, especially in North America and in Europe & Eurasia.

Energy consumption went up in all regions in 2014, except for in Europe & Eurasia, where it dropped by 2.8%. In North America, consumption increased by 0.9% in 2014.

The largest percentage increase in energy consumption from 2013 to 2014 was in the Middle East, where energy consumption went up 4.4%. The Middle East is responsible for 6.4% of total world energy consumption

In 2014, energy consumption increased by 2.3% in the Asia and Pacific region, which was responsible for 41.3% of total world energy consumption.

Source: BP Statistical Review of World Energy 2014

Adjustments for trade in electricity

In the case of net imports of electricity, fuel consumption is added corresponding to the average consumption of a Danish condensation plant if the electricity had been produced in Denmark. For net exports, consumption will be deducted correspondingly.

Agriculture and industry

Includes agriculture, forestry, horticulture, fishing, manufacturing and construction.

Autoproducers

Producers of electricity and/or district heating, whose primary activity is not transformation, e.g. manufacturing companies, horticulture or waste treatment facilities.

Bitumen

A tar-like oil product, the heaviest part of the distillation residue in refining. Bitumen is used as a binding material for the stone material in road asphalt and as a sealing material in construction.

Border trade with oil products

Motor gasoline, gas/diesel oil and petroleum coke purchased by private persons and haulage contractors on one side of the border and consumed on the other side due to differences in consumer prices. Reporting to the IEA and Eurostat does not include border trade.

CO2 emissions

Emissions of carbon dioxide, mainly from use of energy. There are also a number of other sources, including flaring of gas in the North Sea, incineration of plastic waste and certain industrial processes. Energy statistics only include emissions from the consumption of oil, natural gas and coal.

Calorific value

The amount of energy released when combustible matter is burned. Distinction is made between "net" and "gross" calorific values. Gross calorific value is the amount of heat released if the combusted products are cooled enough for their water vapour content to condense completely. The water vapour comes from the actual content of the fuel itself and the combustion of the hydrogen compounds in the fuel. The "net" calorific value is the amount of energy attained when the water remains as vapour. Net calorific value is used in the national Danish energy statistics.

Climate adjustment

Energy consumption for heating in Denmark is somewhat dependent on outdoor temperature, which varies from year to year. A measurement of climatic variations is "degree days", registered by the Danish Meteorological Institute (DMI). The number of "degree days" is calculated as the sum of the days when the mean outdoor temperature is below 17 degrees Celsius multiplied by the difference between 17 degrees Celsius and the mean temperature of the 24-hour period. The climate-adjusted energy consumption for heating purposes is therefore the consumption that would have taken place, had the year been a normal weather year. From the 2005 statistics, the "degree days" of a normal weather year have been fixed as the moving average of degree days in the last twenty years.

However, some of the fuel consumption for heating purposes is independent of outdoor climate, for example heating of water, heat loss from installations and grids etc. This varies according to types of industry and fuel. As a general rule, it is assumed that 65 % of fuel consumption in households as well as the service sector and 50 % in manufacturing are dependent on "degree days". For each sector, the individual fuels have specific values for heating purposes.

Combined heat and power production (CHP) Simultaneous production of electricity and heat.

Commercial and public services

Includes wholesale, retail, private services and public services. Public services are limited to administration and services available to society on non-market terms.

Condensing production of electricity

Condensing production of electricity at large-scale power plants is defined as a method of production, where the surplus heat from electricity generation is eliminated. In Denmark, this typically takes place when the heat is released into the sea.

Consumption in distribution

Consumption of electricity in connection with electricity, district heating and gas works gas supply.

Consumption in production/own

Difference between gross and net production of an energy product. Consumption in production comprises the extraction of natural gas (on platforms), the refining of oil products and the conversion of electricity.

Degree of self-sufficiency

In Danish energy statistics, degree of self-sufficiency is calculated as production of primary energy in relation to climate-adjusted energy consumption. In international statistics, production is in relation to observed energy consumption.

Direct energy content

Amount of energy contained in a product. This is calculated on the basis of calorific value per unit of weight or volume for the different energy products and as the energy delivered in the form of electricity, district heating and gas works gas.

Distribution loss

Difference between supply and final consumption of an energy product. For electricity production, it is calculated as the difference between the supply and sale of electricity. In the case of district heating, distribution loss is estimated to comprise 20% of the district heating supplied to the grid. For gas works gas, the loss is estimated to be 4%. In the case of natural gas, the loss is calculated from year to year.

**Electricity capacity** The maximum instantaneous electricity production from a power plant, combined heat and power plant, wind

> turbine etc. Electricity capacity is measured in MW (megawatt) or kW (kilowatt). Electricity capacity does not indicate a plant's actual production; rather, the maximum a plant can produce at a given moment.

**Electricity intensity** Electricity consumption in relation to gross domestic product (GDP) or gross value added (GVA) at 2010 prices,

chained values.

**Electricity plant coal** Hard coal used in Danish power plants.

**Energy consumption,** observed

Registered energy consumption for a given calendar year.

Energy consumption in relation to gross domestic product (GDP) or gross value added (GVA) at 2010 prices, **Energy intensity** 

chained values.

**Extraction and refining** Production of natural gas and crude oil and the processing of crude oil and refinery feedstocks.

Final energy consumption Sum of the consumption by the final users, i.e. private and public enterprises and households. The energy is used in the production of goods and services, heating, lighting, other usage of appliances and transport. There is also consumption for non-energy purposes, e.g. lubrication, cleaning, and bitumen for roads. Energy consumption in connection with extraction of energy, refining and transformation is not included in final energy consumption. Identification and division of final energy consumption is in accordance with the guidelines from the IEA and Eurostat. Energy consumption for road, rail, sea, air and pipeline transport, irrespective of consumer, is classified in a special main category. Hence, energy used in industry and households is calculated excluding consumption for transportation purposes.

Fuel equivalent Energy content of a quantity of fuel used for producing a given amount of electricity, district heating or gas

works gas. In the case of oil, coal, natural gas and renewable energy etc., there is no difference between the

amount of energy measured in direct energy content and in fuel equivalent.

Gas/diesel oil Gas and diesel oils have the same boiling point interval in the refining process. They can be used for the same

purposes to a great extent. No distinction is therefore made between the two products in the Danish energy statistics. There are usually more stringent environmental and safety specifications for automotive diesel oil than

for heating gas oil. The requirements for marine diesel are less stringent.

Gas works gas Gas produced in urban gas stations. Gas works gas was formerly produced from coal and oil, but production

since 1990 has almost exclusively been by transforming natural gas.

**Geothermal energy** Heat energy from the core of the earth. The energy is used to heat water which then is used to either produce

district heating or power. In Denmark, geothermal energy is used only for production of district heating.

**Gross domestic product** (GDP)

The total market value of all final goods and services produced within the borders of a nation during a specified

**Gross energy** consumption

Gross energy

Observed energy consumption adjusted for fuel consumption related to foreign trade in electricity. See

"Adjustments for trade in electricity" above.

consumption, adjusted

Observed gross energy consumption adjusted for climatic variations in relation to a normal weather year.

**Gross value added** 

(GVA)

Equal to GDP at base prices and calculated for the individual enterprise as production at base prices minus production-related consumption at purchasing prices.

**Heat pumps** The volume of energy produced by heat pumps is calculated as the difference between the amount of energy

supplied and the electricity consumed by heat pumps. An energy-producing appliance regarded as a form of

renewable energy.

**Imports and exports** Imports and exports refer to goods that have crossed national borders. Greenland and the Faroe Islands are

regarded as abroad.

International marine

bunkers

Includes deliveries of energy products (oil) in Denmark to sea-going ships of all flags, including warships and foreign fishing vessels. Deliveries to domestic shipping and Danish fishing vessels are not included.

International marine bunkers are not included in national energy consumption.

Joule Unit of measurement of energy. In Danish energy statistics, the following units are used: 1 PJ (Peta Joule) =

 $10^3 \text{ TJ (Tera)} = 10^6 \text{ GJ (Giga)}.$ 

JP1 (Kerosene type jet

fuel)

Jet Petroleum 1. Designates a petroleum quality different from other types of petroleum in terms of stringent

requirements for low water content and unsaturated compounds. Used in aviation.

Large-scale power

plants

Plants at 16 specific power stations. East of the Great Belt are Amager, Asnæs, Avedøre, H.C. Ørsted, Kyndby, Svanemølle, Stigsnæs and Rønne power stations. West of the Great Belt are Ensted, Esbjerg, Fyn, Herning, Randers, Skærbæk, Studstrup and Nordjylland power stations. Earlier Aalborg, Århus and Masnedø have also

been defined as large scale power plants.

LPG Liquefied Petroleum Gas (liquid gas, bottled gas). The term for propane, butane and combinations of the two.

Used in industry and heating, food preparation and as a propellant. Previously, LPG was also used as a raw

material for producing gas works gas.

LVN Light Virgin Naphtha (light petrol). Used as a component for petrol production and as a raw material for the

petrochemical industry. Previously, LVN was also used to produce gas works gas.

Manufacturing The Danish Energy Agency defines manufacturing differently than Statistics Denmark. In the Danish Energy

Agency's statistics, manufacturing industries do not include refineries which have been separated into a separate

consumption category, whereas the sector extraction of gravel and stone has been included under

manufacturing industries.

Non-energy use Energy products included in Total energy consumption, which are not used for energy purposes. This category

includes products such as white spirit, lubricants and bitumen.

Orimulsion Type of heavy oil emulsified in water. It comes from the area around the Orinoco River in Venezuela.

Petroleum coke A solid oil by-product appearing when refining fuel oil in a so-called coker. Approximately 10 % of the material is

deposited in the coker as petroleum coke. Primarily used in industry.

**Primary production** Production of crude oil, coal, natural gas, renewable energy etc.

PSO PSO include costs for public service obligations in connection with electricity supply. Such costs are paid by all

electricity consumers. PSO includes support to the production of environment-friendly electricity, grid connection of small-scale combined heat and power plants and wind turbines, security of supply, environmental studies about offshore wind turbines, and research and development related to environment-

friendly electricity generation as well as compensation for CO<sub>2</sub> taxes.

Recycling Understood as energy products included in the energy balance for a second time. Currently includes lubricants

that have previously been included in final energy consumption for non-energy purposes and which are

subsequently included as waste oil.

Refinery feedstocks Processed oil destined for further processing, products in a stage between raw materials and finished products.

Refinery gas The lightest fractions obtained in the distillation of crude oil. Refinery gas is non-condensable at normal

atmospheric pressure. Primarily used as refinery fuel.

Renewable energy Renewable energy is defined as solar energy, wind power, hydropower, geothermal power, biomass (straw,

wood chips, firewood, wood pellets, waste wood, liquid biofuels, and renewable wastes unless otherwise stated),

biogas and heat pumps.

Renewable energy etc. Renewable energy etc. is defined as "renewable energy" including non-renewable wastes.

Revision of energy statistics

The energy statistics are based on information from multiple sources and a range of assumptions. Insofar as new data about energy supply or consumption become available for a given year, the energy statistics will be revised accordingly. Every year, energy consumption in manufacturing is revised as the statement is partly based on an estimate, which can be replaced by factual data from Statistics Denmark the following year. Also new information concerning production and consumption of renewable energy, including biomass may be provided. Finally, revision of the statistics may be based on a change in delimitations and calculation assumptions.

**Small-scale combined** heat power (CHP) plants

Plants not included in the list of large-scale power plants, where the production of power and heat is the main

activity.

Statistical difference The difference between calculations of energy consumption based on different sources, which theoretically ought

to produce identical results.

Structure effect Changes in energy consumption owing to shifts in the structure of industry.

Surplus heat Residual heat from industrial production. Autoproducers sell a great deal of surplus heat from processing to

> district heating network. District heating resulting from surplus heat is not added to fuels in the energy statistics. Transformation gains are therefore to be made in the case of district heating from autoproducers.

Thermal electricity generation

Thermal electricity generation is defined as electricity generated by the combustion of fuels. Thus, it is electricity

not generated using wind power, hydropower, wave power or photovoltaics.

Total energy supply Denmark's total energy supply is domestic production of energy adjusted for imports and exports (including

cross-border trade) in oil products, international marine bunkers, and stock changes. The difference between

total energy supply and energy consumption, observed is the statistical difference.

**Transformation** Production of electricity, district heating and gas works gas.

**Transformation loss** Difference between total input and output in the transformation process.

Transport All transport activity with the exception of transport within the company's premises. In the Danish statistics

energy consumption for road transport is adjusted for border trade, as opposed to international statistics.

International statistics is based solely on data from sales.

Volume weight The relationship between the weight of a specific volume of liquid and the weight of an equal volume of water at

4 degrees Celsius, measured in tonne/m<sup>3</sup>.

Waste oil Oil used as fuel in industry and transformation, previously included in the energy statistics as lubricants.

#### Danish key figures for energy and emissions

									Change
Denmark	1980	1990	2000	2005	2010	2012	2013	2014	'90-'14
Energy intensity, gross energy consumption [TJ per million GDP]	0.776	0.635	0.500	0.474	0.453	0.433	0.424	0.415	-34.6%
Energy intensity, final energy consumption [TJ per millior GDP]	0.581	0.468	0.388	0.371	0.352	0.339	0.338	0.334	-28.6%
Gross energy consumption per capita [GJ]	159	160	157	157	147	140	136	134	-15.9%
Final energy consumption per capita [GJ]	119	118	122	123	114	110	108	108	-8.2%
Degree of self-sufficiency [%]	5	52	139	154	120	101	92	90	73.7%
Oil consumption - share of gross energy consumption [%]	67	43	45	41	38	37	36	37	-15.6%
Renewable energy - share of gross energy consumption [%]	2.7	5.8	9.6	14.5	20.0	23.0	24.4	26.0	346%
Refinery capacity [million tonnes per year]	9.0	9.0	9.2	9.0	9.0	9.0	9.0	9.0	
, , , , , , , , , , , , , , , , , , , ,									40.704
Electricity capacity [MW]	6 618	9 124	12 598	13 088	13 450	14 122	13 810	13 657	49.7%
Wind turbine capacity – share of total electricity capacity $[\%]$	-	3.6	19.0	23.9	28.3	29.5	34.9	35.8	902%
Net electricity import - share of domestic supply [%]	-5.1	22.5	1.9	3.8	-3.3	15.2	3.2	8.5	•
CHP production - share of total thermal electricity									
production [%]	18	37	56	64	61	74	61	61	66.0%
CHP production - share of total district heating production [%]	39	59	82	82	77	73	73	69	17.1%
Renewable electricity - share of total domestic electricity supply [%]	0.1	2.6	15.9	27.4	34.8	43.1	46.7	53.4	1954%
CO <sub>2</sub> emission per capita [tonnes]	12.2	11.9	10.4	9.7	8.5	7.9	7.6	7.3	-38.5%
$CO_2$ emissions per GDP [tonnes per million GDP]	60	47	33	29	26	24	24	23	-52.2%
$CO_2$ emissions per fuel unit [kilogram per GJ]	77	75	66	62	58	56	55	54	-26.8%
$CO_2$ emissions per kWh electricity sold [gram per kWh]	1 025	928	632	537	505	470	439	401	-56.8%
$CO_2$ emissions per consumed unit of district heating [kilogram per GJ]	95	62	43	39	33	33	32	35	-44.1%

Note: 1: Data on energy consumption and emissions have been adjusted for the fuel consumption linked to foreign trade in electricity and climate variations relative to a normal weather year.

Note: 2: The gross domestic product (GDP) is in 2010 prices, chained values.

#### The Danish Energy Agency's climate variation adjustment method

The purpose of adjusting for climate variations is to show figures for energy consumption which are independent of climate fluctuations in individual years. Climate adjustment takes place by adjusting - for each of the areas of consumption included in the statistics - the share of the energy consumption that consists of space heating and depends on the climate.

The adjustment takes place by comparing annual degree-day figures to the degree-day figure in a normal weather year. A high number of degree days relative to a normal year indicates a relatively cold year and the annual observed energy consumption is therefore adjusted downward to indicate what the energy consumption would have been had it been a normal weather year. In contrast a low number of degree days lead to an upward adjustment of the observed energy consumption.

Ideally, the degree-days for the various years should distribute fairly evenly around the normal year. Previously, a fixed normal year was used. However, due to an increasingly milder climate, for a considerable number of years with only few exceptions, the degree-day figure was lower than "normal". In order to arrive at an adjustment that takes into account an ever warmer climate, the Danish Energy Agency has decided to use a normal year derived by taking a moving average of the degree-day figures for the last 20 years.

The degree-day figure is calculated by the Danish Meteorological Institute.

### The calorific value and CO<sub>2</sub> content in 2014 Tax rates in 2014

	Calorific values	CO <sub>2</sub> emissions factors
	GJ/ton	Kg/GJ
Crude oil/ North Sea	43.00	-
Refinery feedstocks	42.70	-
Refinery gas	52.00	58.27
LPG	46.00	63.10
LVN	44.50	65.00
Motor gasoline	43.80	73.00
Aviation gasoline	43.80	73.00
JP4	43.80	72.00
Other kerosene	43.50	71.90
JP1	43.50	72.00
Gas/diesel oil	42.70	74.00
Fuel oil	40.65	78.00
Orimulsion	27.65	80.00
Petroleum coke	31.40	93.00
Waste oil	41.90	73.30
White spirit	43.50	-
Bitumen	39.80	-
Lubricants	41.90	-
Natural gas, GJ/1000 Nm³	39.53	56.95
Gas works gas/1000 m <sup>3</sup>	20.10	-
Coal in electricity plants	24.70	93.95
Other hard coal	24.70	93.95
Coke	29.30	107.00
Brown coal	18.30	97.50
Straw	14.50	-
Wood chips	9.30	-
Firewood, hard wood GJ/m <sup>3</sup>	10.40	-
Firewood, soft wood GJ/m <sup>3</sup>	7.60	-
Wood pellets	17.50	-
Wood waste	14.70	-
Wood waste, GJ/m³ loose volume	3.20	-
Biogas, GJ/1000 m <sup>3</sup>	23.00	-
Biomethane (GJ/1000 m <sup>3</sup> )	35.58	-
Waste	10.60	37.00
Biodiesel	37.50	-
Bioethanol	26.70	-
Bio oil	37.20	-

#### Climate adjustments

Year	Specific year	Normal year
2007	2807	3136
2008	2853	3120
2009	3061	3127
2010	3742	3171
2011	2970	3156
2012	3234	3166
2013	3207	3155
2014	2664	3131

	Energy taxes	CO₂ taxes
	DKK/GJ	DKK/GJ
Transport		
Motor gasoline	123.70	11.60
Light diesel oil	82.10	12.40
Low-sulphur diesel oil	72.80	11.50
Other uses		
LPG	71.80	5.90
Other kerosene	74.10	12.70
Heating diesel oil	72.20	13.10
Fuel oil	71.90	13.00
Petroleum coke	80.90	17.30
Natural gas	71.90	9.50
Electricity plant coal	82.30	18.00
Coke	82.30	18.00
Brown coal	74.60	16.50
Electricity	231.40	
Electricity for space heating <sup>1)</sup>	114.40	

 $<sup>^{\</sup>rm 1)}$  For consumption of more than 4000 kWh per year in households.

Source: Ministry of Taxation

Volume weights in 2014	
	tonne/m³
Motor gasoline	0.75
Aviation gasoline	0.71
JP4	0.76
Other kerosene	0.80
JP1	0.80
Gas-/diesel-oil	0.84
Bioethanol	0.79
Bindiesel	0.88

#### **Conversion factors**

In order to make comparison easier, all the figures for energy consumption are stated in Tera Joules (TJ) or Peta Joules (PJ).

1 kilo Joule	=	1000 J
1 Mega Joule	=	1000 kJ
1 Giga Joule	=	1000 MJ
1 Tera Joule	=	1000 GJ
1 Peta Joule	=	1000 TJ
1 kWh	=	3.6 MJ
1 MWh	=	3.6 GJ
1 GWh	=	3.6 TJ
1 Btu (British thermal unit)	=	1055.66 J
1 Barrel (barrel, bbl)	=	158.987 litres
1 mtoe (mill. tonne oil equivalent)	=	41.868 PJ

#### Symbols

- Not applicable
- Nil
- 0 Less than half

### Do you need more data?

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### **Energy Statistics 2014**

- Publication as .pdf
- Figures in Powerpoint
- Time series and tables
- Danish energy flows

#### Data

- Oil and gas production in Denmark
- Monthly energy statistics
- Wind turbine data

### Maps

• Key maps showing aspects of the Danish energy sector

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