Danish Energy Agency

2020

Data, tables, statistics and maps

Energy Statistics 2020

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www.ens.dk

Please feel free to visit the Danish Energy Agency's website for statistics and data **www.ens.dk/facts_figures**. This website includes energy statistics that are far more detailed than the statistics published here. Please find the complete energy statistics, including tables and time-series for energy consumption, emissions and assumptions for the period 1972-2020. Descriptions of methods and revisions are also available here.

The website also includes the numeric basis of all graphs and tables in the printed version as well as a PowerPoint presentation (ppt) of the graphs.

Note

Briquettes

Wood briquettes have been included in firewood, households for the years 2013-2020.

LNG

LNG (liquefied natural gas) has been included in domestic maritime transport and hidden for reasons of confidentiality. The distribution between freight and passenger transport follows the fuel gas/diesel.

Electricity

The Danish Energy Agency's data supplier for the electricity statistics, Energinet, is reorganising its databases on electricity production and consumption. This means there is some uncertainty in the electricity balance sheet.

Energy Statistics 2020

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The Danish Energy Agency is an agency under the Danish Ministry of Climate, Energy and Utilities.

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

Decrease in energy consumption, increase in consumption of renewable energy

Energy consumption by area of consumption

The final adjusted gross energy consumption decreased by 6.5%. Gross energy consumption for *transport* was 19.2% lower in 2020 than the year before, of which energy consumption for road transport decreased by 7.3% and aviation fell by 67.5%.

The total climate-adjusted energy consumption of the *agriculture and industry sector* was 1.1% higher in 2020 than the year before. Energy consumption by *manufacturing industries* increased by 1.2%. In *commercial and public services* climate adjusted energy consumption was 2.8% lower in 2020 than in 2019, while climate-adjusted consumption by households rose by 0.7%. The changes in energy consumption should be considered in light of the Covid-19 pandemic that affected all sectors in 2020.

Observed energy consumption decreased in 2020

The observed energy consumption decreased to 656 PJ in 2020; a decrease of 7.9%. The trends in consumption of the individual types of fuel follow previous years. Note in particular that this is the highest figure for net imports recorded since 1990. Consumption of renewable energy etc. has increased while consumption of other fuels has fallen.

Adjusted gross energy consumption fell 6.6%

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 temperature year. The purpose of the adjusted calculations is to illustrate the trends underlying the development. *Adjusted gross energy consumption* was 700 PJ in 2020, which is 6.6% below the 2019 level. Compared with 1990, adjusted gross energy consumption has decreased by 14.5%. Coal and coke account for the largest drop at 80%, while renewable energy, which began from a low start point, accounted for the largest increase.

Share of RE in electricity supply

In 2020, electricity from renewables accounted for 68% of Danish domestic electricity supply, compared to 67.5% in 2019. Wind power accounted for 47%. Biomass accounted for 15.1% and solar energy, hydro and biogas accounted for the remaining 5.9%.

Energy production decreased

The Danish production of crude oil, natural gas and renewable energies etc. combined has seen a decrease of 23.9% in 2020 to 398 PJ. Production of crude oil decreased by 29.8% while production of natural gas decreased by 56.9%. Renewable energy etc. increased by 2.9%.

Increase in consumption of renewable energy

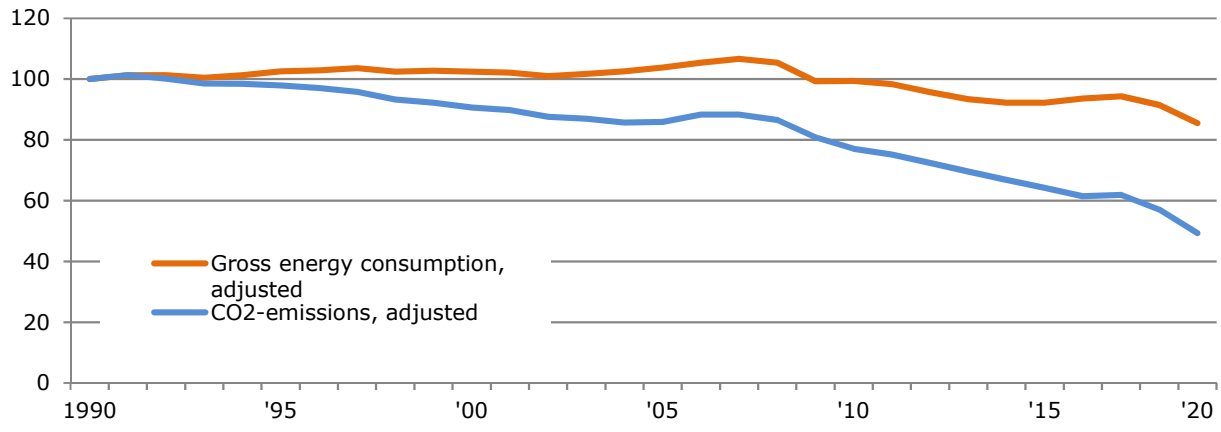
Consumption of renewable energy increased from 251 PJ in 2019 to 260 PJ in 2020, which corresponds to an increase of 3.7%. The development is primarily due to an increase in the consumption of wood chips of 6 PJ and biogas consumption of 5 PJ. In contrast, consumption of wood pellets fell by 6 PJ. Calculated according to the EU's method of calculation, renewable energy accounted for about 41.5% of energy consumption in 2020 as opposed to 37.2% in 2019.

Decrease in CO_2 emissions

Observed CO_2 emissions from energy consumption were 26.3 million tonnes in 2020 and fell by 4.9 tonnes compared with 2019. Danish adjusted CO_2 emissions have gone down by 50.4%. Adjusted for fuel consumption linked to foreign trade in electricity and climatic variations, CO_2 emissions decreased to 30.1 million tonnes; a decrease of 13.6%. Since 1990, Danish adjusted CO2 emissions have gone down by 50.7%.

Greenhouse gas emissions for 2020

A preliminary statement of total observed emissions of greenhouse gases in Denmark shows a drop of 41.5% from 1990 to 2020, while total adjusted emissions of greenhouse gases shows a drop of 42.6% in the same period.

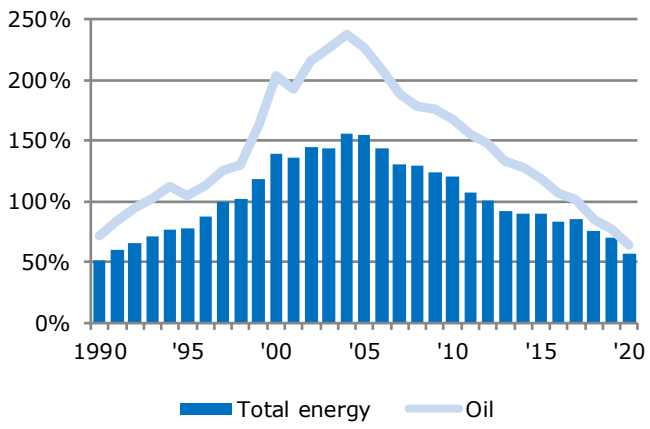


Energy balance 2020

Direct energy content [TJ]	Total	Crude oil and refinery feedstocks	Oil products	Natural gas	Coal and coke	Waste, non-renewable	Renewable energy	Electricity	District heating	Gas works gas
Total energy consumption	**656 303**	**302 664**	**-66 007**	**83 948**	**33 266**	**18 723**	**258 824**	**24 777**	**107**	**-**
Primary energy production	398 057	151 369	-	49 863	-	15 990	180 836	-	-	-
Recycling	2	-	2	-	-	-	-	-	-	-
Imports	761 321	200 734	289 473	92 658	26 955	2 733	81 723	66 938	107	-
Exports	-451 381	-49 178	-293 380	-59 641	-4 635	-	-2 385	-42 161	-	-
Border trade	-10 553	-	-10 553	-	-	-	-	-	-	-
International marine bunkers	-23 301	-	-23 301	-	-	-	-	-	-	-
Stock changes	-18 635	1 216	-31 824	5 483	7 402	-	- 912	-	-	-
Statistical differences, input from blending	792	-1 477	3 577	-4 414	3 543	-	- 438	-	- 0	-
Energy sector	**-32 961**	**-302 664**	**288 813**	**-13 436**	**-**	**-**	**-**	**-5 666**	**- 8**	**-**
Extraction and gasification	-13 436	-	-	-13 436	-	-	-	-	-	-
Petroleum products	303 286	-	303 286	-	-	-	-	-	-	-
Used in refineries	-318 172	-302 664	-14 473	-	-	-	-	-1 027	- 8	-
Used in distribution	-4 639	-	-	-	-	-	-	-4 639	-	-
Transformation	**-22 428**	**-**	**-3 363**	**-18 031**	**-28 792**	**-17 006**	**-180 440**	**97 205**	**127 421**	**578**
Large-scale units	-16 669	-	-1 043	-2 204	-28 780	-	-49 455	25 049	39 764	-
Wind turbines and hydropower plants	-	-	-	-	-	-	-58 850	58 850	-	-
Small-scale units	-2 055	-	- 22	-5 689	-	-2 373	-18 791	7 234	17 587	-
District heating units	184	-	- 348	-8 274	- 12	- 223	-24 737	-3 166	36 945	-
Autoproducers	- 42	-	-1 950	-1 422	-	-14 410	-28 404	12 308	33 835	-
Gas works	- 65	-	- 0	- 442	-	-	-202	-	-	578
Own use	-3 781	-	-	-	-	-	-	-3 070	- 710	-
Distribution losses etc.	**-29 509**	**-**	**-**	**- 92**	**-**	**-**	**-**	**-3 888**	**-25 506**	**- 23**
Final energy consumption	**-571 387**	**-**	**-219 443**	**-52 389**	**-4 474**	**-1 717**	**-78 367**	**-112 428**	**-102 014**	**- 555**
Non-energy use	-9 473	-	-9 473	-	-	-	-	-	-	-
Transport	-178 537	-	-165 806	- 278	-	-	-10 582	-1 870	-	-
Agriculture and industry	-125 911	-	-35 266	-24 521	-4 474	-1 465	-17 301	-37 485	-5 196	- 205
Commercial and public services	-76 450	-	-1 551	-7 069	-	- 252	-3 275	-33 668	-30 608	- 28
Households	-181 016	-	-7 347	-20 521	-	-	-47 209	-39 405	-66 211	- 322

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 2020 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 155%. Denmark was a net importer of energy in 2013 for the first time since 1996. In 2020, the degree of self-sufficiency in energy was 57% as opposed to 70% the year before.

Denmark has been more than self-sufficient in oil from 1993 to 2017, resulting in annual net exports. However, the degree of self-sufficiency in oil fell to less than 100% in 2018 and in 2020, the degree of self-sufficiency in oil was 64%. The degree of self-sufficiency in oil peaked in 2004 and has been falling ever since.

Production of primary energy

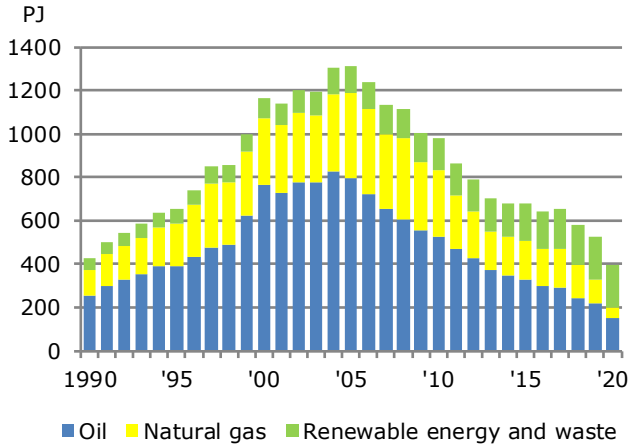
Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total production	**424 361**	**1 164 525**	**1 311 683**	**978 612**	**676 431**	**580 942**	**522 740**	**398 057**	**-6.2%**
Crude oil	255 959	764 526	796 224	522 733	330 662	243 629	215 741	151 369	**-40.9%**
Natural gas	115 967	310 307	392 868	307 425	173 510	155 071	115 740	49 863	**-57.0%**
Renewable energy	45 461	76 016	105 585	131 306	156 389	166 237	175 123	180 836	**298%**
Waste, non-renewable	6 975	13 676	17 006	17 148	15 870	16 005	16 135	15 990	**129%**

Production and consumption of renewable energy

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Production of renewable energy	**45 461**	**76 016**	**105 585**	**131 306**	**156 389**	**166 237**	**175 123**	**180 836**	**298%**
Solar	100	335	419	657	3 713	6 192	6 426	7 526	**7441%**
Wind	2 197	15 268	23 810	28 114	50 879	50 047	58 139	58 789	**2576%**
Hydro	101	109	81	74	65	54	61	61	**-39.1%**
Geothermal	48	58	172	212	140	110	68	46	**-4.5%**
Biomass	39 996	54 039	73 542	92 268	87 306	86 267	82 369	79 892	**99.7%**
- Straw	12 481	12 220	18 485	23 323	19 788	17 606	17 963	18 929	**51.7%**
- Wood chips	1 724	2 744	6 082	11 352	14 744	22 375	21 275	18 696	**985%**
- Firewood	8 757	12 432	17 667	23 779	21 943	17 206	14 758	13 686	**56.3%**
- Wood pellets	1 575	2 984	3 262	2 407	2 697	3 495	2 149	2 025	**28.6%**
- Wood waste	6 191	6 895	6 500	8 500	8 102	5 790	6 360	6 934	**12.0%**
- Waste, renewable	8 524	16 715	20 786	20 959	19 396	19 561	19 720	19 543	**129%**
- Biodiesel *)	..	..	..	..	..	..	..	..	•
- Biooil	744	49	761	1 949	636	234	143	79	**-89.4%**
Biogas	752	2 912	3 830	4 337	6 285	13 333	16 544	21 379	**2743%**
Heat pumps	2 267	3 296	3 731	5 643	8 001	10 235	11 516	13 143	**480%**
Imports of renewable energy	**-**	**2 466**	**18 918**	**39 483**	**52 462**	**74 328**	**76 956**	**81 723**	•
Firewood	-	-	1 963	2 939	2 547	1 997	1 540	1 521	•
Wood chips	-	305	1 521	4 865	2 808	6 311	9 559	17 963	•
Wood pellets	-	2 161	12 802	27 675	34 243	52 172	51 586	45 549	•
Waste, renewable	-	-	-	-	2 559	2 711	3 119	3 341	•
Bioethanol	-	-	-	1 118	1 818	1 812	1 954	3 437	•
Biodiesel	-	-	2 632	2 886	8 485	9 325	9 199	9 913	•
Exports of renewable energy	**-**	**-**	**2 632**	**2 846**	**1 084**	**2 116**	**1 272**	**2 385**	•
Biodiesel	-	-	2 632	2 846	1 084	2 116	1 272	2 385	•
Stock changes, stat. diffs. etc.	**-**	**23**	**6**	**1**	**- 259**	**89**	**- 302**	**- 521**	•
Consumption of renewable energy	**45 461**	**78 505**	**121 877**	**167 944**	**207 508**	**238 539**	**250 505**	**259 653**	**471%**

**) Production of biodiesel has been included in imports of biodiesel.*

Primary energy production



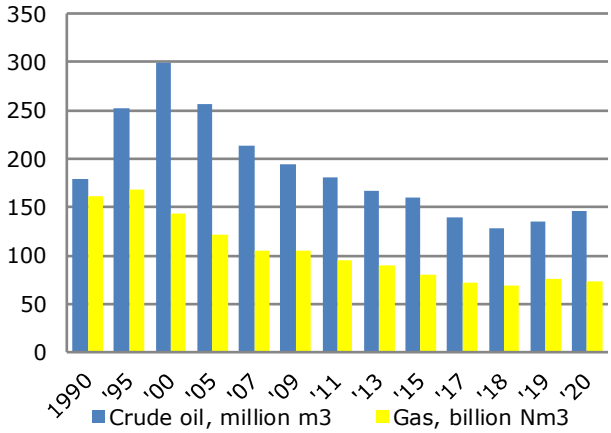
Primary energy refers to crude oil, natural gas, renewable energy (including renewable waste) and non-renewable waste.

In 2020, primary energy production was 398 PJ, as opposed to 523 PJ in 2019. This is a decrease by 23.9% compared to last year. 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 29.8% and 56.9% respectively in 2020, while production of renewable energy etc. increased by 2.9%.

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.

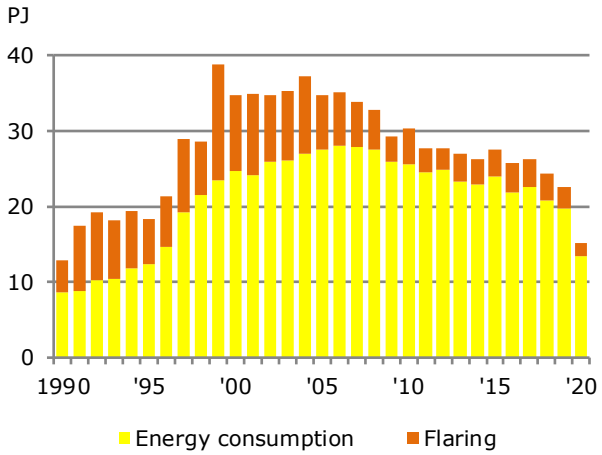
At the end of 2009, the Danish Energy Agency changed the classification system for oil and gas reserves, introducing the category contingent resources. For the period 2009-2020, the statement includes the sum of reserves and contingent resources so that comparison with earlier statements is possible.

At the end of 2020, the sum of reserves and contingent resources totaled 146 million m^3 oil and 74 billion Nm^3 gas.

Danish oil and gas reserves have in the period 2011-2017 been calculated every two years.

Source: Ressourceopgørelse og prognoser (Published September 2020, by the Danish Energy Agency)

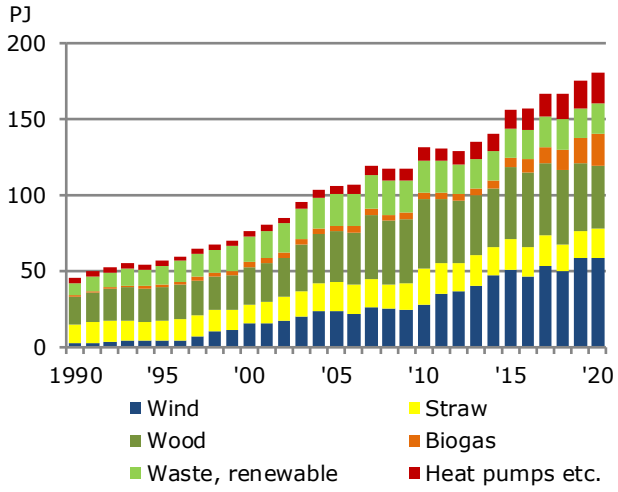
Natural gas consumption and flaring on platforms in the North Sea



Extraction of crude oil and natural gas requires natural gas consumption for production as well as for transport and off-loading ashore. In 2020 consumption was 13.5 PJ, corresponding to 16.0% of total Danish natural gas consumption. In 2019 consumption on platforms was 19.7 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 emission inventories, and is covered by the EU Emission Trading System (EU ETS). In 2020, flaring of natural gas was calculated at 1.6 PJ compared with 2.8 PJ in 2019.

Production of renewable energy by energy product



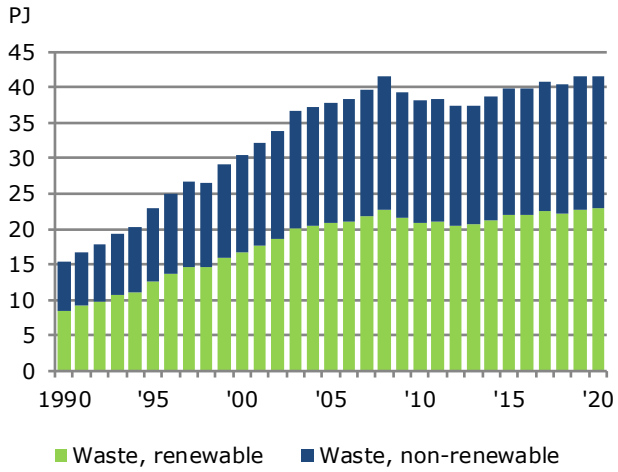
Renewable energy includes wind power, wood, straw, biogas, renewable waste and others (hydropower, geothermal energy, solar energy and heat pumps).

Production of renewable energy was 180.8 PJ in 2020, which is an increase of 3.3% compared to 2019. Production of renewable energy grew by 297.8% during the period 1990 to 2020.

In 2020, wind power production was 58.8 PJ, which is an increase of 1.1% compared with 2019.

Production from straw, wood products and renewable waste in 2020 was 18.9 PJ, 41.3 PJ and 19.5 PJ, respectively.

Consumption of waste

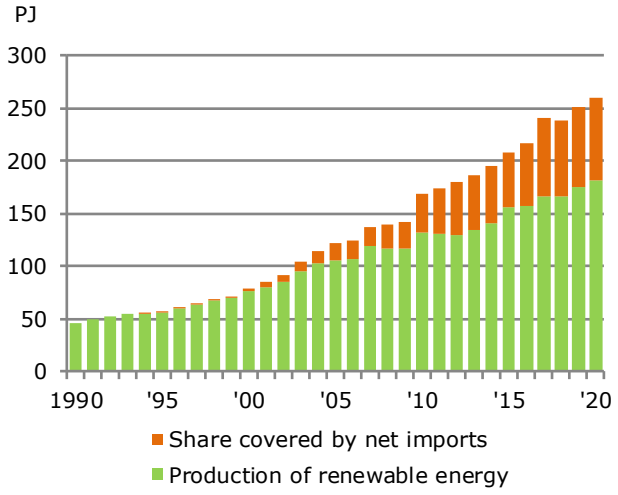


Consumption of waste for the production of electricity and district heating has increased significantly over time. Total consumption of waste increased by 0.2% in 2020 compared with 2019. Compared with 1990, waste consumption for energy purposes increased by 168% in 2020.

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.

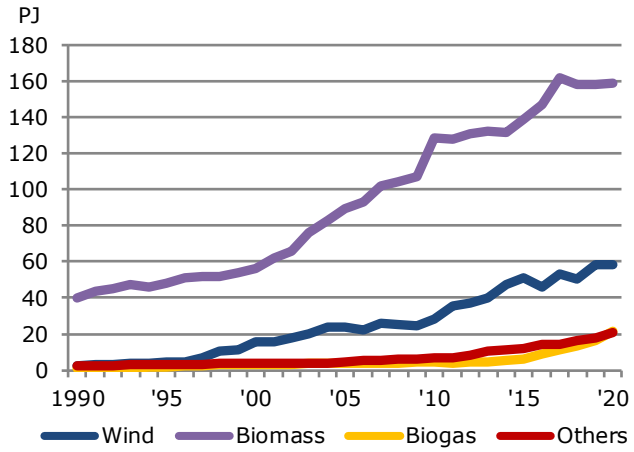
Consumption of renewable energy



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 78.8 PJ in 2020.

In 2020 consumption of renewable energy was 259.7 PJ, which is 3.7% more than the year before. Observed consumption of renewable energy was 45.5 PJ in 1990.

Renewable energy - consumption by energy product

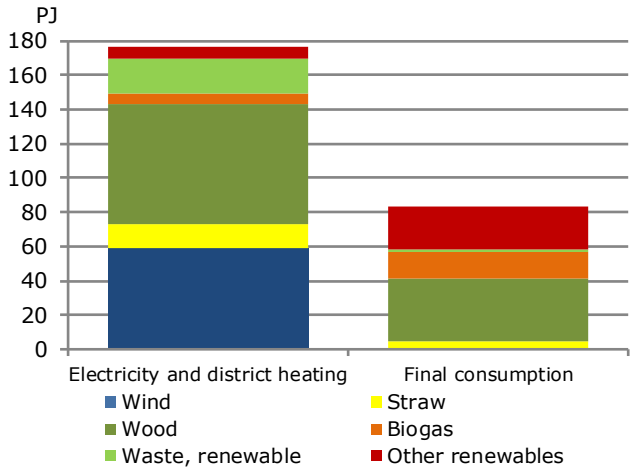


Consumption of renewable energy increased from 250.5 PJ in 2019 to 259.7 PJ in 2020.

Consumption of biomass, including liquid biofuels increased from 158.1 PJ in 2019 to 159.2 PJ in 2020, and wind power increased from 58.1 PJ to 58.8 PJ.

Since 2000, the consumption of biomass has almost tripled, primarily due to increased consumption of wood chips and wood pellets. In the period 2000 to 2020 the increase was 1102% and 825%, respectively.

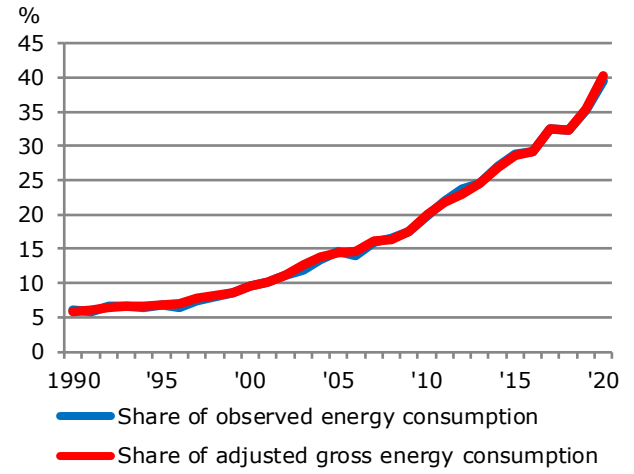
Use of renewable energy in 2020



Total consumption of renewable energy in 2020 (production plus net imports) was 260.2 PJ, of which 176.9 PJ was used in the production of electricity and district heating. Wind power, wood and renewable waste were predominant in the production of electricity and district heating, accounting for 58.8 PJ, 69.9 PJ and 20.8 PJ, respectively. Consumption of straw and biogas accounted for 14.2 PJ and 6.1 PJ, respectively.

In 2020, final energy consumption consisted of 83.3 PJ renewable energy. This was used for process consumption and heating in the agriculture and industry sector, in the commercial and public services sector, as well as for heating in households and for transport.

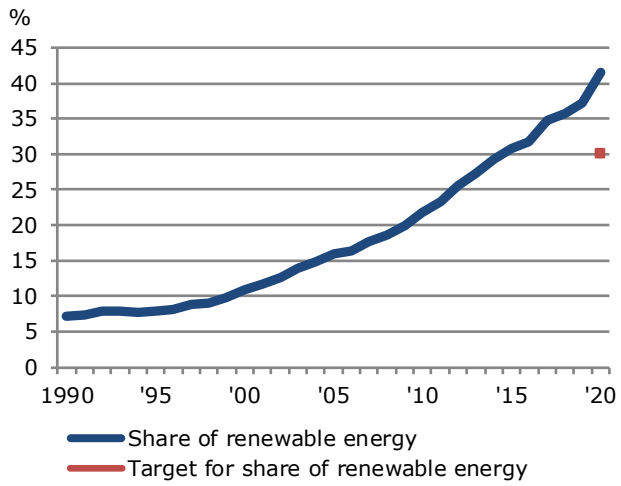
Renewable energy - share of total energy consumption



Observed energy consumption shows the registered amount of energy consumed in a calendar year. In 2020 renewable energy covered 39.6% of total observed energy consumption, as opposed to 35.2% the previous year. 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 2020 renewable energy's share of adjusted gross energy consumption was 40.2%, as opposed to 35.5% 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.

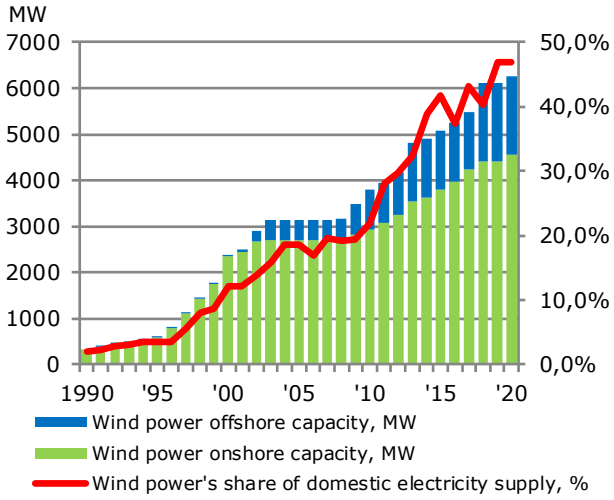
The EU's calculation is based on final energy consumption expressed as energy consumption by end-users, excl. border trade and consumption for non-energy purposes, incl. distribution losses and own use in the production of electricity and district heating. In the EU method, renewable energy is defined 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 41.5% in 2020. As described above, Denmark has committed itself to achieving a goal of 30% renewable energy in energy consumption.

This is 2.0 percentage points higher than if the share of renewable energy is calculated as the share of the total gross energy consumption (p. 8).

Sources: 2004-2019 Eurostat. 1990-2003 and 2020 Danish Energy Agency calculations.

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

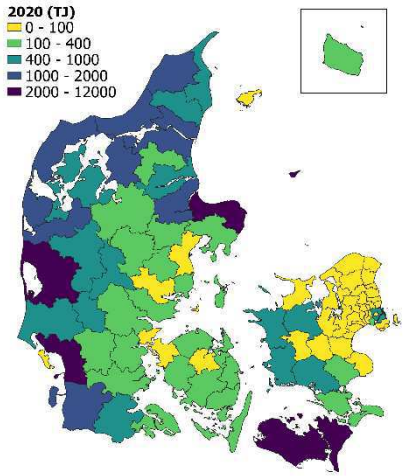


In 2020, wind power production accounted for 47.0% of domestic electricity supply, compared with 46.8% in 2019 and 1.9% in 1990.

Wind power capacity was 6259 MW in 2020, as opposed to 6103 MW the year before. In 2020 onshore and offshore wind turbine capacities were 4559 MW and 1701 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 58.8 PJ in 2020. Of this, onshore installations accounted for 59.6% and offshore installations accounted for 40.4%.

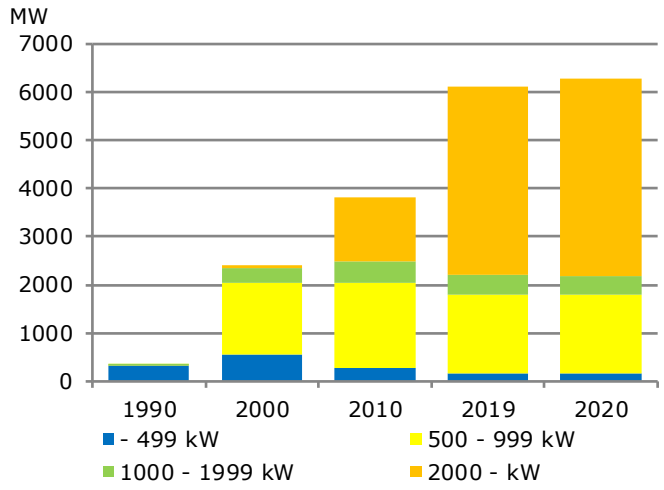
Wind power generation from onshore installations varies across Denmark. Municipalities with west-facing coastlines have many wind turbines, and the favourable wind conditions in these areas contribute to high production from these installations.

In 2020 the turbines in the ten municipalities with the highest wind power production thus together accounted for a production of 18.8 PJ, or 53.6% of total wind power production from onshore installations.

Wind power - number of turbines and capacity by size

	1990	2000			2019			2020		
	Onshore	Onshore	Offshore	Total	Onshore	Offshore	Total	Onshore	Offshore	Total
Total no. of turbines	**2 666**	**6 194**	**41**	**6 235**	**5 673**	**558**	**6 231**	**5 659**	**558**	**6 217**
- 499 kW	2 656	3 652	11	3 663	2 219	-	2 219	2 190	-	2 190
500 - 999 kW	8	2 283	10	2 293	2 380	10	2 390	2 372	10	2 382
1 000 - 1 999 kW	2	251	-	251	333	-	333	324	-	324
2 000 - kW	-	8	20	28	741	548	1 289	773	548	1 321
Total wind power capacity [MW]	**326**	**2 340**	**50**	**2 390**	**4 402**	**1 701**	**6 103**	**4 559**	**1 701**	**6 259**
- 499 kW	317	533	5	538	172	-	172	167	-	167
500 - 999 kW	6	1 512	5	1 517	1 622	5	1 627	1 616	5	1 621
1 000 - 1 999 kW	3	279	-	279	413	-	413	399	-	399
2 000 - kW	-	16	40	56	2 195	1 696	3 891	2 376	1 696	4 072

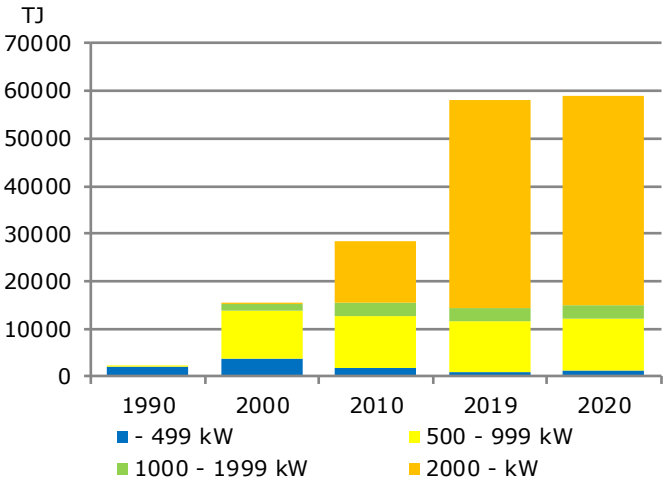
Wind power capacity by size of turbine



The total number of wind turbines decreased by roughly 14 from 2019 to 2020, and the total wind power capacity rose by 157 MW.

For some years now, the trend has been toward fewer but larger turbines. The number of small wind turbines with capacities up to 499 kW has been reduced by 1473 turbines since 2000. The number of large wind turbines with capacities above 2 MW has increased by 1293 turbines.

Wind power production by size of turbine



The development toward larger turbines is even more evident in terms of wind power production. From 2000 to 2020, production from turbines up to 499 kW fell by 2,786 TJ, while production from turbines of more than 2 MW rose by 43,798 TJ. However, from 2019 to 2020, wind power capacity rose by 2.6%, while wind production rose by only 1.2%.

Where turbines larger than 2 MW accounted for 65.0% of wind power capacity, in 2020 these turbines produced 74.5% of the total energy from wind turbines.

Similarly, in 2020 wind turbines with a capacity up to 499 kW accounted for only 1.9% of the total production.

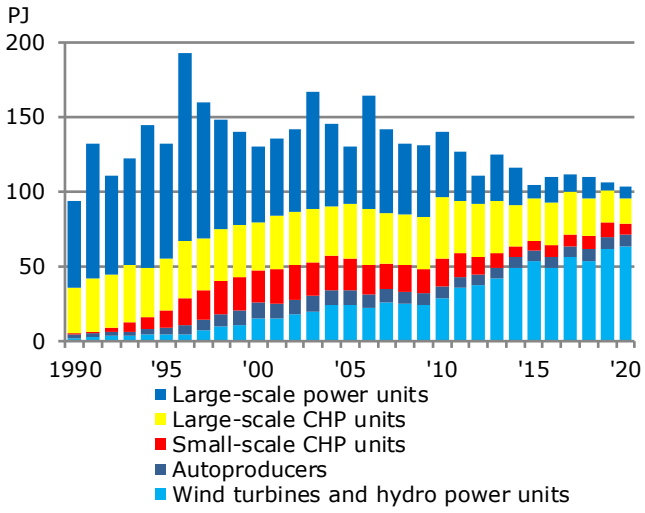
Wind turbines with a capacity up to 499 kW accounted for only 2.7% of the total capacity in 2020, whereas this figure was 22.5% in 2000.

Electricity production by type of producer

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90 - '20
Total electricity production(gross)	**93 518**	**129 776**	**130 469**	**139 906**	**104 164**	**109 331**	**106 282**	**103 441**	**10.6%**
Large-scale power units	7 494	8 871	49	336	46	46	74	63	-99.2%
Large-scale CHP units	80 639	73 809	74 932	83 940	37 375	38 777	27 002	24 985	-69.0%
- of which electricity production	50 157	41 584	38 402	43 221	8 936	13 943	5 716	7 913	-84.2%
Small-scale CHP units	988	21 547	21 254	19 216	5 765	9 258	9 478	7 234	632%
Autoproducers	2 099	10 168	10 336	8 203	7 858	7 719	8 060	8 056	284%
- Electricity production [1]	-	9	7	6	3	4	3	3	•
- CHP [1]	2 099	10 158	10 328	8 197	7 855	7 715	8 058	8 053	284%
Wind turbines [1]	2 197	15 268	23 810	28 114	50 879	50 047	58 139	58 789	2576%
Hydropower units [1]	101	109	81	74	65	54	61	61	-39.1%
Photovoltaics [1]	-	4	8	22	2 175	3 431	3 468	4 252	•
Own use in production	**-6 118**	**-5 776**	**-6 599**	**-7 159**	**-3 670**	**-3 795**	**-3 001**	**-3 070**	**-49.8%**
Large-scale power units	- 590	- 312	- 2	- 17	- 0	- 7	- 8	- 3	-99.5%
Large-scale CHP units	- 5 509	- 4 993	- 6 033	- 6 602	- 3 303	- 3 351	- 2 515	- 2 588	-53.0%
Small-scale CHP units	- 19	- 472	- 564	- 541	- 368	- 437	- 477	- 479	2420%
Total electricity production (net)	**87 400**	**123 999**	**123 870**	**132 747**	**100 493**	**105 536**	**103 281**	**100 371**	14.8%
Net imports of electricity	25 373	2 394	4 932	- 4 086	21 282	18 808	20 919	24 777	-2.3%
Domestic electricity supply	**112 773**	**126 393**	**128 802**	**128 661**	**121 775**	**124 344**	**124 201**	**125 148**	11,0%
Transformation consumption	-	- 1	-	- 110	- 1 073	- 1 193	- 1 563	- 3 166	•
Distribution losses etc. [2]	- 8 886	- 7 650	- 5 573	- 9 482	- 6 404	- 7 574	- 5 845	- 3 888	-56.2%
Domestic electricity consumption	**103 887**	**118 742**	**123 228**	**119 068**	**114 298**	**115 577**	**116 792**	**118 094**	13.7%
Consumption in the energy sector	- 1 748	- 1 893	- 2 761	- 3 445	- 3 386	- 4 274	- 5 732	- 5 666	224%
Final electricity consumption	**102 139**	**116 849**	**120 467**	**115 623**	**110 912**	**111 303**	**111 060**	**112 428**	10.1%

[1] Gross and net production are by definition identical. [2] Determined as the difference between supply and consumption.

Electricity production by type of producer



In 2020, electricity production was 103.4 PJ, which is a decrease of 2.7% compared with 2019. The reason is mainly due to higher net import of electricity in 2020 as opposed to 2019.

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 103.4 PJ, 25.0 PJ (24.2%) were from large-scale power units – 7.9 PJ (7.7%) 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 7.2 PJ (7.0%) and 8.1 PJ (7.8%), respectively. Wind turbines generated 58.8 PJ (56.8%) and photovoltaics generated 4.3 PJ (4.1%). Solar is included under autoproducers in this figure.

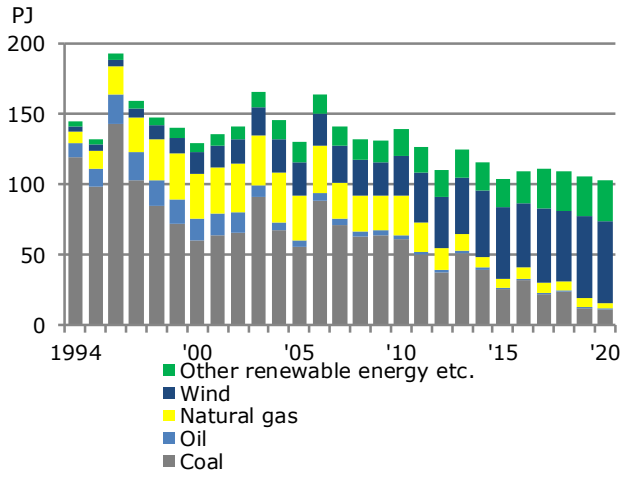
Electricity production by fuel

Direct energy content [TJ]	1994	2000	2005	2010	2015	2018	2019	2020	Change '94 - '20
Total electricity production (gross)	**144 707**	**129 776**	**130 469**	**139 906**	**104 164**	**109 331**	**106 282**	**103 441**	**-28.5%**
Oil	9 547	15 964	4 933	2 783	1 122	950	871	947	-90.1%
- of which orimulsion	-	13 467	-	-	-	-	-	-	•
Natural gas	8 206	31 589	31 606	28 464	6 499	6 922	6 808	3 576	-56.4%
Coal	119 844	60 022	55 665	61 222	25 596	23 654	11 920	11 022	-90.8%
Surplus heat	-	139	-	-	-	-	-	-	•
Waste, non-renewable	836	2 002	2 938	2 689	2 706	2 535	2 839	2 783	233%
Renewable energy	**6 275**	**20 060**	**35 326**	**44 749**	**68 242**	**75 271**	**83 845**	**85 114**	1256%
Solar	-	4	8	22	2 175	3 431	3 468	4 252	•
Wind	4 093	15 268	23 810	28 114	50 879	50 047	58 139	58 789	1336%
Hydro	117	109	81	74	65	54	61	61	-47.7%
Biomass	1 743	3 928	10 410	15 253	13 396	19 004	19 140	18 887	983%
- Straw	293	654	3 088	3 968	2 080	1 704	1 792	1 771	505%
- Wood	429	828	3 730	7 998	7 987	14 196	13 878	13 714	3093%
- Biooil	-	0	1	1	22	5	-	-	•
- Waste, renewable	1 021	2 447	3 591	3 286	3 307	3 099	3 470	3 401	233%
Biogas	321	751	1 017	1 285	1 726	2 737	3 036	3 124	874%

Electricity from renewable energy: Share of domestic electricity supply

[%]	1994	2000	2005	2010	2015	2018	2019	2020	Change '94 - '20
Renewable energy	**5,3**	**15,9**	**27,4**	**34,8**	**56,0**	**60,5**	**67,5**	**68,0**	**1189**
Solar	-	0,0	0,0	0,0	1,8	2,8	2,8	3,4	•
Wind	3,4	12,1	18,5	21,9	41,8	40,2	46,8	47,0	1265
Hydro	0,1	0,1	0,1	0,1	0,1	0,0	0,0	0,0	-50
Biomass	1,5	3,1	8,1	11,9	11,0	15,3	15,4	15,1	930
- Straw	0,2	0,5	2,4	3,1	1,7	1,4	1,4	1,4	475
- Wood	0,4	0,7	2,9	6,2	6,6	11,4	11,2	11,0	2935
- Biooil	-	0	0	0	0	0	-	-	•
- Waste, renewable	0,9	1,9	2,8	2,6	2,7	2,5	2,8	2,7	217
Biogas	0,3	0,6	0,8	1,0	1,4	2,2	2,4	2,5	826

Electricity production by fuel



In 2020, 11.0 PJ (10.7%) of total electricity production was generated by coal. Natural gas accounted for 3.6 PJ (3.5%) of electricity production. Oil and non-renewable waste accounted for 0.9 PJ (0.9%) and 2.8 PJ (2.7%) of the electricity production, respectively.

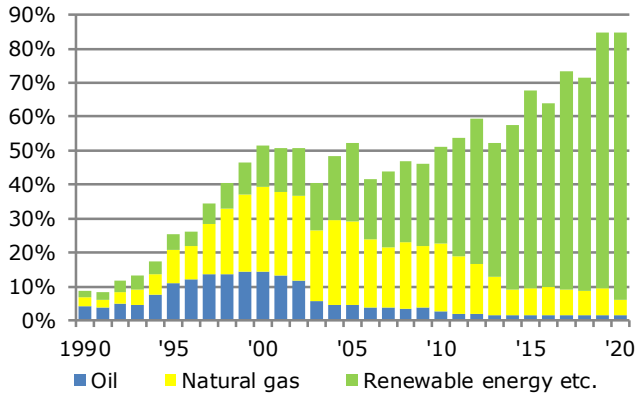
Electricity production based on renewables was 85.1 PJ (82.3%) in 2020. This is 3.4 percentage points higher than production in 2019.

Wind turbines contributed therefore 58.8 PJ (56.8%), while electricity production based on biomass and biogas contributed respectively 18.9 PJ (18.3%) and 3.1 PJ (3.0%).

Fuel consumption for electricity production

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90 - '20
Total fuel consumption	**227 001**	**276 974**	**265 330**	**286 006**	**180 654**	**187 711**	**169 374**	**166 520**	**-26.6%**
Oil	9 215	40 356	11 867	8 087	3 110	2 644	2 530	2 650	-71.2%
- of which orimulsion	-	33 503	-	-	-	-	-	-	•
Natural gas	6 181	68 868	65 912	57 229	14 302	13 936	13 467	7 292	**18.0%**
Coal	207 173	134 205	127 119	139 714	58 410	53 652	25 900	25 127	-87.9%
Waste, non-renewable	262	5 294	7 650	9 085	9 412	7 984	8 434	8 870	3287%
Renewable energy	**4 170**	**28 252**	**52 784**	**71 891**	**95 420**	**109 495**	**119 044**	**122 581**	**2840%**
Solar	-	4	8	22	2 175	3 431	3 468	4 250	•
Wind	2 197	15 268	23 810	28 114	50 879	50 047	58 139	58 789	2576%
Hydro	101	109	81	74	65	54	61	61	-39.1%
Biomass	1 428	11 009	26 470	40 808	38 665	50 448	51 332	53 309	3633%
- Straw	363	2 021	7 715	10 213	5 807	4 512	4 653	4 963	1267%
- Wood	745	2 518	9 405	19 492	21 248	36 164	36 372	37 505	4934%
- Biooil	-	0	0	-	107	13	-	-	•
- Waste, renewable	320	6 470	9 350	11 104	11 503	9 758	10 308	10 841	3287%
Biogas	444	1 861	2 415	2 872	3 635	5 516	6 043	6 172	1290%

Other fuels than coal for electricity production

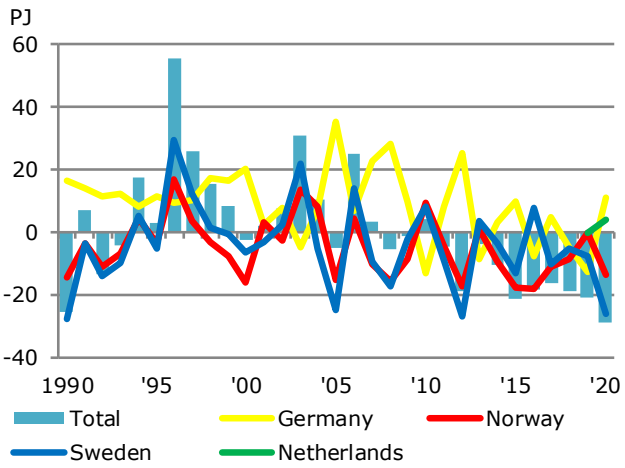


In the early 1990s, coal was the dominant fuel used in the production of electricity. In 1990, other types of fuel than coal only accounted for just 8.7% of total fuel consumption.

The share of fuels other than coal increased throughout the 1990s and in the period from 2000 to 2010 amounted to 40-52%. This was initially due to growth in the consumption of natural gas for electricity production, and later because of an increased use of renewable energy.

In recent years, this share has increased even more, driven by the growth in the share of renewable energy, and in 2020, oil, natural gas and renewable energy etc. together accounted for 84.9% of fuel consumption for electricity production.

Net exports of electricity by country



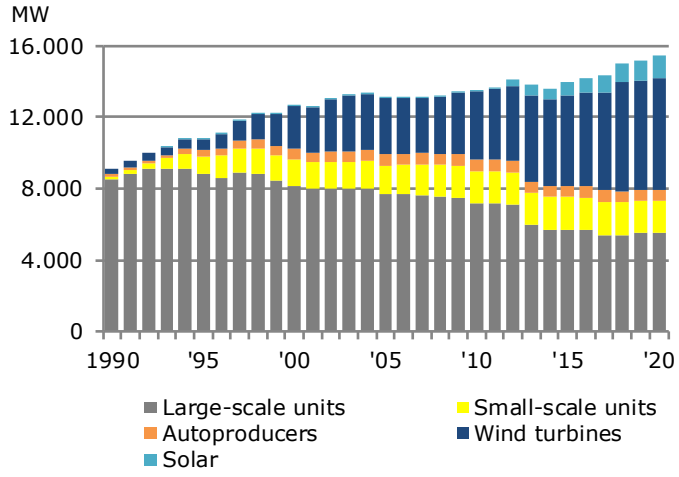
Danish foreign trade in electricity varies considerably from year to year. Foreign trade is strongly affected by price trends on the Nordic electricity exchange, Nordpool, which, in turn, is significantly influenced by varying precipitation patterns in Norway and Sweden, where electricity production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

In 2020, Denmark had overall net imports of electricity of 24.8 PJ. This was the result of net imports from Norway and Sweden of 13.5 PJ and 26.3 PJ and net exports to Germany and the Netherlands of 11.0 PJ and 4.0 PJ, respectively.

Electricity capacity, end of year

[MW]	1994	2000	2005	2010	2015	2018	2019	2020	Change '94 - '20
Total	**10 768**	**12 598**	**13 088**	**13 450**	**13 995**	**14 987**	**15 135**	**15 489**	**43.8%**
Large-scale units	9 126	8 160	7 710	7 175	5 690	5 369	5 544	5 544	-39.3%
- Electricity	2 186	1 429	834	840	839	815	815	815	-62.7%
- CHP	6 940	6 731	6 877	6 335	4 850	4 553	4 728	4 728	-31.9%
Small-scale units	773	1 462	1 579	1 819	1 836	1 860	1 814	1 788	131%
Autoproducers	339	574	657	638	604	638	587	586	72.8%
Solar	0	1	3	7	782	998	1 080	1 304	•
Wind	521	2 390	3 128	3 802	5 077	6 115	6 103	6 259	1101%
Hydro	8	10	11	9	7	7	7	7	-12.5%

Electricity capacity

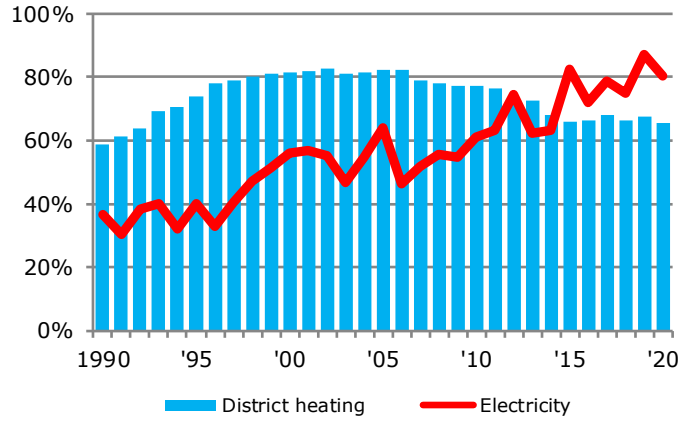


Up until the early 1990s electricity production capacity was dominated by the large-scale power units. Up through the 1990s, electricity capacity in small-scale units and secondary installations (autoproducers) increased. By the turn of the millennium, this capacity corresponded to a fifth of the capacity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

A number of units at the large-scale plants have now been scrapped and capacity at the large-scale plants therefore fell significantly. Capacity at small-scale units has increased slightly over recent years. Capacity at small-scale and autoproducers' installations now corresponds to one-third of the capacity of thermal plants.

The capacity of wind turbines and photovoltaic solar modules increased in 2020, to 6259 MW and 1304 MW, respectively.

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 2020, 80.2% of thermal electricity production (i.e. total production excl. wind, solar and hydropower) was produced simultaneously with heating. This is a decrease of 6.8 percentage points compared with 2019. It is primarily because electricity production without simultaneous production of heat (condensing power) at thermal plants has increased at the same time as CHP has fallen.

In 2020, 65.7% of district heating was produced with electricity. This is an increase of 2.0 percent point in comparison to 2019.

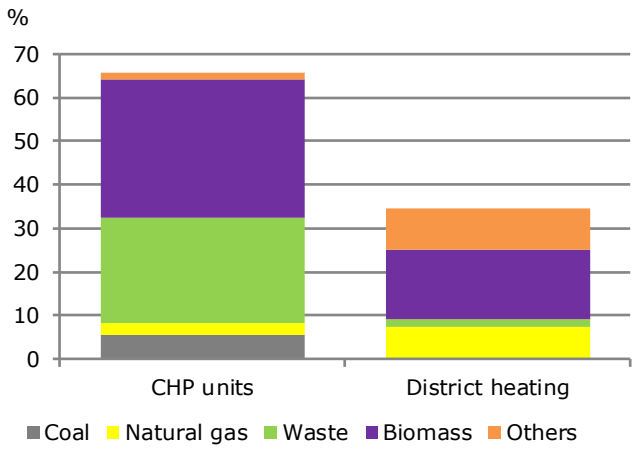
Heat production by type of production plant, 2020

	Number of units	Electricity capacity [MW]	Heat capacity [MJ/s]	Share of total heat supply [%]
Total	**2 874**	**7 149**	**26 364**	**100**
Large-scale CHP units	23	4728	5974	31.2
Small-scale CHP units	622	1834	2354	13.4
District heating units	1858		15637	28.9
Autoproducers				
- CHP units	247	587	1513	21.0
- Heating units	124		885	5.5

Heat production by primary fuel, 2020

	CHP by plant				Heat producers by plant		
Primary fuel of unit	Number of units	Electricity capacity [MW]	Heat capacity [MJ/s]	Share of total heat supply [%]	Number of units	Heat capacity [MJ/s]	Share of total heat supply [%]
Total	**887**	**7149**	**9823**	**65,5**	**1987**	**16540**	**34.5**
Coal	5	1739	2133	5,5	1	10	0.0
Natural gas	408	1662	2125	3,0	547	4909	7.3
Oil	74	168	161	0,2	260	2860	0.2
Waste	32	401	1206	24,1	8	104	2.0
Biogas	169	134	173	1,2	23	45	0.0
Biomass	30	1848	3319	31,5	348	1825	15.7
Biooil	0	0	0	0,0	42	557	0.1
Surplus heat	0	0	0	0,0	58	351	3.7
Solar heating	0	0	0	0,0	138	1072	2.0
Heat pumps and electric boilers	0	0	0	0,0	143	1959	3.3
No production in 2020	169	1195	706	0,0	419	2848	0.0

Heat supply by primary fuel, 2020



District heating supply takes place partly at CHP units and partly at units exclusively producing district heating. In 2020, CHP units produced 65.5%, of which: large-scale CHP units contributed 31.2%, small-scale CHP units contributed 13.4%, and CHP units at autoproducers contributed 21.0%.

Some CHP and district heating units use several types of fuel. A break down by types of primary fuel used by units in 2020 reveals that CHP units using coal as the primary fuel accounted for 5.5% of heat supply, while units using natural gas, waste or biomass as primary fuel accounted for 3.0%, 24.1% and 31.5%, respectively, of total district heating supply.

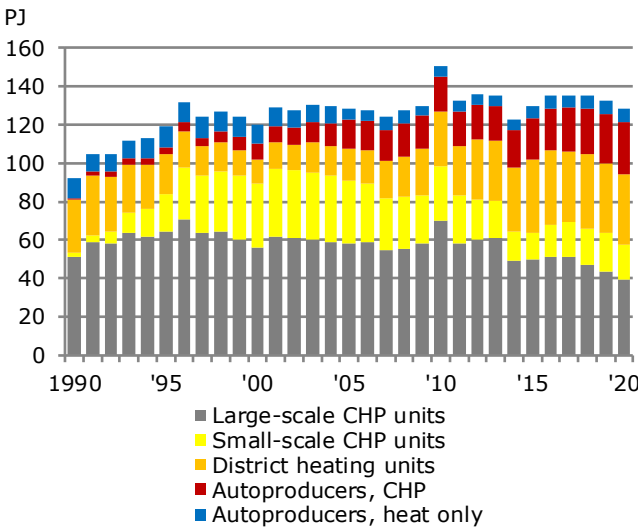
For units that produce district heating alone, units primarily firing with biomass contributed 15.7% and natural gas units contributed 7.3% of total district heating supply.

District heating production by type of production plant

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90 - '20
Total production (gross)	**92 411**	**119 702**	**128 382**	**150 393**	**130 036**	**135 026**	**132 262**	**128 131**	**38.7%**
Large-scale CHP units	51 511	56 271	58 248	69 955	50 098	46 930	43 721	39 764	-22.8%
Small-scale CHP units	2 145	33 027	32 727	28 462	13 777	18 770	20 196	17 587	720%
District heating by type of producer	27 755	12 516	16 621	28 816	38 218	39 074	36 167	36 945	33.1%
Autoproducers									
- CHP units [1)]	694	8 375	14 884	17 625	21 589	23 597	25 560	26 811	3763%
- Heating units [1)]	10 306	9 513	5 901	5 537	6 354	6 654	6 618	7 023	-31.9%
Consumption in production	**-**	**-1 539**	**-1 303**	**-1 207**	**- 623**	**- 755**	**- 886**	**- 710**	•
Large-scale CHP units	-	- 866	- 384	- 331	-	-	-	-	•
Small-scale CHP units	-	- 637	- 656	- 643	- 321	- 501	- 510	- 508	•
District heating units	-	- 36	- 262	- 233	- 302	- 254	- 375	- 203	•
Total production (net)	**92 411**	**118 163**	**127 079**	**149 187**	**129 413**	**134 270**	**131 377**	**127 421**	**37.9%**
Net imports	122	144	153	174	151	114	107	107	-12.2%
Domestic supply	**92 533**	**118 307**	**127 232**	**149 360**	**129 564**	**134 384**	**131 483**	**127 528**	**37.8%**
Consumption in refineries	- 428	- 275	- 355	- 584	- 480	- 6	- 7	- 8	-98.1%
Distribution losses	-18 507	-23 661	-25 446	-29 872	-25 913	-26 877	-26 297	-25 506	37.8%
Final consumption	**73 599**	**94 370**	**101 430**	**118 904**	**103 171**	**107 501**	**105 180**	**102 014**	**38.6%**

[1)] *Gross and net productions are by definition identical.*

District heating production by type of production plant



District heating production is generated at large-scale CHP units, small-scale CHP units, district heating units and by auto producers such as industrial companies, horticulture and waste treatment facilities.

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 auto producers such as CHP units, at CHP units at waste treatment facilities, in industry and in horticulture etc. increased.

From 2002 to 2015, the production from small-scale CHP units has decreased substantially. However from 2015 to 2019 the production once again increased slightly, after which it fell again in 2020.

In 2020, total district heating production was 128.1 PJ, which is a decrease of 3.1% compared with 2019. Compared with 2000, district heating production increased by 7.0%; compared with 1990 it increased by 38.7%.

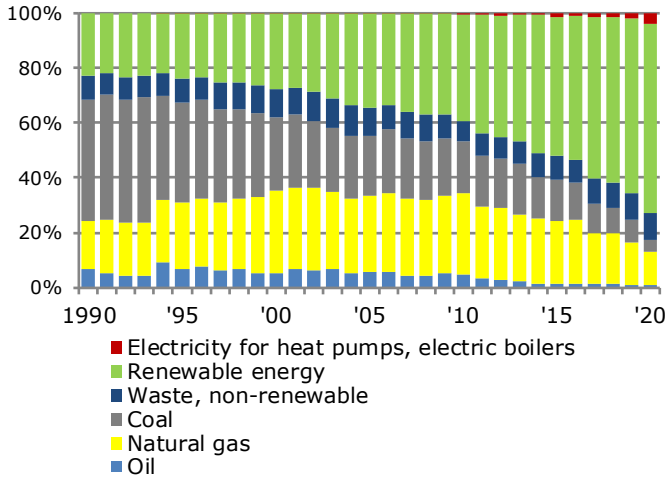
District heating production by fuel

Direct energy content [TJ]	1994	2000	2005	2010	2015	2018	2019	2020	Change '94 - '20
Total production (gross)	**113 103**	**119 702**	**128 382**	**150 393**	**130 036**	**135 026**	**132 262**	**128 131**	**13.3%**
Oil	6 335	4 433	6 103	4 627	1 281	1 290	1 088	909	-85.6%
- of which orimulsion	-	1 291	-	-	-	-	-	-	•
Natural gas	25 370	41 620	39 377	44 844	23 654	20 478	16 850	11 893	-53.1%
Coal	55 748	38 873	34 189	36 337	26 050	16 509	12 691	7 284	-86.9%
Surplus heat	2 838	3 676	3 174	2 518	3 130	4 070	4 321	4 625	62.9%
Electricity excl. heat pumps	-	-	-	110	1 036	1 082	1 423	2 756	•
Electricity, heat pumps	23	9	2	0	29	114	152	389	1566%
Waste, non-renewable	6 084	8 651	10 713	10 627	12 245	12 676	13 194	13 480	122%
Renewable energy	**16 704**	**22 440**	**34 823**	**51 331**	**62 610**	**78 805**	**82 542**	**86 795**	**420%**
Solar	6	24	53	139	956	2 130	2 334	2 616	45431%
Geothermal	21	29	86	106	70	55	34	23	8%
Biomass	16 304	21 462	33 509	49 912	59 329	72 773	75 855	78 595	382%
- Straw	4 318	5 696	7 681	11 507	11 359	10 169	10 594	11 633	169%
- Wood	4 327	5 153	12 086	23 731	32 495	46 916	49 006	50 417	1065%
- Biooil	223	39	650	1 685	508	195	129	69	-68.9%
- Waste, renewable	7 436	10 574	13 093	12 989	14 966	15 493	16 126	16 476	122%
Biogas	348	903	1 169	1 173	2 173	3 543	3 902	4 520	1200%
Heat pumps	25	22	6	0	82	303	416	1 041	4137%

Fuel consumption for district heating production

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90 - '20
Total fuel consumption	**69 833**	**73 249**	**78 764**	**95 889**	**87 357**	**90 778**	**88 545**	**84 734**	**21.3%**
Oil	4 766	3 726	4 322	4 554	1 039	1 142	867	714	-85.0%
- of which orimulsion	-	646	-	-	-	-	-	-	•
Natural gas	12 131	22 203	22 044	28 454	20 134	16 845	13 417	10 297	-15.1%
Coal	30 898	19 459	17 121	18 245	13 117	8 338	7 621	3 665	-88.1%
Electricity	-	75	76	149	1 121	1 247	1 626	3 234	•
Waste, non-renewable	6 289	7 675	8 138	7 122	7 649	8 349	8 422	8 136	29.4%
Renewable energy	**15 749**	**20 112**	**27 063**	**37 364**	**44 296**	**54 857**	**56 592**	**58 687**	**273%**
Solar	6	24	53	143	956	2 157	2 347	2 663	44282%
Geothermal	48	58	172	212	140	110	68	46	-4%
Biomass	15 611	19 425	26 125	36 288	41 738	49 954	51 196	51 685	231%
- Straw	3 640	5 013	5 934	8 269	9 066	8 181	8 443	9 229	154%
- Wood	3 541	4 983	9 484	17 365	22 793	31 348	32 317	32 433	816%
- Biooil	744	49	761	1 949	529	221	143	79	-89.4%
- Waste, renewable	7 686	9 380	9 946	8 705	9 349	10 204	10 293	9 944	29.4%
Biogas	84	582	707	721	1 380	2 337	2 569	3 264	3785%
Heat pumps	-	22	6	0	82	299	411	1 030	•

Fuel consumption for district heating production



The upper table shows output, the amount of district heating produced, and the type of fuel used. For example, in 2020 a total of 128.1 PJ district heating was produced. The lower table shows input and the amount of fuel used to produce district heating. For example, in 2020, a total of 84.7 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 it is assumed that combined heat and power plants produce heat with an efficiency of 200%. An example would be consumption of 3.7 PJ coal in 2020 (lower table) results in district heating production of 7.3 PJ (upper table).

There has been a significant change in the fuel used in the production of district heating since 1990. Consumption of coal for production of district heating has fallen from almost 50% to just 4.3% today. On the other hand, the percentage of renewables increased from around 20% to covering 69.3% of district heating production in 2020.

Energy supply and consumption 2020

Direct energy content [TJ]	Total	Crude oil	Refinery feed-stocks	Refinery gas	LPG	Aviation gasoline	Motor gasoline	Other kerosene	JP1	Gas-/diesel-oil	Fuel oil	Waste oil	Petro-leum coke	Lubri-cation oil and bitumen
Energy supply														
- Primary production	398 057	151 369	-	-	-	-	-	-	-	-	-	-	-	-
- Recycling	2	-	-	-	-	-	-	-	-	-	-	2	-	-
- Imports	761 321	200 734	-	-	571	63	19 385	-	23 114	97 345	132 238	-	7 033	9 724
- Exports	-451 381	-46 833	-2 345	-	-3 039	-	-49 776	-	-3 619	-74 070	-162 746	-	- 0	- 129
- Border trade	-10 553	-	-	-	-	-	1 643	-	-	-12 195	-	-	-	-
- International marine bunkers	-23 301	-	-	-	-	-	-	-	-	-14 419	-8 781	-	-	- 101
- Supply from blending	- 198	- 32	-3 302	-	-	-	- 133	45	- 169	417	2 792	-	-	1
- Stock changes	-18 635	-1 470	2 686	-	- 120	- 0	-2 843	-	-6 570	-9 287	-13 804	-	836	- 35
Statistical differences	258	1 747	110	0	71	- 18	381	-	- 41	-1 428	913	-	1	13
Extraction and gasification	-13 436	-	-	-	-	-	-	-	-	-	-	-	-	-
Refineries														
- Input and net production	622	-305 514	2 850	16 007	5 146	-	82 994	-	3 418	143 169	52 553	-	-	-
- Own use in production	-15 508	-	-	-14 368	-	-	-	-	-	-	- 105	-	-	-
Used in distribution	-4 639	-	-	-	-	-	-	-	-	-	-	-	-	-
Large-scale power units	-													
- Fuel used and production	- 174	-	-	-	-	-	-	-	-	- 234	- 3	-	-	-
- Own use in production	- 3	-	-	-	-	-	-	-	-			-	-	-
Large-scale CHP units	-													
- Fuel used and production	-16 496	-	-	-	- 0	-	-	-	-	- 93	- 712	-	-	-
- Own use in production	-2 588	-	-	-	-	-	-	-	-					
Renewable energy, selected														-
- Wind		-	-	-	-	-	-	-	-	-	-	-	-	-
- Hydro		-	-	-	-	-	-	-	-	-	-	-	-	
Small-scale CHP units	-													-
- Fuels used and production	-2 055	-	-	-	-	-	-	-	-	- 21	- 1	-	-	-
- Own use in production	- 986	-	-	-	-	-	-	-	-	-	-	-	-	
District heating units	-													-
- Fuels used and production	184	-	-	-	-	-	-	-	-	- 271	- 76	- 0	-	-
- Own use in production	- 203	-	-	-	-	-	-	-	-	-	-	-	-	
Autoproducers	-													-
- Electricity units	- 5	-	-	-	-	-	-	-	-	-	-	-	-	-
- CHP units	-4 383	-	-	-1 639	-	-	-	-	-	- 99	- 206	- 1	-	-
- Heat units	4 278	-	-	-	-	-	-	-	-	- 2	- 3	- 0	-	-
Gas works	- 65	-	-	-	-	-	-	-	-	- 0	-	-	-	
Biogas upgrading plants														-
Distribution losses etc.	-29 459	-	-	-	-	-	-	-	-	-	-	-	-	
Final consumption	-													-
- Non-energy use	-9 473	-	-	-	-	-	-	-	-	-	-	-	-	-9 473
- Road	-152 047	-	-	-	-	-	-50 859	-	-	-89 984	-	-	-	-
- Rail	-4 180	-	-	-	-	-	- 0	-	-	-2 654	-	-	-	-
- Domestic sea transport	-4 912	-	-	-	-	-	-	-	-	-4 482	- 430	-	-	-
- International aviation	-13 931	-	-	-	-	-	-	-	-13 931	-	-	-	-	-
- Domestic aviation	- 714	-	-	-	-	- 44	- 0	-	- 670	-	-	-	-	-
- Military transport	-2 020	-	-	-	-	-	- 1	-	-1 532	- 487	-	-	-	-
- Agriculture, forestry and horticulture	-24 862	-	-	-	- 234	-	- 115	- 5	-	-11 506	- 18	-	-	-
- Fishing	-4 575	-	-	-	- 7	-	- 0	-	-	-4 567	-	-	-	-
- Manufacturing	-88 945	-	-	-	-1 093	-	- 25	- 3	-	-2 493	-1 574	-	-7 870	-
- Construction	-7 530	-	-	-	- 137	-	- 31	-	-	-5 586	-	-	-	-
- Wholesale	-10 321	-	-	-	- 36	-	-	- 1	-	- 151	- 0	-	-	-
- Retail trade	-9 063	-	-	-	- 29	-	-	- 0	-	- 65	- 0	-	-	-
- Private service	-34 315	-	-	-	- 133	-	-	- 2	-	- 320	- 13	- 0	-	-
- Public service	-22 751	-	-	-	- 140	-	-	- 3	-	- 649	- 9	-	-	-
- Single-family houses	-132 392	-	-	-	- 611	-	- 618	- 27	-	-5 051	-	-	-	-
- Multi-family houses	-48 624	-	-	-	- 209	-	-	- 5	-	- 815	- 12	-	-	

Natural gas	Coal	Coke etc.	Solar energy	Wind power	Hydro power	Geo-ther-mal	Straw	Wood chips	Fire-wood	Wood pellets	Wood waste	Biogas	Bio met-hane	Waste	Biooil, biodie-sel etc.	Heat pumps	Electri-city	District heating	Gas-works gas
49 863	-	-	7 526	58 789	61	46	18 929	18 696	13 686	2 025	6 934	21 379	-	35 533	79	13 143	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92 658	26 628	327	-	-	-	-	-	17 963	1 521	45 549	-	-	-	6 074	13 350	-	66 938	107	-
-59 641	-4 635	-	-	-	-	-	-	-	-	-	-	-	-	-	-2 385	-	-42 161	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	183	-	-	-	-
5 483	7 640	- 238	-	-	-	-	-	-	-	-	-	-	-	-	- 912	-	-	-	-
-4 414	3 293	250	- 2	-	-	-	-	- 36	-	-	- 0	-	- 876	-	293	- 0	-	- 0	0
-13 436	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-1 027	- 8	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-4 639	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 3	-	-
-2 204	-28 780	-	-	-	-	-	-3 440	-16 502	-	-27 927	-1 157	- 6	- 424	-	-	-	24 985	39 764	-
																	-2 588	-	-
-	-	-	-	-58 789	-	-	-	-	-	-	-	-	-	-	-	-	58 789	-	-
-	-	-	-	-	- 61	-	-	-	-	-	-	-	-	-	-	-	61	-	-
-5 689	-	-	-	-	-	-	-4 343	-5 974	-	- 443	- 554	-3 485	-1 093	-5 273	-	-	7 234	17 587	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 479	- 508	-
-8 274	- 12	-	-2 663	-	-	- 46	-6 407	-11 453	-	-1 438	- 751	- 38	-1 590	- 496	- 79	-	-3 166	36 945	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 203	-
-	-	-	-4 250	-	-	-	-	-	-	-	-	- 11	-	-	-	-	4 255	-	-
-1 370	-	-	-	-	-	-	- 2	- 519	-	-	-2 733	-2 332	- 263	-30 082	-	-	8 053	26 811	-
- 51	-	-	-	-	-	-	- 0	- 177	-	-	- 311	- 184	- 10	-1 940	-	-	- 68	7 023	-
- 442	-	-	-	-	-	-	-	-	-	-	-	- 117	- 85	-	-	-	-	-	578
												-14 428	14 428						
- 92	-	-	-	-	-	-	-	-	-	-	-	-	- 18	-	-	-	-3 820	-25 506	- 23
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- 278	-	-	-	-	-	-	-	-	-	-	-	-	- 53	-	-10 529	-	- 344	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-1 526	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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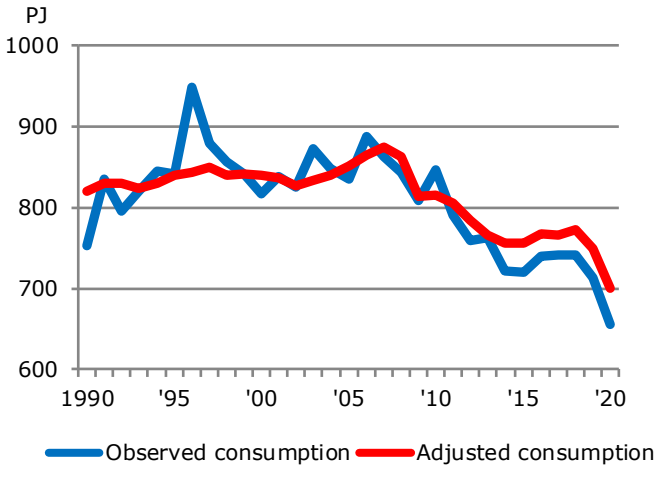
-1 262	- 127	-	-	-	-	-	-1 895	- 25	-	-	- 188	- 90	- 243	-	-	-1 102	-6 504	-1 548	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-22 965	-4 007	- 340	-	-	-	-	-	-1 738	-	-1 421	-1 219	- 594	-4 414	-3 255	-	-2 525	-29 556	-3 648	- 205
- 294	-	-	-	-	-	-	-	-	-	-	-	-	- 57	-	-	-	-1 425	-	-
- 938	-	-	-	-	-	-	-	-	-	-	-	-	- 180	-	-	-	-5 007	-4 008	-
- 724	-	-	-	-	-	-	-	-	-	-	-	-	- 139	-	-	-	-5 011	-3 094	-
-3 065	-	-	-	-	-	-	-	- 12	-	-	- 22	- 95	- 589	- 560	-	-	-16 013	-13 479	- 11
-2 343	-	-	- 92	-	-	-	-	- 143	-	-1 244	-	-	- 450	-	-	-	-7 636	-10 026	- 17
-17 247	-	-	- 428	-	-	-	-2 843	- 79	-15 206	-15 101	-	-	-3 315	-	-	-9 516	-29 860	-32 315	- 175
-3 274	-	-	- 92	-	-	-	-	-	-	-	-	-	- 629	-	-	-	-9 545	-33 896	- 147

Gross energy consumption

	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Adjusted total gross energy consumption. Fuel equivalent [PJ]	**819**	**839**	**850**	**814**	**755**	**772**	**750**	**700**	**-14.5%**
By fuel	**819**	**839**	**850**	**814**	**755**	**772**	**750**	**700**	**-14.5%**
Oil	355	376	352	312	278	286	281	238	-32.9%
Natural gas	82	192	192	176	133	121	113	95	15.8%
Coal and coke	327	175	166	147	111	98	70	66	-79.8%
Waste, non-renewable	8	14	17	16	18	19	19	20	155%
Renewable energy	48	81	123	163	216	250	266	282	490%
By energy product	**819**	**839**	**850**	**814**	**755**	**772**	**750**	**700**	-14.5%
Oil	338	329	333	300	273	282	277	234	-30.8%
Natural gas	59	98	100	94	87	82	79	68	14.5%
Coal and coke	17	12	11	6	5	6	5	4	-74.0%
Waste, non-renewable	0	1	1	1	1	2	2	2	269%
Renewable energy	28	32	43	54	70	76	77	82	195%
Electricity	297	286	279	274	229	231	218	219	-26.3%
District heating	77	79	81	86	91	94	92	91	17.0%
Gas works gas	2	1	1	1	1	1	1	0	-75.6%
By use	**819**	**839**	**850**	**814**	**755**	**772**	**750**	**700**	**-14.5%**
Energy sector	28	44	52	46	42	37	36	29	4.8%
Non-energy use	13	13	12	11	11	10	8	9	-27.2%
Transport	172	203	218	212	209	223	222	180	4.7%
Agriculture and industry	226	226	213	187	160	167	160	161	-29.0%
Commercial and public services	132	125	127	130	114	118	110	105	-20.3%
Households	248	228	229	228	220	217	213	216	-13.1%
Observed total energy consumption [PJ]	**752**	**816**	**835**	**846**	**719**	**741**	**713**	**656**	**-12.7%**
Oil	343	370	348	316	276	284	279	236	-31.3%
Natural gas	76	186	188	185	120	113	105	84	10.4%
Coal and coke	255	166	155	164	76	68	38	33	-86.9%
Waste, non-renewable	7	14	17	17	18	18	19	19	168%
Renewable energy	45	79	122	168	208	239	251	260	471%
Foreign trade in electricity, net imports	25	2	5	- 4	21	19	21	25	-2.3%
Foreign trade in district heating, net imports	0	0	0	0	0	0	0	0	-12.2%

Observed energy consumption and adjusted gross energy consumption

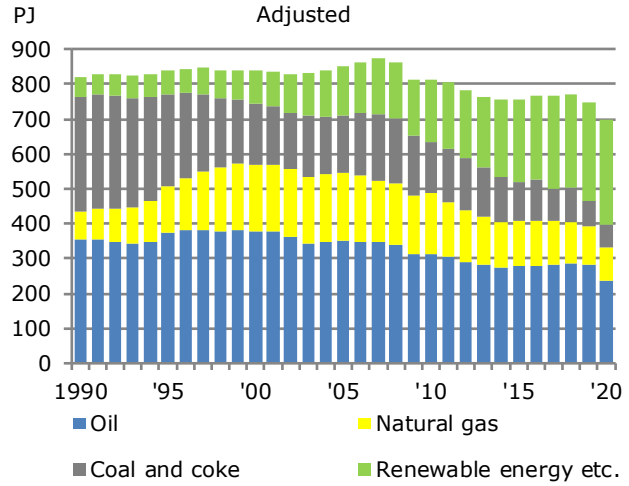


Observed energy consumption shows the registered amount of energy consumed in a calendar year. Gross energy consumption is derived by adjusting observed energy consumption for the fuel consumption linked to foreign trade in electricity. The adjusted gross energy consumption is moreover adjusted for climate 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 700 PJ in 2020, which is 6.6% lower than the 2019 level. Compared with 1990, consumption has fallen by 14.5%.

Observed energy consumption was 656 PJ in 2020, which is 7.9% lower than the 2019 level. Compared with 1990, observed energy consumption was 12.7% lower.

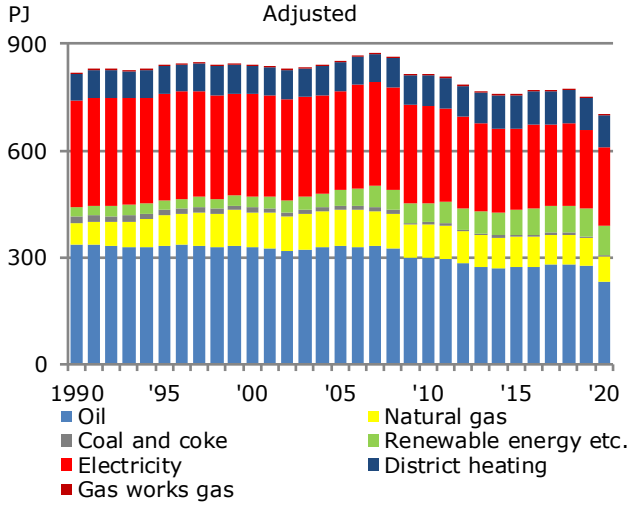
Gross energy consumption by fuel



Adjusted gross energy consumption was 14.5% lower in 2020 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 up to 2008, after which it fell again. From 2019 to 2020 in particular there was a considerable drop to 238 PJ. From 1990 to 2020, oil consumption fell by 32.9%. Consumption of coal, which primarily takes place at CHP units, has decreased by 79.8% since 1990. In the period, consumption of natural gas and renewable energy etc. (i.e. renewable energy and non-renewable waste) went up by 15.8% and 443.3%, respectively.
In 2020, consumption of oil, coal and natural gas decreased by 15.3%, 16.4% and 5.9%, respectively, compared with the year before. In 2020, consumption of renewable energy etc. increased by 5.7% compared with 2019.

Gross energy consumption by energy product after transformation



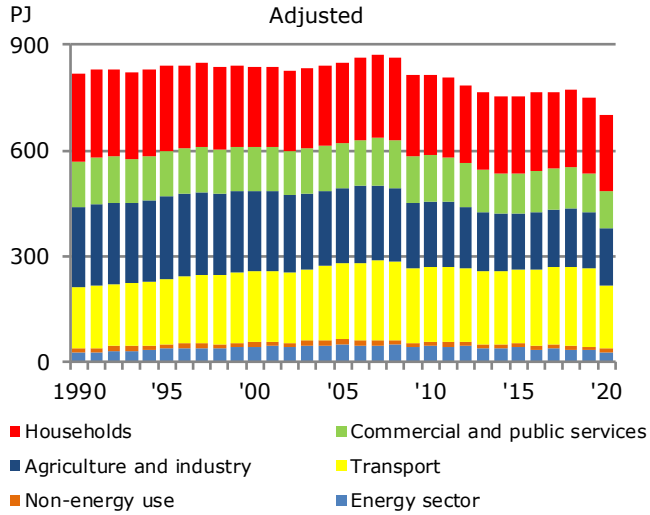
Gross energy consumption by energy product shows gross energy consumption after a number of fuels have been transformed to electricity, district heating, and gas works gas. In other words, the consumption of oil, natural gas, coal and renewable energy etc. is a statement of the volumes of these fuels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

Fuel consumption for electricity production was 219 PJ in 2020, which is 0.4% more than in 2019. Compared with 1990, fuel consumption fell by 26.3% due to more efficient electricity production and a growing share of wind power.

Fuel consumption for district heating was 91 PJ in 2020, which is 1.6% lower than in 2019. Compared with 1990, fuel consumption increased by 17.0%. Also in this regard, production has become more efficient, as district heating production has increased by 38.7% since 1990.

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 by use

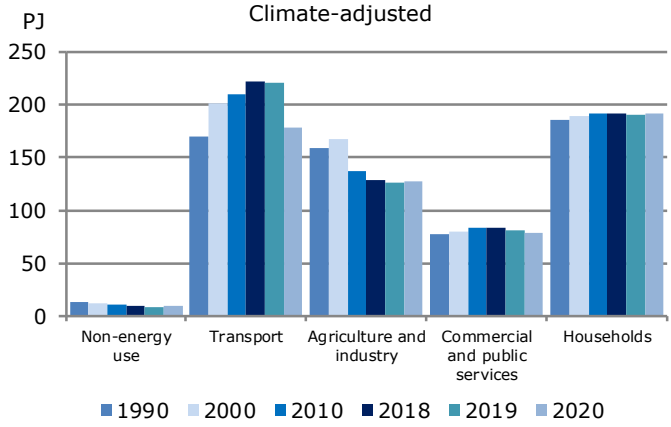


Adjusted gross energy consumption fell in all sectors in 2020, except for households and agriculture and industry. Gross energy consumption for transport and commercial and public services was 18.9% and 4.7% lower respectively in 2020 than the year before. In the agriculture and industry sector consumption was 0.8% higher, and in the households, gross energy consumption rose by 1.1%. In the energy sector (platforms in the North Sea and oil refineries) gross energy consumption fell by 18.9%.
Compared with 1990, gross energy consumption for transport increased by 4.7%. In the agriculture and industry sector, gross energy consumption fell by 29.0%, while it fell by 20.3% and 13.1%, respectively, for the commercial and public services sector and for households. From 1990 to 2020, developments were affected by the fact that electricity and district heating can be generated with even smaller fuel consumption.

Final energy consumption

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total final energy consumption Climate adjusted	**604 097**	**650 815**	**665 869**	**633 250**	**614 876**	**635 601**	**626 162**	**585 207**	**-3.1%**
By energy product									
Oil	321 946	312 354	312 290	283 644	257 500	268 178	262 751	219 927	-31.7%
Natural gas	50 060	72 674	72 415	67 638	62 309	61 181	58 677	54 377	8.6%
Coal and coke	17 243	12 389	10 826	5 559	4 972	5 607	4 563	4 486	-74.0%
Waste, non-renewable	470	763	1 239	922	908	1 900	1 844	1 735	269%
Renewable energy	27 833	32 228	43 216	53 578	69 897	75 819	76 967	82 081	195%
Electricity	103 212	117 590	120 731	114 700	111 216	111 526	111 361	112 957	9.4%
District heating	81 679	102 127	104 604	106 725	107 398	110 772	109 400	109 068	33,5%
Gas works gas	1 654	691	547	485	675	617	599	575	-65.2%
By use									
Non-energy use	**13 004**	**12 619**	**12 064**	**11 026**	**10 529**	**10 268**	**8 470**	**9 473**	**-27.2%**
Total transport	**170 216**	**201 209**	**215 789**	**209 731**	**207 836**	**221 418**	**220 204**	**177 882**	**4.5%**
Road transport	129 943	153 666	161 923	161 215	159 245	166 251	164 047	152 047	17.0%
Rail transport	4 765	4 339	4 488	4 728	4 785	4 479	4 505	4 180	-12.3%
Sea transport, domestic	6 344	6 857	8 026	6 533	4 211	4 937	5 164	4 989	-21.4%
Aviation	27 515	34 822	37 627	35 785	38 246	44 146	45 104	14 645	-46.8%
Military transport	1 649	1 525	3 726	1 470	1 350	1 606	1 384	2 020	22.5%
Total agriculture and industry	**158 790**	**167 113**	**158 242**	**137 014**	**122 085**	**128 562**	**125 739**	**127 122**	**-19.9%**
Agriculture, forestry and horticulture	33 087	32 428	29 322	29 146	27 542	26 024	25 628	25 472	-23.0%
Fishing	10 785	9 451	7 488	6 049	5 205	4 650	4 732	4 575	-57.6%
Manufacturing	108 624	117 583	113 280	94 679	82 783	90 517	88 442	89 499	-17.6%
Construction	6 295	7 651	8 152	7 140	6 554	7 370	6 936	7 577	20.4%
Total commercial and public services	**77 047**	**80 599**	**85 045**	**83 893**	**81 174**	**84 111**	**81 726**	**79 427**	**3.1%**
Wholesale	13 795	13 893	12 906	11 493	10 867	11 100	10 816	10 642	-22.9%
Retail trade	8 883	9 323	9 991	10 939	10 314	9 911	9 555	9 353	5.3%
Private service	28 812	32 901	36 238	36 653	35 460	37 945	36 874	35 608	23.6%
Public service	25 557	24 481	25 909	24 807	24 533	25 155	24 480	23 823	-6.8%
Total households	**185 039**	**189 275**	**194 729**	**191 585**	**193 252**	**191 242**	**190 024**	**191 302**	**3.4%**
Single-family houses	137 383	139 568	144 258	140 888	142 015	139 696	138 440	139 899	1.8%
Multi-family houses	47 656	49 706	50 471	50 696	51 237	51 546	51 584	51 403	7.9%
Observed consumption Total final energy consumption	**580 458**	**632 528**	**658 455**	**659 750**	**605 974**	**628 834**	**617 507**	**570 732**	**-1.7%**

Final energy consumption by use

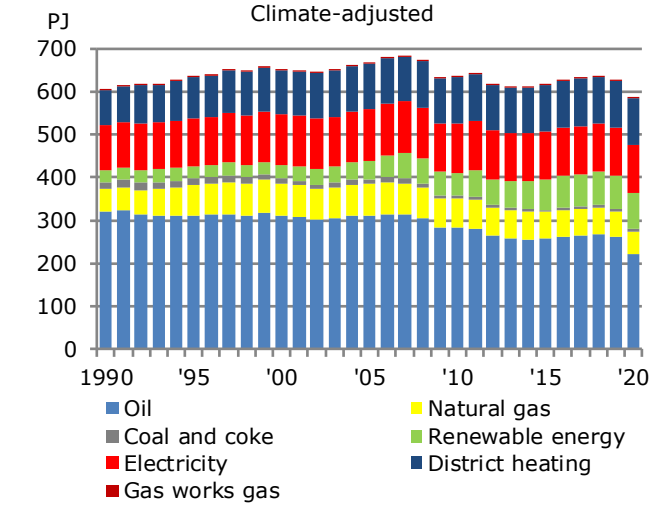


Final energy consumption includes consumption for transport and non-energy purposes (such as lubricants and asphalt), and energy consumption for production and heating by the agriculture and industry sector, the commercial and public services sector, and energy consumption by households.

Final energy consumption in 2020 was 585 PJ, which is 6.5% lower than in 2019. Final consumption was 3.1% lower compared with 1990.

Energy consumption for transport increased increased by 29.4% from 1990 to 2019 and fell sharply by 19.2% from 2019 to 2020. From 1990 to 2020 consumption went up by 4.5%. Energy consumption in the agriculture and industry sector fell by 19.9% from 1990 to 2020, while consumption in the commercial and public services sector and households increased by 3.1% and 3.4%, respectively.

Final energy consumption by energy product

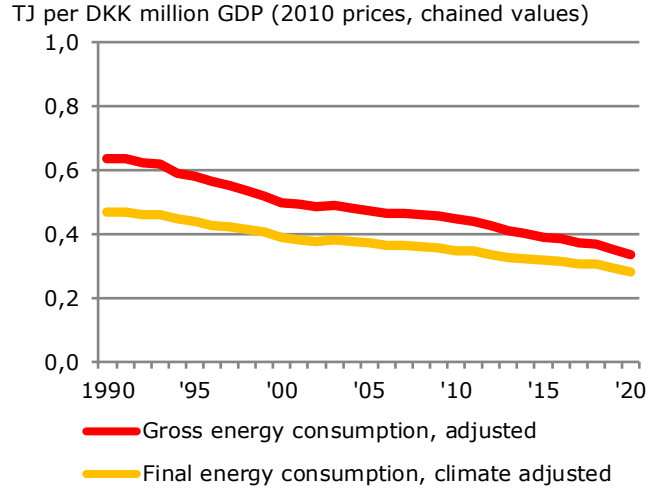


Consumption of oil fell by 16.3% and consumption of natural gas (for other uses than electricity and district heating production) decreased by 7.3% from 2019 to 2020. Consumption of electricity increased by 1.4% and consumption of district heating was 0.3% lower than the year before.

Since 1990, final consumption of natural gas has increased by 8.6%, while consumption of electricity and district heating has increased by 9.4% and 33.5%, respectively. In the same period, consumption of oil and coal fell by 31.7% and 74.0%, respectively.

In 2020, final consumption of renewable energy etc. was 6.4% higher than in 2019. Consumption of renewable energy etc. has increased by 196% 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.

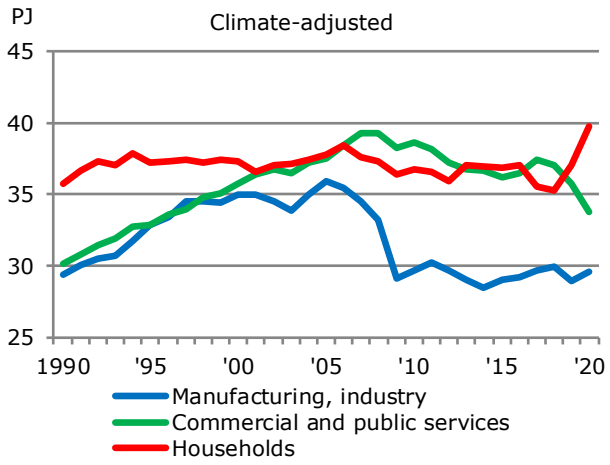
In 2020, gross energy consumption was 0.335 TJ per DKK million GDP (calculated in 2010 prices, chained values), as opposed to 0.636 TJ in 1990; i.e. fuel intensity was reduced by 47.3% during this period. Intensity in 2020 decreased by 4.6% compared with the year before.

If developments in GDP are instead compared to developments in final energy consumption, energy intensity fell by 40.3% from 1990 to 2020. This reduction is less than the figure above, because the efficiency of the transformation sector is not included. Intensity decreased by 4.6% in 2020 compared with the year before.

Final electricity consumption

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total final electricity consumption Climate adjusted	**103 212**	**117 590**	**120 731**	**114 700**	**111 216**	**111 526**	**111 361**	**112 957**	**9.4%**
Rail transport	**736**	**1 253**	**1 351**	**1 455**	**1 429**	**1 583**	**1 664**	**1 870**	**154%**
Agriculture and industry	**36 633**	**43 283**	**44 092**	**37 851**	**36 735**	**37 681**	**36 837**	**37 545**	**2.5%**
Agriculture, forestry and horticulture	6 143	7 047	6 874	6 841	6 441	6 279	6 593	6 534	6.4%
Manufacturing	29 436	35 022	35 943	29 638	28 994	29 929	28 884	29 586	0.5%
Construction	1 054	1 214	1 274	1 372	1 300	1 474	1 360	1 425	35.1%
Commercial and public services	**30 147**	**35 715**	**37 479**	**38 656**	**36 196**	**37 033**	**35 772**	**33 743**	**11.9%**
Wholesale	5 451	5 936	5 973	5 740	5 253	5 324	5 161	5 014	-8.0%
Retail trade	5 202	5 742	6 260	6 543	6 056	5 526	5 212	5 018	-3.5%
Private services	11 715	14 903	15 866	17 108	16 332	17 720	17 081	16 056	37.1%
Public services	7 778	9 134	9 380	9 266	8 555	8 463	8 318	7 656	-1.6%
Households	**35 696**	**37 339**	**37 810**	**36 738**	**36 855**	**35 229**	**37 088**	**39 799**	**11.5%**
Single-family houses	27 011	28 210	28 279	27 335	27 772	26 673	28 096	30 219	11.9%
Multi-family houses	8 686	9 129	9 530	9 403	9 084	8 556	8 993	9 580	10.3%
Observed electricity consumption	**102 139**	**116 849**	**120 467**	**115 623**	**110 912**	**111 303**	**111 060**	**112 428**	**10.1%**

Final electricity consumption by use

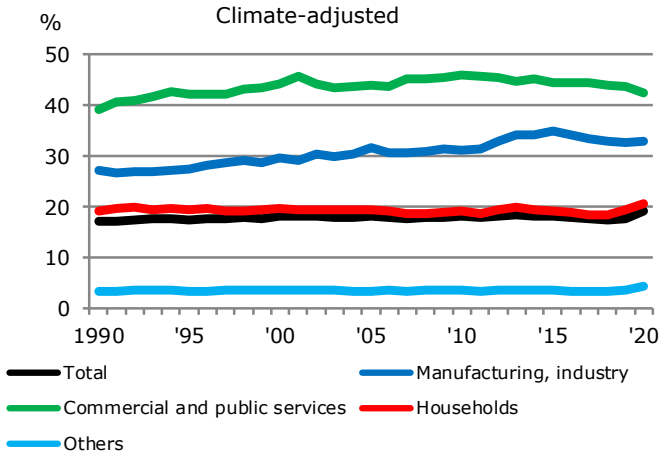


Electricity consumption by manufacturing industries was 2.4% lower in 2020 than in 2019. Compared with 1990, electricity consumption has increased by 0.5%.

In the commercial and public services sector, electricity consumption increased until 2008, after which it fell. From 1990 to 2020 electricity consumption went up by 11.9%.

The electricity consumption of households fluctuated in the period 1990 to 2020 between 35.2 PJ and 39.8 PJ. Electricity consumption increased by 7.3% in 2020. Consumption increased by 11.5% relative to 1990.

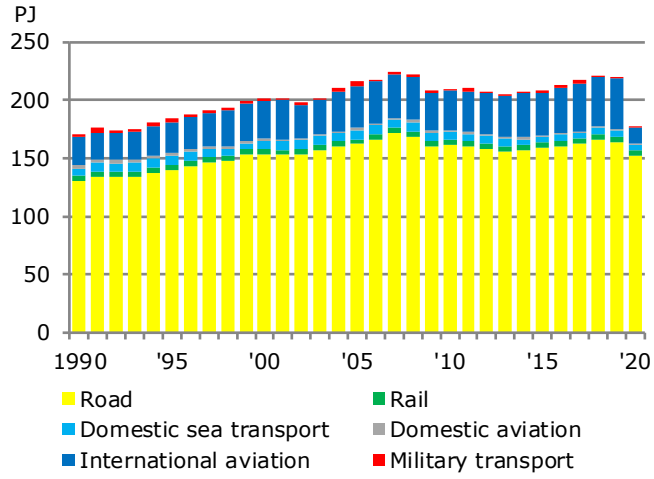
Electricity consumption's share of total energy consumption



During the period from 1990 to 2020 the electricity consumption's share of total energy consumption has been almost unchanged. In 1990, the share was 17.1%, in 2000 it was 18.1% and in 2020 it was 19.3%.

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 2020, electricity consumption accounted for 42.5% of the sector's total energy consumption. Manufacturing industries has seen a steady increase across the period 1990-2013. After this, the percentage of electricity fell although with a slight increase in 2020, when the share was 33.1% against 27.1% in 1990. Electricity consumption's share for households remains more or less unchanged with 19.3% in 1990 and 20.8% in 2020.

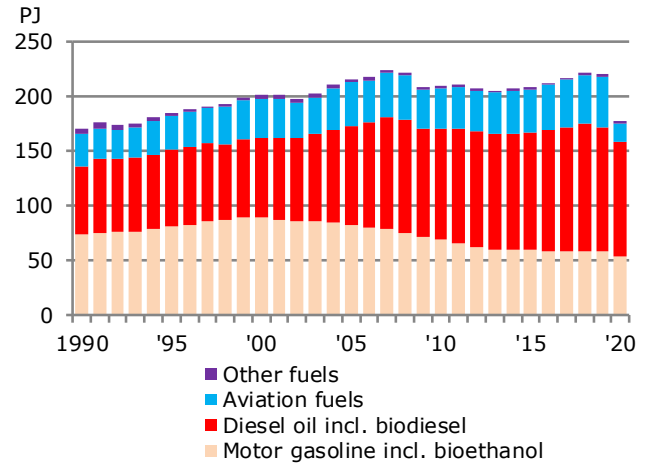
Energy consumption for transport by type



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 2020, energy consumption was calculated at 177.9 PJ, which is 19.2% lower than in 2019. Compared with 1990, energy consumption for transport had only increased by 4.5% overall in 2020, due to the large drop in 2020.

Energy consumption for road transport was 152.0 PJ in 2020, which is 7.3% lower compared with 2019. 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 1990-2019. In 2020, however, consumption fell by 68.2% compared with 2019. This fall is due to the Covid-19 pandemic.

Energy consumption for transport by fuel type

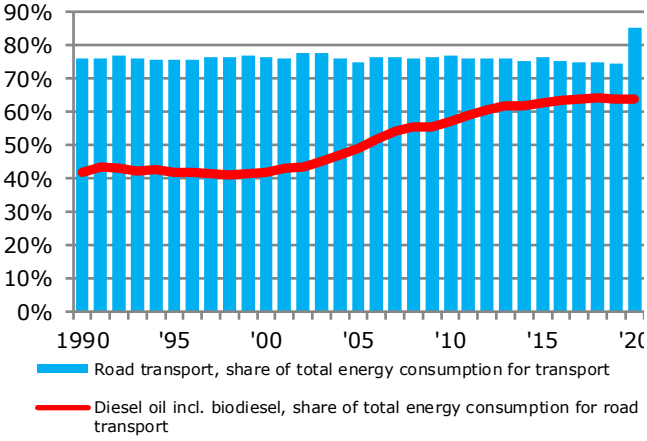


Consumption of motor gasoline (including bioethanol) fell by 7.6% from 2019 to 2020, while consumption of diesel oil (including biodiesel) decreased by 7.5%. Consumption of bioethanol and biodiesel together increased by 11.1% from 2019 to 2020.

Considering developments from 1990 to 2020, consumption of motor gasoline (including bioethanol) fell by 27.1%, while consumption of diesel oil (including biodiesel) grew by 69.9%. Consumption of aviation fuels decreased by 44.2%.

Consumption of other types of fuel fell by 48.1% in the same period. Other types of fuel include electricity consumption by railways.

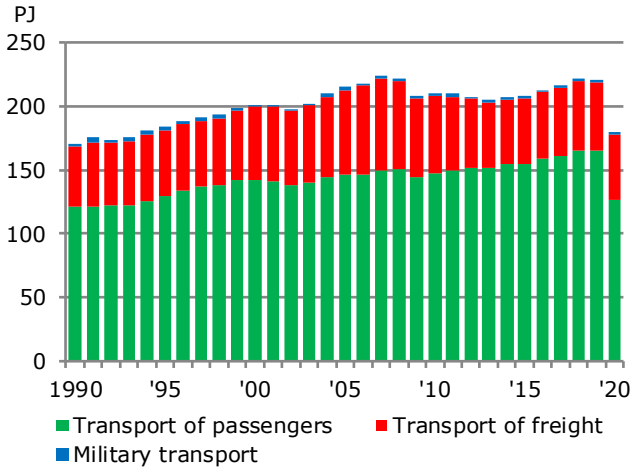
Energy consumption for road transport



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 2019. In 2020, road transport accounted for 85.5% of total energy consumption for transport. The change should be considered in light of the substantial fall in consumption of jet fuel for air transport.

Consumption of diesel oil has increased significantly and diesel oil has been the most common fuel for road transport since 2006. In 2020, diesel oil (including biodiesel) accounted for 63.9% of total energy consumption for transport, as opposed to 42.1% in 1990.

Final energy consumption by passenger and freight transport



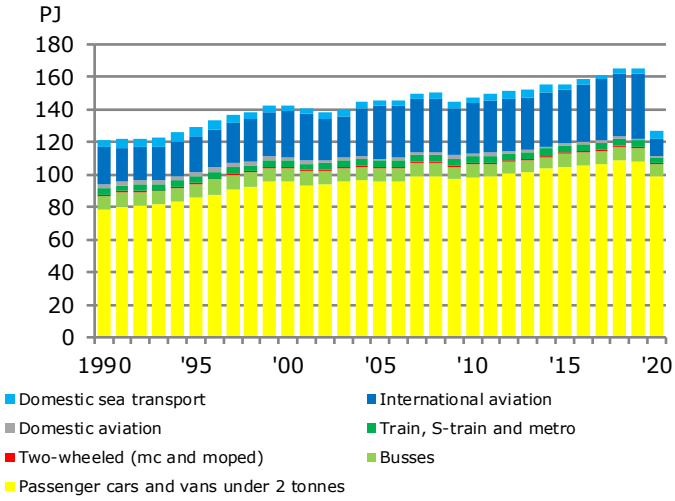
In the distribution of energy consumption for transport of passengers and freight, vans less than two tonnes are included under passenger transport, whereas vans of 2-6 tonnes are included under freight transport.

Out of the total energy consumption for transport in 2020, which amounted to 180.0 PJ, passenger transport accounted for 126.8 PJ, corresponding to 70.4%. Energy consumption for freight transport was 51.2 PJ, corresponding to 28.5%, while energy consumption for transport by Danish military was 2.0 PJ.

Energy consumption for passenger transport decreased by 23.4% from 2019 to 2020, while energy consumption for freight transport fell by 3.7%. Considering the trend from 1990 to 2020, energy consumption for passenger transport increased by 4.5%, while energy consumption for freight transport increased by 8.5%.

*LNG is included with the same distribution as gas/diesel in shipping.

Energy consumption for passenger transport by means of transport

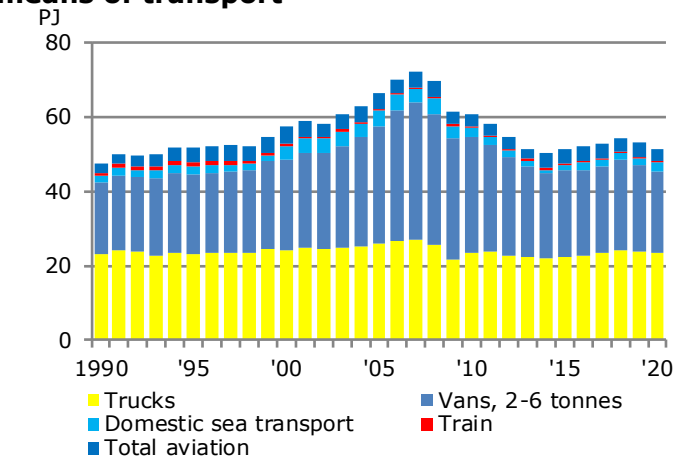


Energy consumption for passenger transport is mainly used for transport by car and for international aviation. In 2020, energy consumption for these categories made up 78.2% and 8.5%, respectively, of total energy consumption for passenger transport.

Energy consumption for cars and vans (less than 2 tonnes) decreased by 8.2% from 2019 to 2020, while energy consumption for international aviation fell by 73.0%. From 1990 to 2020, energy consumption for cars and vans increased by 25.9%, while energy consumption for international aviation fell by 52.3%.

*LNG is included with the same distribution as gas/diesel in shipping.

Energy consumption for freight transport by means of transport



Energy consumption for freight transport is mostly by trucks and vans (2-6 tonnes). In 2020, energy consumption by these types of vehicle made up 45.5% and 42.5%, respectively, of total energy consumption for freight transport.

Energy consumption for trucks fell by 2.4% from 2019 to 2020, and energy consumption for vans decreased also by 6.4%. Energy consumption for trucks increased by 0.3% from 1990 to 2020, while energy consumption for vans increased by 14.1%.

*LNG is included with the same distribution as gas/diesel in shipping.

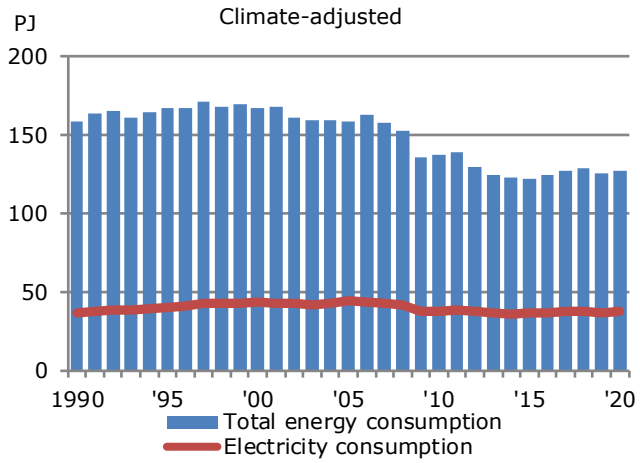
Final energy consumption for transport

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total transport Observed consumption	**170 216**	**201 209**	**215 789**	**209 731**	**207 836**	**221 418**	**220 204**	**177 882**	**4.5%**
LPG	464	425	323	3	-	-	-	-	-100%
Aviation gasoline	155	119	107	76	57	49	41	44	-71.4%
Motor gasoline	74 327	88 976	82 126	67 726	57 443	56 758	56 810	50 861	-31.6%
Petroleum	462	39	14	0	-	-	-	-	-100%
JP1	28 828	35 810	39 959	36 577	38 927	44 726	46 008	16 132	-44.0%
Gas/diesel oil	61 685	73 077	90 529	101 893	100 825	108 967	105 589	97 607	58.2%
Fuel oil	3 560	1 509	1 379	868	39	5	204	430	-87.9%
Natural gas					76	305	300	278	
LNG	-	-	-	-	71	46	77	77	
Bio methane					1	24	33	53	
Bioethanol	-	-	-	1 118	1 840	1 797	1 829	3 339	
Biodiesel	-	-	-	16	7 129	7 159	7 648	7 190	
Electricity	736	1 253	1 351	1 455	1 429	1 583	1 664	1 870	154%
Road	129 943	153 666	161 923	161 215	159 245	166 251	164 047	152 047	17.0%
Rail	4 765	4 339	4 488	4 728	4 785	4 479	4 505	4 180	-12.3%
Domestic sea transport	6 344	6 857	8 026	6 533	4 211	4 937	5 164	4 989	-21.4%
Domestic aviation	2 856	1 981	1 449	2 000	1 415	1 326	1 331	714	-75.0%
International aviation	24 659	32 842	36 178	33 785	36 831	42 819	43 773	13 931	-43.5%
Military transport	1 649	1 525	3 726	1 470	1 350	1 606	1 384	2 020	22.5%
Passenger transport	121 342	142 227	145 898	147 700	155 092	165 461	165 617	126 790	4.5%
Freight transport	47 225	57 458	66 166	60 562	51 395	54 351	53 203	51 238	8.5%
Military transport	1 649	1 525	3 726	1 470	1 350	1 606	1 384	2 020	22.5%

Final energy consumption in agriculture and industry

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total for agriculture and industry Climate adjusted	**158 790**	**167 113**	**158 242**	**137 014**	**122 085**	**128 562**	**125 739**	**127 122**	**-19.9%**
By energy product									
Oil	65 613	58 460	53 743	44 071	35 757	34 730	34 975	35 532	-45.8%
Natural gas	25 281	35 606	32 433	30 901	29 134	29 275	26 901	24 884	-1.6%
Coal and coke	16 315	12 339	10 817	5 531	4 972	5 607	4 563	4 486	-72.5%
Waste, non-renewable	13	72	591	759	771	1 575	1 520	1 465	11511%
Renewable energy	9 377	8 098	7 759	11 509	10 392	14 252	15 753	17 558	87.2%
Electricity	36 633	43 283	44 092	37 851	36 735	37 681	36 837	37 545	2.5%
District heating	5 409	9 210	8 788	6 353	4 115	5 233	4 984	5 446	0.7%
Gas works gas	149	45	19	41	208	207	207	207	38.9%
By use									
Agriculture, forestry and horticulture	33 087	32 428	29 322	29 146	27 542	26 024	25 628	25 472	-23.0%
Fishing	10 785	9 451	7 488	6 049	5 205	4 650	4 732	4 575	-57.6%
Manufacturing industries	108 624	117 583	113 280	94 679	82 783	90 517	88 442	89 499	-17.6%
Construction	6 295	7 651	8 152	7 140	6 554	7 370	6 936	7 577	20.4%

Energy and electricity consumption in agriculture and industry

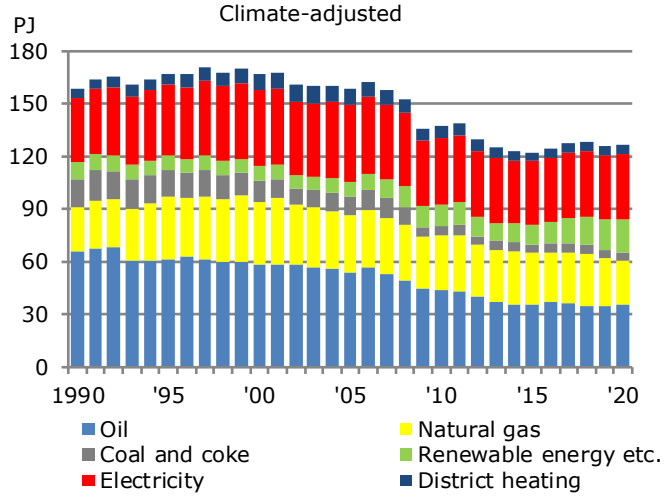


Agriculture and industry covers agriculture, forestry and horticulture, fishing, manufacturing industries (excl. refineries), as well as construction.

In 2020, climate-adjusted energy consumption in agriculture and industry was 127.1 PJ, which is 1.1% higher than the year before. Compared with 1990, energy consumption decreased by 19.9%.

Electricity consumption in 2020 was 37.5 PJ after adjusting for climate variation. This is an increase by 1.9% compared with the year before. Compared with 1990, electricity consumption increased by 2.5%.

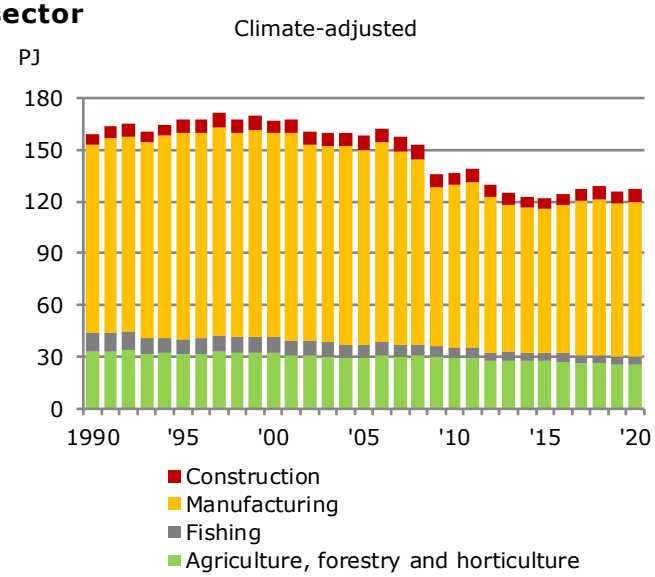
Energy consumption in agriculture and industry by energy products



In 2020, consumption of oil and renewable energy etc. for agriculture and industry grew by 1.6% and 10.1%, respectively, compared with 2019. Consumption of natural gas and coal decreased by 7.5% and 1.7%, respectively. Consumption of electricity increased with 1.9%, while consumption of district heating was 9.3% higher in 2020 than the year before.

Consumption of coal, oil and natural gas in the period 1990-2020 decreased by 72.5%, 45.8% and 1.6%, respectively. Consumption of renewable energy etc. increased by 102.6%. Consumption of electricity and district heating has increased by 2.5% and 0.7% since 1990.

Energy consumption by individual industry in the agriculture and industry sector

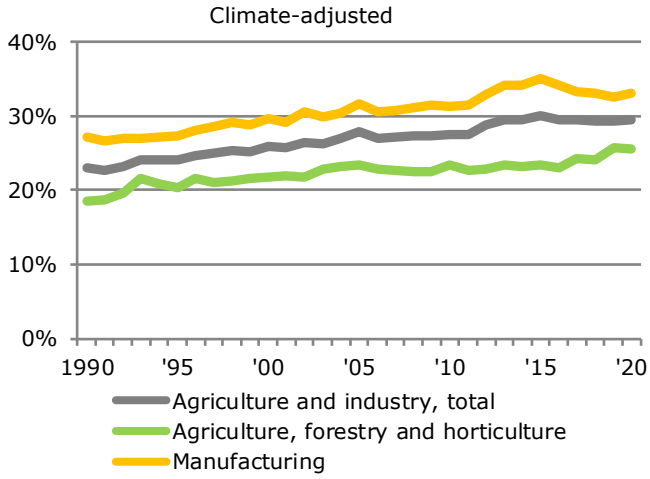


Compared with 2019 energy consumption fell by 3.3% and 0.6% in fishing and in agriculture, forestry and horticulture. Energy consumption in manufacturing industries and in construction fell by 1.2% and 9.2%, respectively, in 2020.

From 1990 to 2020, energy consumption in manufacturing industries fell by 17.6%. Energy consumption in agriculture, forestry and horticulture fell by 23.0%, while in construction consumption increased by 20.4%. In fishing, energy consumption fell by 57.6%.

In 2020, agriculture, forestry and horticulture's share of total energy consumption by the agriculture and industry sector was 20.0%, while the share of manufacturing industries was 70.4%. In 2020, fishing and construction accounted for 3.6% and 6.0%, respectively, of energy consumption in the agriculture and industry sector.

Electricity consumption's share of total energy consumption

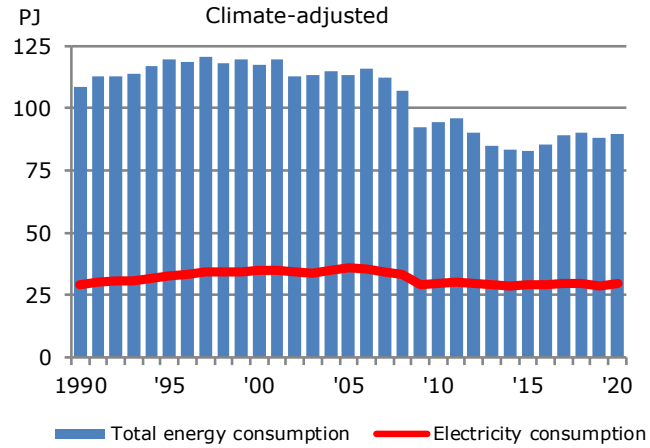


Electricity consumption's share of total energy consumption in the agriculture and industry sector increased from 23.1% in 1990 to 29.5% in 2020.

In manufacturing industries the share of electricity increased from 27.1% in 1990 to 33.1% in 2020.

In agriculture, forestry and horticulture the share of electricity was 18.6% in 1990. In 2020, this share was 25.7% of total energy consumption in agriculture, forestry and horticulture.

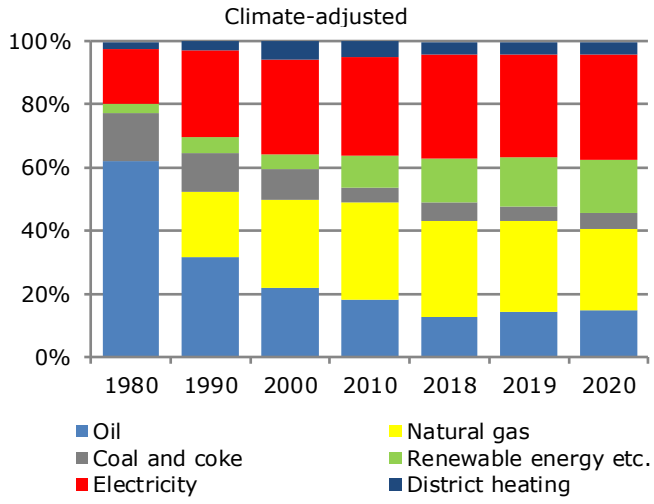
Energy and electricity consumption in manufacturing industries



Climate-adjusted energy consumption in manufacturing industries decreased from 88.4 PJ in 2019 to 89.5 PJ in 2020, corresponding to a increase of 1.2%. Compared with 1990, energy consumption decreased by 17.6%.

In 2020, electricity consumption was 29.6 PJ, which is 2.4% more than the year before. Electricity consumption has risen by 0.5% since 1990.

Composition of energy consumption in manufacturing industries



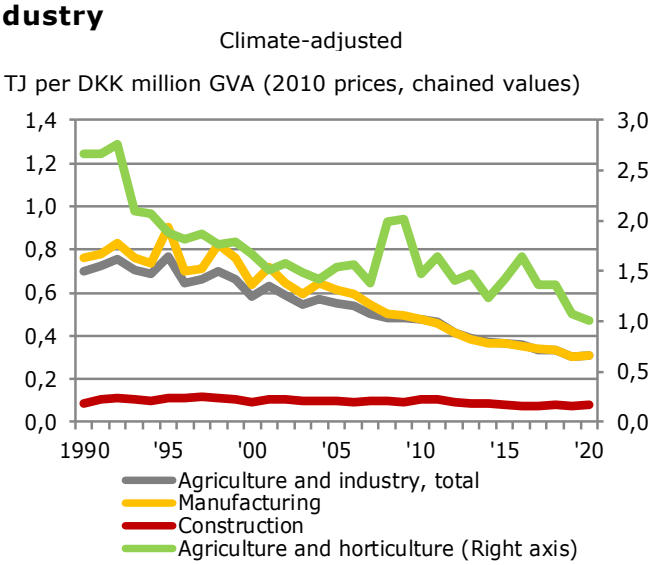
The composition of energy consumption in manufacturing industries has changed significantly since 1980, when oil consumption was dominant by 62.2% of the total energy consumption. In 1990, oil consumption accounted for almost one-third of total energy consumption. In 2020, this figure was 14.7%.

Consumption of natural gas accounted for 25.9% of energy consumption in manufacturing industries in 2020, as opposed to 20.8% in 1990.

Coal's share of energy consumption has gone down from 12.3% in 1990 to 4.9% in 2020. The contribution from renewable energy etc. and district heating has increased from 1990 to 2020. In 2020, their shares were 17.1% and 4.2%, respectively.

The share of electricity consumption grew from 27.1% in 1990 to 33.1% in 2020.

Energy intensities in agriculture and industry



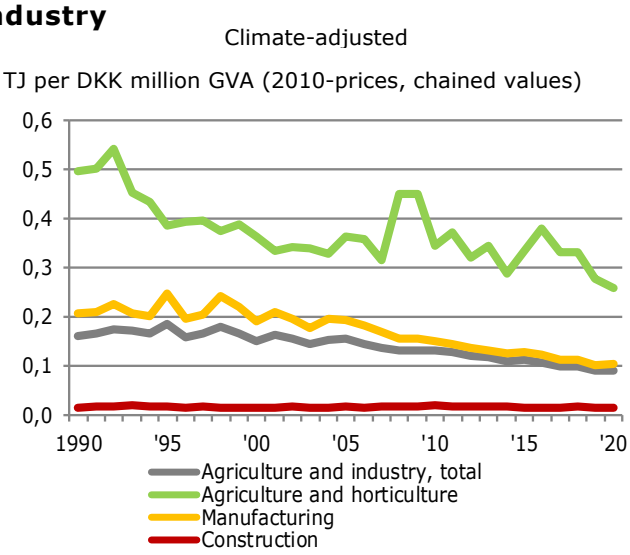
Energy intensity has been calculated as climate-adjusted energy consumption in relation to the gross value added (GVA), measured at 2010 prices, chained values.

Energy intensity in agriculture and industry dropped by 56.0% from 1990 to 2020. The annual average fall in energy intensity from 1990 to 2020 was 2.7% per year.

In manufacturing industries, energy intensity fell by 59.5% from 1990 to 2020. In 2020, energy intensity decreased by 1.5% compared with 2019.

In agriculture, forestry and horticulture, energy intensity decreased by 7.0% in 2020. The energy intensity has fallen by 62.5% since 1990. Since 2005, the trend has been influenced by significant fluctuations in agricultural, forestry and horticultural GVA.

Electricity intensities in agriculture and industry

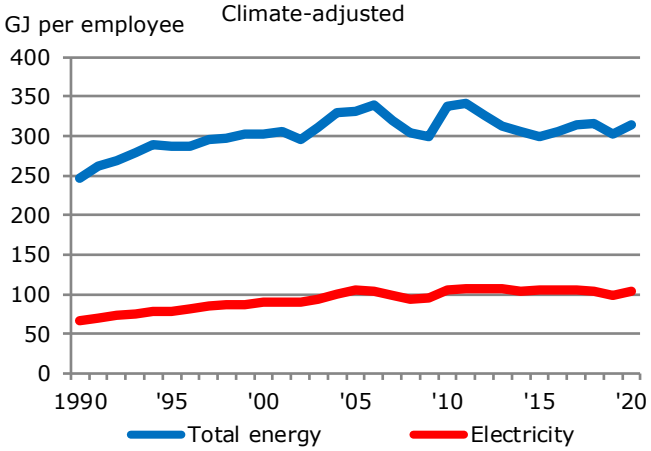


Electricity intensity has been calculated as climate-adjusted electricity consumption in relation to GVA, measured at 2010 prices, chained values.

After a period of fluctuating electricity intensity in agriculture and industry in the 1990s, it fell steadily up to 2020. In the period 1990 to 2020, electricity intensity fell by 43.7%. In 2020, electricity intensity was 0.091, i.e. 0.091 TJ of electricity (corresponding to 25,183 kWh) were used for every DKK 1 million GVA in the agriculture and industry sector. In 2020, electricity intensity rose by 1.4% compared with 2019.

Electricity intensity in manufacturing industries increased by 2.7% in 2020. In agriculture, forestry and horticulture intensity fell by 7.3%. Both compared with 2019. Electricity intensity in construction rose by 3.6%.

Energy consumption per employee in manufacturing industries

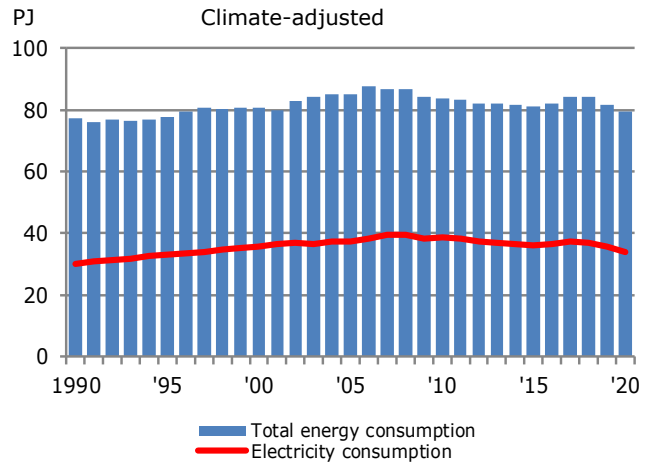


Energy and electricity consumption per employee in manufacturing industries have developed differently than the intensities shown above. This is due to a considerable increase in productivity, i.e. measured as GVA per employee in this sector.

Energy consumption per employee was 314.9 GJ in 2020, as opposed to 302.9 GJ the year before. This corresponds to an increase of 4.0%. Compared with 1990, energy consumption per employee grew by 27.7%.

Electricity consumption per employee was 104.1 GJ in 2020, which is 5.2% higher than the year before. Compared with 1990, electricity consumption per employee increased by 55.8%.

Energy and electricity consumption in the commercial and public services

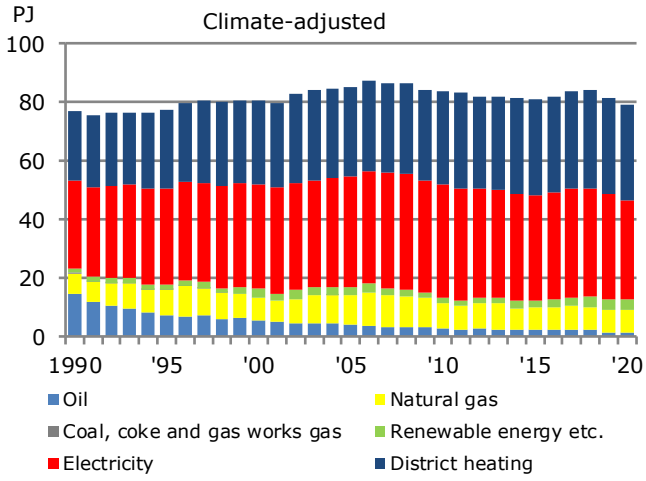


The commercial and public services sector includes wholesale, retail, private and public services.

Climate-adjusted energy consumption was 79.4 PJ in 2020, which is 2.8% lower than the year before. Compared with 1990, consumption increased by 3.1%.

In 2020, climate-adjusted electricity consumption was 33.7 PJ, which is 5.7% less than the year before. Compared with 1990, electricity consumption increased by 11.9%.

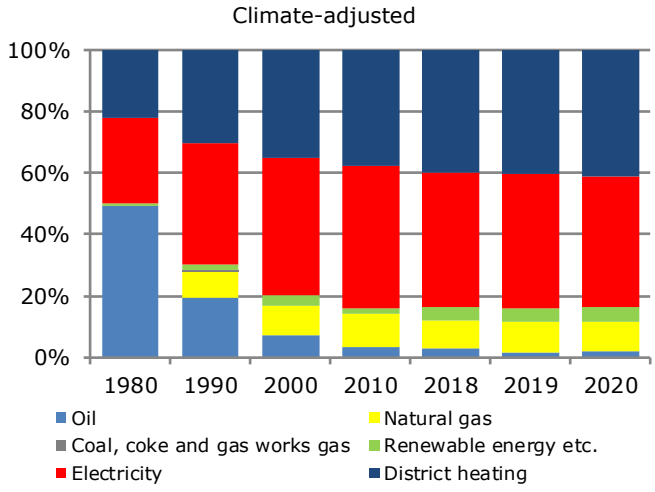
Energy consumption by energy product



Electricity and district heating are predominant energy sources in the commercial and public services sector. In 2020, consumption of electricity decreased by 5.7%, while consumption of district heating was 0.8% lower than the year before.

Compared with 1990, oil consumption fell by 89.0%, while natural gas consumption increased by 9.0%. In 2020, consumption of electricity and district heating was 11.9% and 39.6% higher, respectively, compared with 1990.

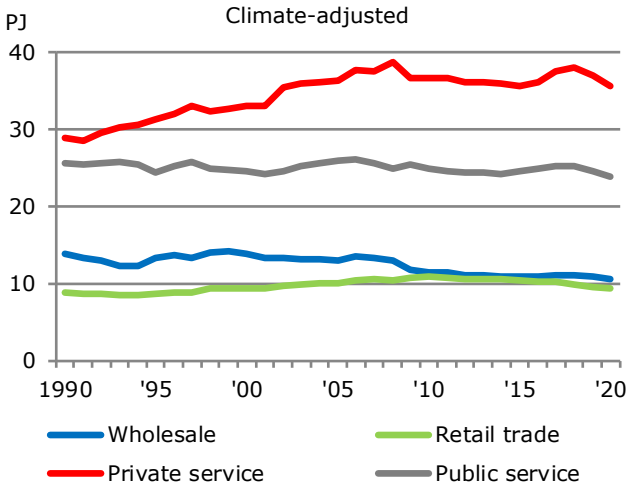
Composition of energy consumption in the commercial and public services



The composition of energy consumption in the commercial and public services sector has changed significantly since 1980, when oil consumption was dominant. 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 2020, electricity and district heating consumption together accounted for 83.7% of total energy consumption (electricity 42.5% and district heating 41.2%). The share of oil was 2.1%, while the share of natural gas was 9.5%. The share of renewable energy etc. was 4.7%.

Energy consumption by sector



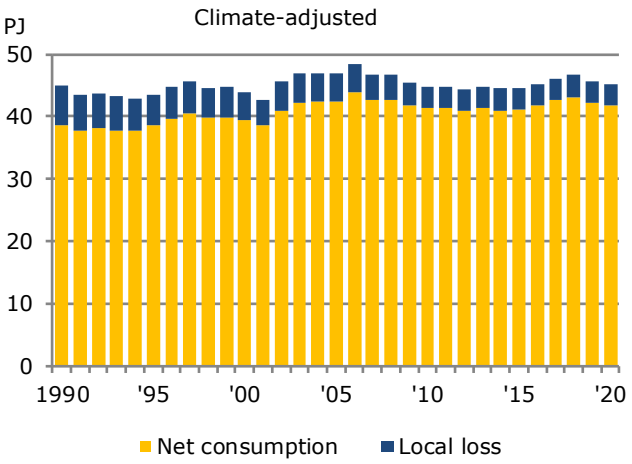
In 2020, 74.8% of energy consumption in the commercial and public services sector was in private and public services, while wholesale and retail accounted for the remaining 25.2%.

From 2019 to 2020, energy consumption in private services and public services fell by 3.4% and 2.7%, respectively. Energy consumption in wholesale and retail trade decreased by 1.6% and 2.1%, respectively.

Compared with 1990, energy consumption in wholesale fell by 22.9%, while energy consumption in retail grew by 5.3%.

Energy consumption in the private service sector is higher today than in 1990. Since 1990, growth has been 23.6%. In the public service sector, energy consumption is 6.8% lower compared with 1990.

Energy consumption for heating in the commercial and public services

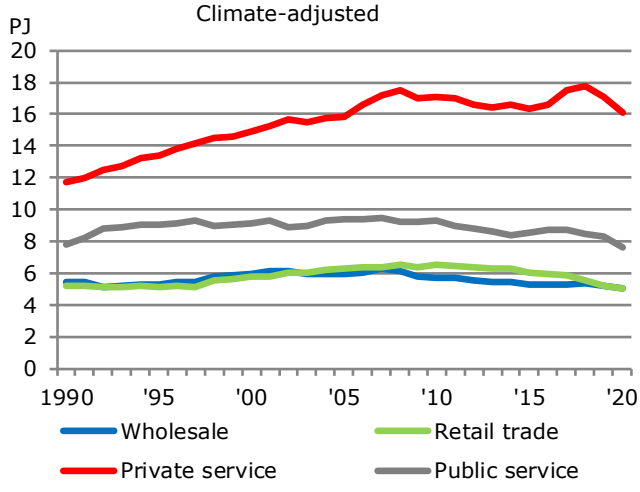


Energy consumption for heating (space heating and hot water) can be calculated in different ways. While final energy consumption is the volume of energy paid for, net energy consumption is the volume of energy utilised. The difference is local losses by the individual consumers, e.g. from oil and natural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

Final energy consumption for heating in the commercial and public services sector was 45.3 PJ in 2020, which is 0.7% lower than the year before. Compared with 1990, consumption grew by 0.7%.

Net energy consumption was 41.9 PJ in 2020, which is 0.7% lower than the year before. Compared with 1990, net energy consumption increased by 8.7%.

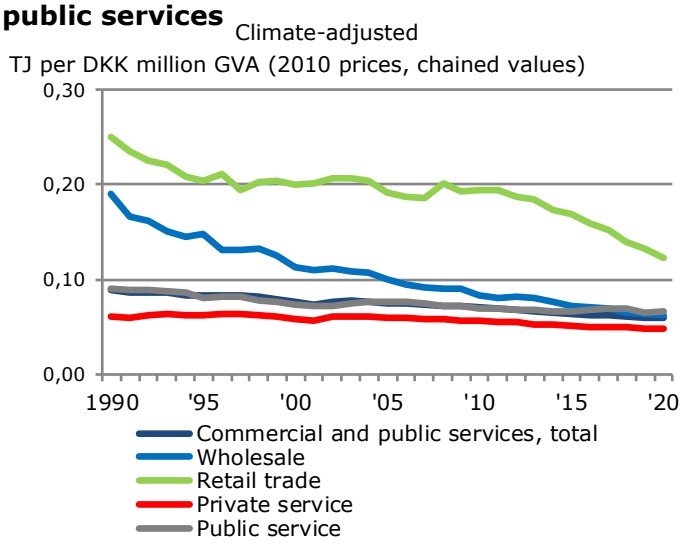
Electricity consumption by sector



From 1990 to 2020, electricity consumption in wholesale decreased by 8.0% and in retail by 3.5%. Electricity consumption in the public service sector decreased by 1.6%. In contrast there has been an increase in electricity consumption in private service of 37.1%.

In 2020, electricity consumption was 2.8% lower in wholesale and 3.7% lower in retail, compared with 2019. In private service, electricity consumption decreased by 6.0% and electricity consumption in public services decreased by 8.0%.

Energy intensities in the commercial and public services

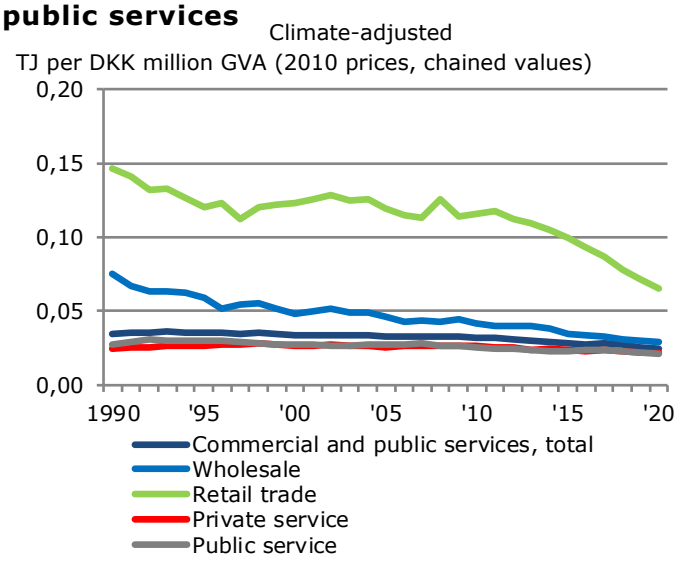


Energy intensities have been calculated as climate-adjusted energy consumption in relation to gross value added (GVA), measured at 2010 prices, chained values.

Energy intensity was 0.059 in 2020, i.e. for every DKK 1 million GVA in the commercial and public services sector, 0.059 TJ of energy were used. This is 0.3% more than the year before.

Energy intensity in the commercial and public services sector fell by 34.1% from 1990 to 2020. For wholesale and retail, energy intensities fell by 67.2% and 51.1%, respectively. For the private service sector and the public service sector, intensities fell by 21.7% and 26.2%, respectively.

Electricity intensities in commercial and public services

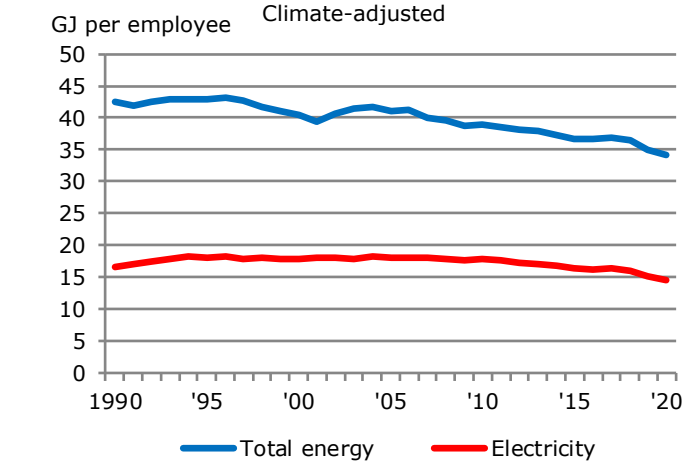


Electricity intensities have been calculated as climate-adjusted electricity consumption in relation to GVA, measured at 2010 prices, chained values.

In 2020 electricity intensity was 0.025, i.e. for every DKK 1 million GVA in the commercial and public services sector, 0.025 TJ of electricity (corresponding to 6,947 kWh) were used. Electricity intensity fell by 2.7% relative to the year before.

Electricity intensity in the commercial and public services sector fell by 28.4% from 1990 to 2020. For wholesale and retail, electricity intensities fell by 60.9% and 55.2%, respectively. In private services, electricity intensity fell by 13.2%, while electricity intensity in the public service sector fell by 22.1%.

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 34.1 GJ in 2020, as opposed to 34.9 GJ the year before. This corresponds to a decrease of 2.2%. Compared with 1990, energy consumption per employee fell by 19.7%.

In 2020, electricity consumption per employee was 14.5 GJ as opposed to 15.3 GJ the year before, which is a decrease of 5.1%. Compared with 1990, electricity consumption per employee decreased by 12.8%.

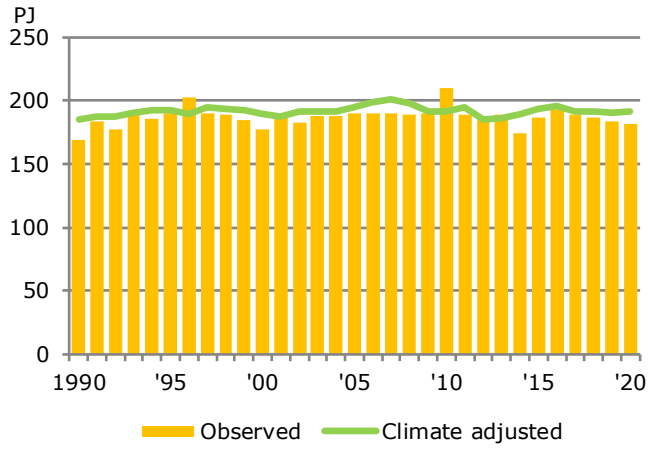
Final energy consumption in the commercial and public services

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total commercial and public services. Climate adjusted	**77 047**	**80 599**	**85 045**	**83 893**	**81 174**	**84 111**	**81 726**	**79 427**	**3.1%**
Oil	14 850	5 874	4 428	2 810	2 671	2 637	1 453	1 631	-89.0%
Natural gas	6 902	7 739	9 989	8 977	7 680	7 621	7 963	7 524	9.0%
Coal and coke	98	-	-	-	-	-	-	-	-100%
Waste, non-renewable	457	691	648	163	137	325	324	270	-40.9%
Renewable energy	1 022	2 078	2 178	1 491	1 813	3 106	3 184	3 491	242%
Electricity	30 147	35 715	37 479	38 656	36 196	37 033	35 772	33 743	11.9%
District heating	23 449	28 451	30 281	31 761	32 639	33 355	32 997	32 738	39.6%
Gas works gas	121	52	42	35	37	33	31	29	-75.6%
By use									
Wholesale	13 795	13 893	12 906	11 493	10 867	11 100	10 816	10 642	-22.9%
Retail	8 883	9 323	9 991	10 939	10 314	9 911	9 555	9 353	5.3%
Private service	28 812	32 901	36 238	36 653	35 460	37 945	36 874	35 608	23.6%
Public service	25 557	24 481	25 909	24 807	24 533	25 155	24 480	23 823	-6.8%

Final energy consumption in households

Direct energy content [TJ]	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total households. Climate adjusted	**185 039**	**189 275**	**194 729**	**191 585**	**193 252**	**191 242**	**190 024**	**191 302**	**3.4%**
Oil	58 998	35 444	27 617	18 595	11 105	9 663	8 791	7 807	-86.8%
Natural gas	17 877	29 329	29 993	27 761	25 495	24 284	23 813	21 970	22.9%
Coal and coke	830	49	8	28	-	-	-	-	-100%
Renewable energy	17 434	22 052	33 279	39 444	48 724	49 505	48 553	50 504	190%
Electricity	35 696	37 339	37 810	36 738	36 855	35 229	37 088	39 799	11.5%
District heating	52 820	64 466	65 536	68 612	70 644	72 184	71 419	70 884	34.2%
Gas works gas	1 384	594	486	408	429	377	361	339	-75.5%
Single-family houses	**137 383**	**139 568**	**144 258**	**140 888**	**142 015**	**139 696**	**138 440**	**139 899**	**1.8%**
Oil	52 233	32 741	25 032	16 910	9 408	8 058	7 233	6 698	-87.2%
Natural gas	15 143	24 907	25 472	23 554	21 529	20 415	20 020	18 464	21.9%
Coal and coke	136	17	0	13	-	-	-	-	-100%
Renewable energy	17 420	22 006	33 226	39 370	48 594	49 114	48 038	49 739	186%
Electricity	27 011	28 210	28 279	27 335	27 772	26 673	28 096	30 219	11.9%
District heating	24 685	31 364	31 985	33 486	34 479	35 230	34 856	34 596	40.1%
Gas works gas	754	323	264	221	234	205	196	184	-75.6%
Multi-family houses	**47 656**	**49 706**	**50 471**	**50 696**	**51 237**	**51 546**	**51 584**	**51 403**	**7.9%**
Oil	6 766	2 703	2 585	1 685	1 696	1 604	1 557	1 109	-83.6%
Natural gas	2 733	4 422	4 522	4 207	3 966	3 869	3 793	3 505	28.3%
Coal and coke	693	32	8	15	-	-	-	-	-100%
Renewable energy	14	46	54	74	129	391	515	765	5340%
Electricity	8 686	9 129	9 530	9 403	9 084	8 556	8 993	9 580	10.3%
District heating	28 135	33 103	33 550	35 125	36 166	36 954	36 562	36 288	29.0%
Gas works gas	630	271	222	187	196	172	165	154	-75.5%

Energy consumption in households

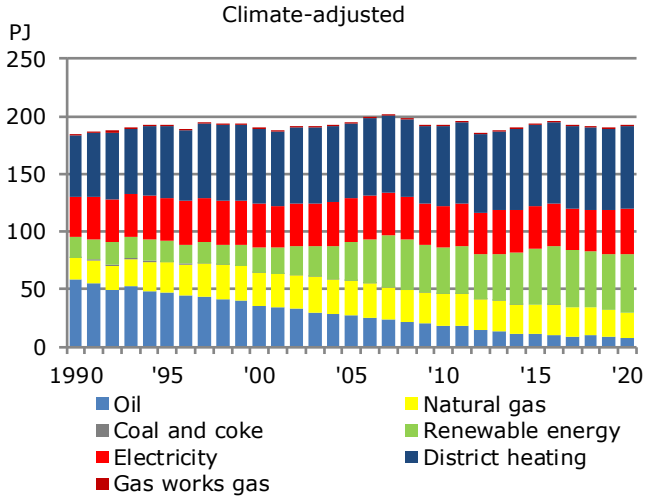


Household energy consumption is greatly influenced by the weather. The years 1990, 2000 and 2014 were very hot years with low energy consumption, whereas 1996 and 2010 were exceptionally cold.

In 2020, climate-adjusted energy consumption by households was 191.3 PJ, accounting for 32.7% of total final energy consumption in Denmark. 156.6 PJ of the 191.3 PJ were used for heating and 34.7 PJ were used for electrical appliances etc.

The climate-adjusted energy consumption of households was 0.7% higher in 2020 than the year before. Compared with 1990, energy consumption grew by 3.4%.

Household consumption by energy products

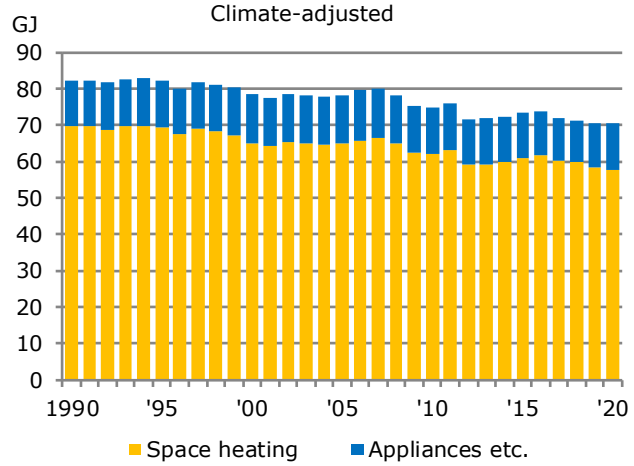


There have been significant changes in the composition of household energy consumption since 1990. Oil consumption decreased throughout the period shown due to a shift to district heating and natural gas.

In 2020, district heating amounted to 37.1% of household energy consumption, and renewable energy and electricity amounted to 26.4% and 20.8%, respectively. Consumption of natural gas, oil and gas works gas amounted to 11.5%, 4.1% and 0.2%, respectively.

The electricity consumption remained more or less constant from the 1990s until 2000. Electricity consumption showed an increasing trend from 2002 to 2006, whereas consumption in the period from 2009 to 2020 has fluctuated around 35 and 40 PJ. Electricity consumption rose significantly in 2020 by 7.3% compared with 2019 because many had to work from home due to the Covid-19 pandemic.

Energy consumption per household

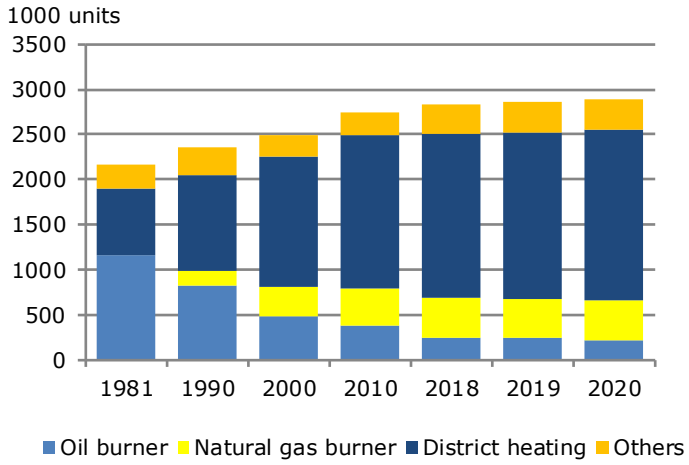


In 2020, average energy consumption per household was 70.3 GJ, which is 0.2% lower than the year before. Of this, 57.6 GJ – corresponding to 81.8% - were used for space heating and hot water. Energy consumption by households went down by 14.6% compared with 1990.

In 2020, average electricity consumption per household for electrical appliances and lighting was 12.0 GJ, corresponding to approximately 3338 kWh. This is an increase of 3.2% compared to the year before and 2.8% 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

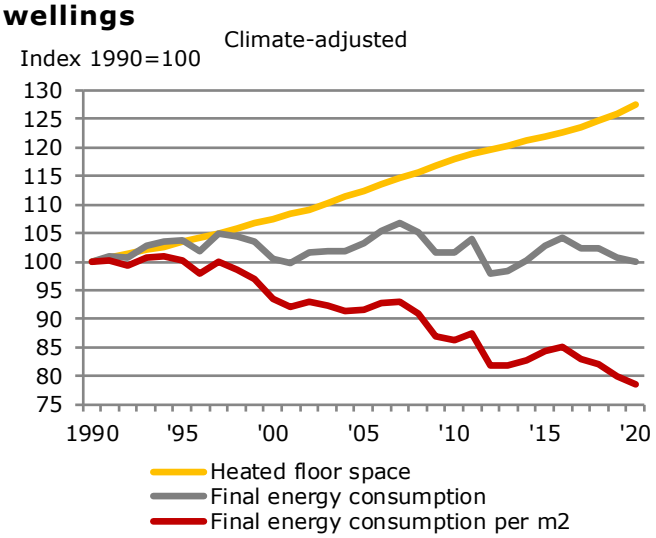


The significant changes in the composition of energy consumption by energy type reflect changes in the composition of heating installations in dwellings over time. Until the mid-1980s, oil-fired boilers clearly dominated the market, after which district heating became the most common source of heating. 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 of 1 January 2020, the total of 2.9 million heating installations could be analysed as follows: District heating installations 65.2%, natural gas boilers 15.0%, oil-fired boilers 7.7% and other installations, including heat pumps, electric heating and wood-fired boilers 12.1%.

Source: Statistics Denmark

Energy consumption for heating in dwellings

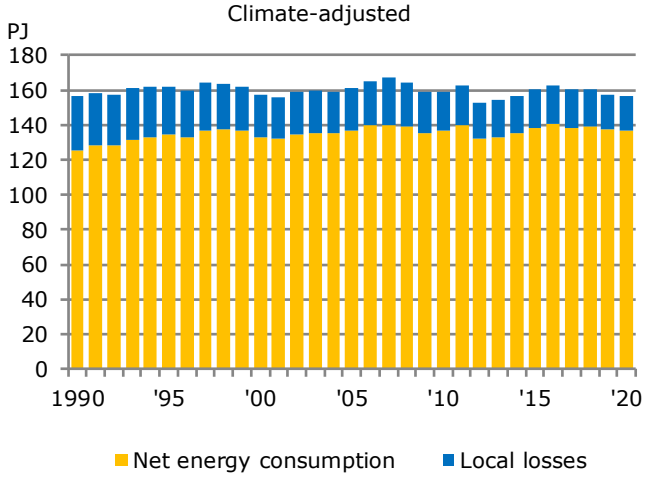


Except from 2001, 2012 and 2013, climate-adjusted energy consumption for heating (space heating and hot water) has been between 0.2% and 6.7% above the 1990 level. In 2020, energy consumption was at more or less the same level as in 1990.

The background for this is a 27.5% increase in total heated area in the period from 1990 to 2020.

In the period 1990 to 2020, energy consumption for heating per m^2 fell by 21.5%. 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. An increase in less efficient use of biomass draws in the opposite direction.

Net energy consumption and heat loss for heating in dwellings

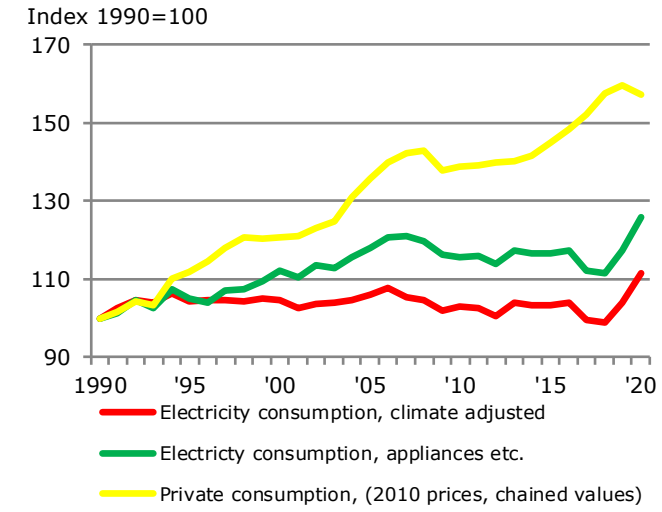


Net energy consumption means the energy utilised. The difference between final energy consumption and net energy consumption is local heat loss in individual dwellings, e.g. from oil and natural gas boilers.

While, as mentioned above, final consumption for heating has remained unchanged from 1990 to 2020, net energy consumption for space heating and hot water in households increased by 9.3% 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^2.

Private consumption and electricity consumption in households

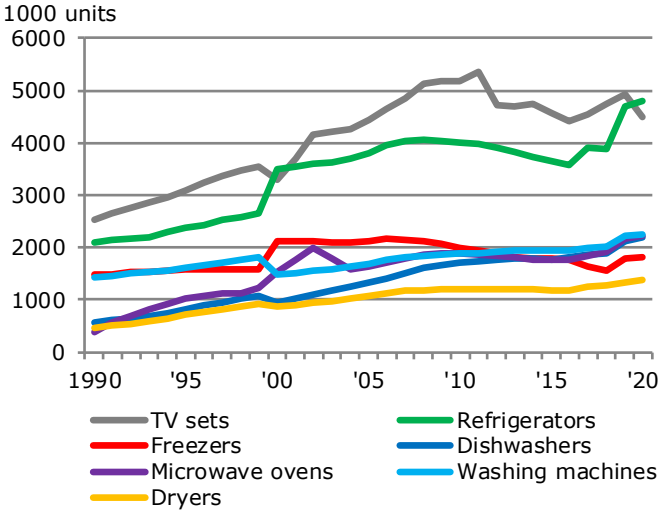


In the period 1990-2020, total household electricity consumption increased by 11.9%, whereas electricity consumption for appliances and lighting etc. increased by 25.8%. Much of the increase in electricity consumption is attributable to working from home in 2020.

Taking into account the large increase in the number of electrical appliances per household, see below, and a general increase of 57.4% in total private consumption, i.e. considerably larger growth in private consumption than in electricity consumption for appliances and lighting etc., this may seem as a surprise.

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

Household stock of electrical appliances

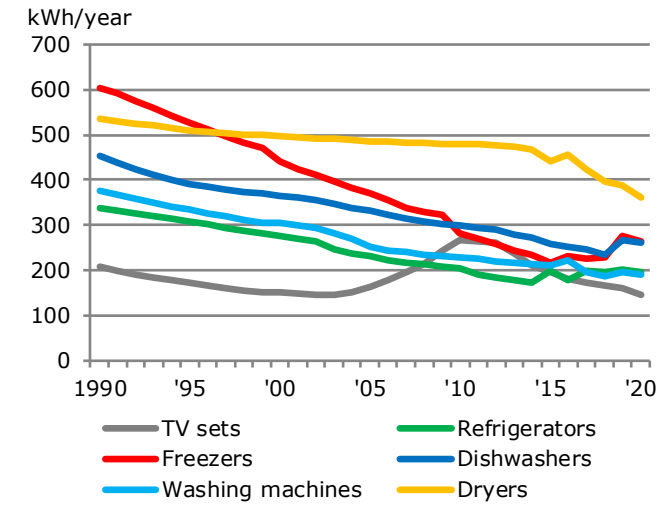


In the period from 1990 to 2010, there has been a sharp increase in the stock of almost all electricity-consuming household appliances. The stock of most appliances have however stagnated or decreased during roughly the past 10 years.

From 1990 to 2020, the number of microwaves has increased by 484%, while the number of tumble dryers and dishwashers has increased by 201% and 285%, respectively. Television sets, washing machines and refrigerators have also increased considerably in numbers. The number of separate freezers has increased by 23.7% since 1990.

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 195 kWh in 2020, i.e. by 42.0%. Electricity consumption for a separate freezer fell by 56.3%, while the fall for a washing machine was 49.6% in the same period. Other electrical appliances, apart from television sets, have also experienced considerable reductions in average specific annual consumption.

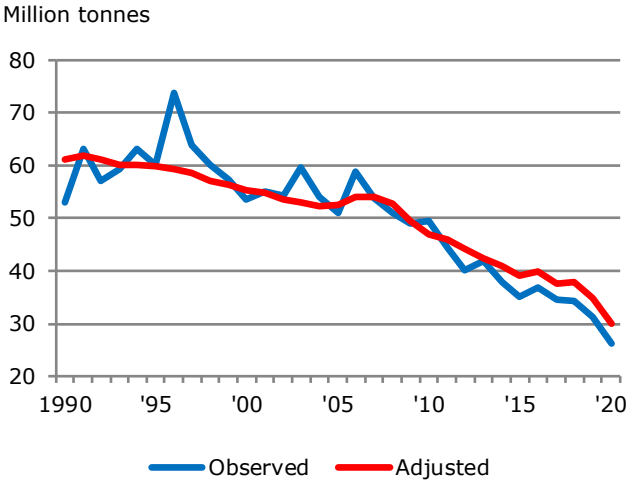
Source: ElmodelBOLIG

CO_2 accounts and inventories for other greenhouse gases

CO_2 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_2, CH_4 and N_2O 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. In 2019, the maximum allowed emissions for Denmark was 33.0 million tonnes CO_2 equivalents.

In 2019, observed total emissions of greenhouse gases were 44.2 million tonnes CO_2 equivalents, which is 37.6% lower than in 1990. Including adjustments in the Energy Statistics for fluctuations in temperature and net exports of electricity, the level in 2019 was 47.8 million tonnes CO_2 equivalents, corresponding to a drop of 39.3% relative to the adjusted emissions in 1990. In 2019, total observed emissions of greenhouse gases outside the ETS (ESD) were 32.1 million tonnes CO_2 equivalents, which is 20.1% lower than the 2005 base-year emissions and 0.92 million tonnes CO_2 equivalents lower than the emissions permitted under the ESD for 2019.
The greenhouse gas inventory for 2020 will be ready in 2022. The overall greenhouse gas accounts include both CO_2 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_2 accounts in the Energy Statistics) and CO_2 emissions from other sources (flaring of gas in the North Sea and certain industrial processes). Emissions of six other greenhouse gases are also included in the commitment: methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3), which are converted to CO_2 equivalents.
Reductions achieved in connection with certain carbon removals by forests and soils 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_2 emissions from energy consumption

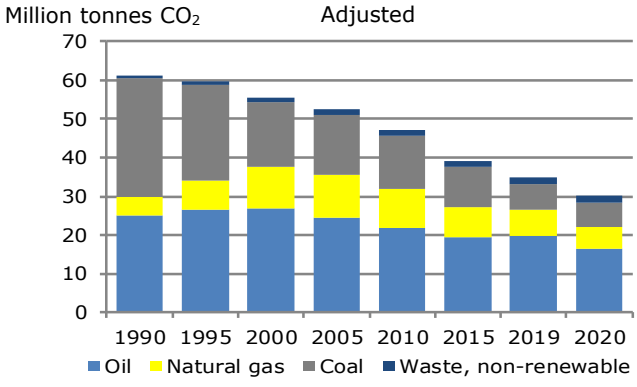


The Danish Energy Agency calculates observed CO_2 emissions as well as adjusted CO_2 emissions, which take annual temperature variations and foreign trade in electricity into account, see the statement of energy consumption on pages 18 and 19. The purpose of the adjusted calculations is to illustrate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

In 2020, observed CO_2 emissions from energy consumption were 26.3 million tonnes, which is 15.8% lower than in 2019. Observed CO_2 emissions dropped by 50.4% compared with 1990.

Adjusted CO_2 emissions from energy consumption fell to 30.1 million tonnes in 2020; a decrease of 13.6% compared with the previous year. Compared with 1990, the drop is 50.7%.

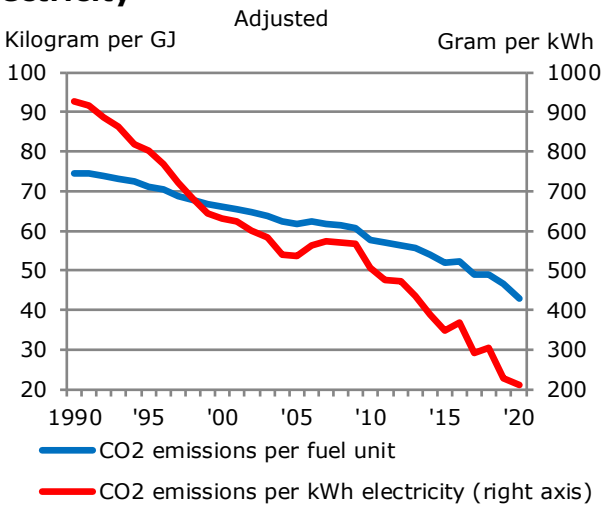
CO_2 emissions by fuel



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 14.5% since 1990, adjusted CO_2 emissions have fallen by 50.7%.

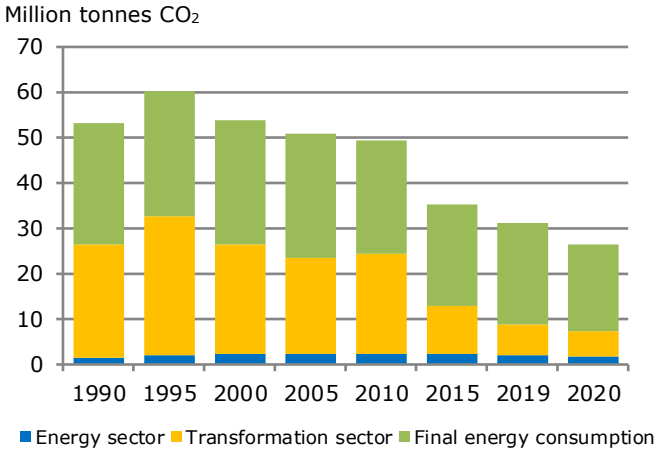
CO_2 emissions per fuel unit and per kWh electricity



From 1990-2020, gross energy consumption has fallen by 14.5%, 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 2020, each GJ of adjusted gross energy consumption was linked to 43.0 kg CO_2, compared with 74.6 kg in 1990. This corresponds to a reduction of 42.3%.

One kWh of electricity sold in Denmark in 2020 led to 211 grams of CO_2 emissions. In 1990, CO_2 emissions were 929 grams per kWh of electricity sold. The reasons for this large reduction are shifts to other fuels in electricity production as well as the ever increasing significance of wind power.

Observed CO_2 emissions by sector

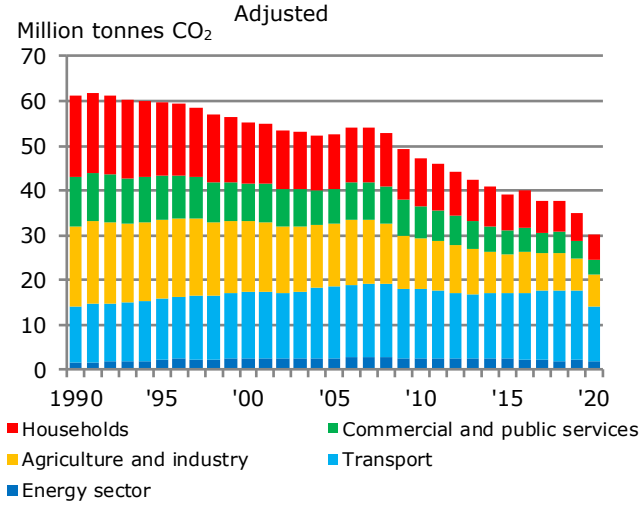


The energy system is divided into three sectors: The *energy sector* (extraction and refining), the *transformation sector* (production of electricity, district heating, and gas works gas), and *final consumption* (transport and consumption by households and industries).

In 1990, total observed CO_2 emissions were 53.1 million tonnes. Of these, 25.1 million tonnes came from the transformation sector and 26.6 million tonnes came from final energy consumption, while the energy sector emitted 1.4 million tonnes.

In 2020, total observed CO_2 emissions were 26.3 million tonnes, of which 5.5 million tonnes were from the transformation sector, 19.0 million tonnes were from final energy consumption, and 1.7 million tonnes were from the energy sector. The transformation sector saw a fall of 19.6 million tonnes of CO_2 from 1990 to 2020, although electricity and district heating production grew significantly in this period.

CO_2 emissions from end-use of energy



Breaking down CO_2 emissions from energy consumption to 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 2020, the transport and the agriculture and industry sectors were responsible for the largest shares of total CO_2 emissions, with 40.8% and 23.7%, respectively. Households and the commercial and public services sector accounted for 18.8% and 10.9%, respectively, while the energy sector accounted for 5.9% of CO_2 emissions.

Compared with 1990, CO_2 emissions from transport increased by 2.7%. 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 60.1% and 69.8% respectively, while for households they fell by 68.8%.

Observed CO_2 emissions from energy consumption

1000 tonnes

Observed emissions	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total CO_2 emissions	**53 097**	**53 613**	**50 891**	**49 420**	**35 171**	**34 437**	**31 247**	**26 320**	**-50.4%**
By fuel	**53 097**	**53 613**	**50 891**	**49 420**	**35 171**	**34 437**	**31 247**	**26 320**	**-50.4%**
Oil	24 228	26 247	24 235	22 106	19 219	19 555	19 560	16 300	-32.7%
Natural gas	4 323	10 629	10 676	10 572	7 026	6 801	6 334	5 114	18.3%
Coal	23 972	15 612	14 582	15 331	7 229	6 360	3 587	3 138	-86.9%
Waste, non-renewable	573	1 124	1 398	1 410	1 697	1 721	1 765	1 768	208%
By sector	**53 097**	**53 613**	**50 891**	**49 420**	**35 171**	**34 437**	**31 247**	**26 320**	**-50.4%**
Energy sector	**1 401**	**2 323**	**2 440**	**2 324**	**2 261**	**1 872**	**2 116**	**1 726**	23.2%
Transformation sector	**25 136**	**24 215**	**21 133**	**21 957**	**10 657**	**9 413**	**6 525**	**5 545**	**-77.9%**
Electricity production	20 562	20 163	17 234	17 673	7 435	6 767	4 162	3 784	-81.6%
District heating production	4 474	4 010	3 866	4 249	3 187	2 615	2 335	1 737	-61.2%
Gas works gas production	101	42	33	35	35	31	28	25	-75.7%
Final energy consumption	**26 559**	**27 075**	**27 318**	**25 139**	**22 252**	**23 151**	**22 605**	**19 049**	**-28.3%**
Transport	12 427	14 646	15 719	15 202	14 483	15 462	15 324	12 164	-2.1%
Agriculture and industry	7 796	7 588	7 032	5 839	4 952	5 021	4 803	4 681	-39.9%
Commercial and public services	1 408	869	923	803	623	639	564	528	-62.5%
Households	4 928	3 971	3 645	3 295	2 194	2 030	1 913	1 675	-66.0%

Observed CO_2 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 CO_2 emissions. The emission factors applied are shown on page 59. Renewable energy, including renewable waste, is not linked to CO_2 emissions in the calculations.

CO_2 emissions from energy consumption, adjusted*)

1000 tonnes

Adjusted emissions	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Total CO_2 emissions	**61 074**	**55 363**	**52 439**	**47 054**	**39 236**	**37 788**	**34 846**	**30 121**	**-50.7**
By fuel	**61 074**	**55 363**	**52 439**	**47 054**	**39 236**	**37 788**	**34 846**	**30 121**	**-50.7**
Oil	25 087	26 767	24 511	21 805	19 350	19 642	19 653	16 421	-34.5
Natural gas	4 646	10 961	10 955	10 054	7 737	7 255	6 828	5 710	22.9
Coal	30 758	16 500	15 570	13 798	10 448	9 166	6 594	6 212	-79.8
Waste, non-renewable	583	1 136	1 403	1 398	1 701	1 725	1 770	1 777	205
By sector	**61 074**	**55 363**	**52 439**	**47 054**	**39 236**	**37 788**	**34 846**	**30 121**	**-50.7**
Energy sector	**1 401**	**2 323**	**2 440**	**2 324**	**2 261**	**1 872**	**2 116**	**1 726**	**23.2**
Transformation sector	**32 258**	**25 456**	**22 498**	**20 122**	**14 581**	**12 665**	**10 003**	**9 158**	**-71.6**
Electricity production	27 071	20 965	18 418	16 576	11 084	9 805	7 362	6 942	-74.4
District heating production	5 079	4 446	4 047	3 513	3 461	2 829	2 613	2 190	-56.9
Gas works gas production	108	45	33	32	36	31	29	25	-76.6
Final energy consumption	**27 414**	**27 584**	**27 501**	**24 609**	**22 394**	**23 251**	**22 726**	**19 237**	**-29.8**
Transport	12 427	14 646	15 719	15 202	14 483	15 462	15 324	12 164	-2.1
Agriculture and industry	7 975	7 700	7 073	5 721	4 983	5 042	4 829	4 722	-40.8
Commercial and public services	1 545	935	950	728	646	656	585	561	-63.7
Households	5 468	4 302	3 760	2 959	2 282	2 090	1 988	1 790	-67.3

*) Adjusted for fuel consumption linked to net import of electricity, as well as for temperature fluctuations.

Adjusted CO_2 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.

Total emissions of greenhouse gases

1000 tonnes CO_2 equivalents	1990	1995	2000	2005	2010	2015	2018	2019	'90[1)]-'19
Observed emissions in total[2)]	**70 872**	**78 768**	**71 183**	**66 762**	**63 543**	**48 624**	**48 144**	**44 241**	**-37.6%**
Of which ETS excl. aviation (ETS) [3)]	-	-	-	26 476	25 266	15 796	14 948	12 040	-54.5%
- CO_2 from domestic aviation (ETS) [3)]	-	-	-	150	186	139	148	150	-0.5%
- Non-ETS (ESD) [3)]	-	-	-	40 136	38 090	32 689	33 048	32 051	-20.1%
Emissions ceiling for non-ETS (ESD)	-	-	-	-	-	35 021	33 871	32 967	-
Over fulfillment for non-ETS (ESD)	-	-	-	-	-	2 443	823	916	-
Observed net emissions in total [4)]	**77 380**	**83 462**	**75 764**	**71 113**	**65 569**	**49 246**	**51 618**	**46 653**	**-39.7%**
Emissions from energy consumption	**51 881**	**59 881**	**52 442**	**49 871**	**48 520**	**34 142**	**33 349**	**29 691**	**-42.8%**
Energy and transformation sector	26 252	32 560	26 051	23 151	24 077	12 880	11 456	8 652	-67.0%
Final energy consumption	25 630	27 321	26 391	26 720	24 443	21 261	21 892	21 039	-17.9%
- Transport (incl. military)	10 940	12 413	12 682	13 975	13 611	12 929	13 666	13 334	21.9%
- Industry	5 428	5 915	5 926	5 444	4 427	3 827	3 972	3 738	-31.1%
- Commercial and public services and households, agriculture etc.	9 262	8 993	7 783	7 300	6 405	4 505	4 254	3 967	-57.2%
Industrial process, flaring etc.	**2 870**	**3 622**	**4 828**	**3 689**	**2 511**	**2 242**	**2 415**	**2 145**	**-25.3%**
Transient emissions and flaring	527	721	1 129	920	597	407	367	305	-42.2%
Industrial process	2 343	2 901	3 699	2 769	1 913	1 835	2 048	1 840	-21.5%
Emissions from agriculture	**13 088**	**12 464**	**11 601**	**11 195**	**10 825**	**10 794**	**10 881**	**10 898**	**-16.7%**
Animals digestion	4 039	3 967	3 631	3 483	3 631	3 667	3 767	3 719	-7.9%
Animal manure	2 819	3 062	3 304	3 464	3 110	2 948	2 926	2 778	-1.5%
Agricultural land	5 608	4 894	4 394	4 021	3 924	3 997	3 939	4 211	-24.9%
Others (liming of soils etc.)	621	540	273	226	159	181	249	190	-69.4%
Other emissions	**1 896**	**1 729**	**1 467**	**1 319**	**1 191**	**1 130**	**1 215**	**1 238**	**-34.7%**
Waste deposit	1 536	1 331	1 073	909	772	653	576	534	-65.2%
Sewage treatment	280	288	220	213	188	202	202	196	-30.1%
Other waste (biomass gasification etc.)	79	109	174	197	231	274	437	508	542%
Forestry and land use [5)]	**6 508**	**4 694**	**4 581**	**4 351**	**2 026**	**622**	**3 474**	**2 412**	**-62.9%**
Forestry [5)]	-1 251	-1 268	-1 208	- 940	-2 308	-4 063	-2 194	-2 558	104%
Land use [5)]	7 760	5 962	5 790	5 290	4 335	4 685	5 668	4 970	-36.0%
Indirect CO_2-emissions	**1 137**	**1 072**	**845**	**688**	**496**	**317**	**284**	**270**	**-76.2%**

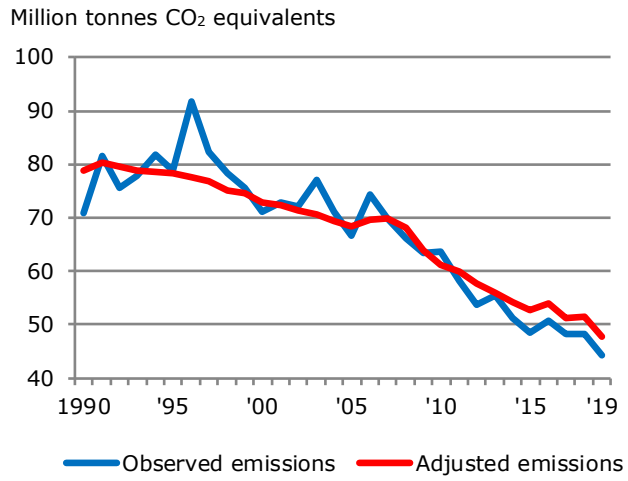
Note 1: This table only includes Denmark's emissions and removal of greenhouse gases. In the reported climate accounts in relation to Denmark's climate commitments under the Kyoto Protocol, if the second commitment period enters into force, information on credits that are part of the CO_2 removal under "Forestry and land use" included.
1) The changes have been stated in relation to 1990, except for ETS, ESD and domestic aviation (including aviation to/from Greenland and the Faroe Islands), where the reductions have been stated in relation to 2005 (for ESD and domestic aviation in relation to the baseline year for ESD set in 2010).
2) 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.
3) CO_2 emissions from domestic aviation are shown separately here and as part of ETS, even though these emissions were in practice included under ESD in the period 2005-2011. ESD emissions have been calculated by deducting ETS emissions from the total observed emissions without the contribution from forest "Forestry and land use". The annual emission allocations under the ESD 2017-2020 were established in 2017 from an ESD emission of 40,079 kt CO2 equivalents in 2005.
4) Total net emissions with the contribution from "Forestry and land use", in which CO_2 removals has been included as negative emissions.
5) The figures are not directly comparable with contributions from forestry and soil, which are included in Denmark's reduction commitment in the Kyoto Protocol.

Observed and adjusted emissions of greenhouse gases

1000 tonnes CO_2 equivalents	1990	2000	2005	2010	2015	2018	2019	2020*	Ændring '90-'20
Observed emissions, total [1)]	**70 872**	**71 183**	**66 762**	**63 543**	**48 624**	**48 144**	**44 241**	**41 463**	-41.5%
Adjusted emissions, total [1)]	**78 849**	**72 933**	**68 310**	**61 178**	**52 689**	**51 496**	**47 840**	**45 264**	-42.6%

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_2 emissions connected to Denmark's own energy consumption.
1) See 2) above.
* The preliminary emissions statement for 2020 is solely based on CO_2 emissions from energy consumption and flaring as calculated in the Energy Statistics 2020 (although excluding international aviation). Total greenhouse gas emissions are calculated by assuming that all emissions other than CO_2 from energy consumption and flaring (although excluding international aviation) are constant at the values for 2019, 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.

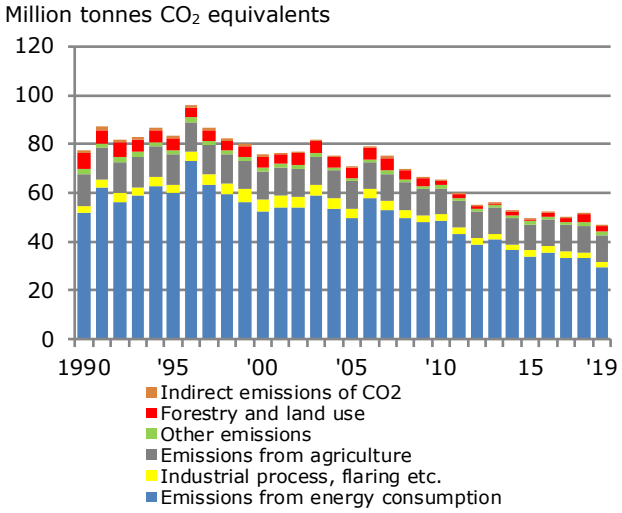
Observed emissions of greenhouse gases were 44.2 million tonnes of CO_2 equivalents in 2019, which is 8.1% less than in 2018.

Adjusted for climatic variations and fuel consumption linked to foreign trade in electricity, emissions of greenhouse gases were 47.8 million tonnes of CO_2 equivalents in 2019, which is 7.1% more than in 2018.

Source: DCE - Danish Centre for Environment and Energy

www.dce.au.dk

Observed net emissions of greenhouse gases by origin



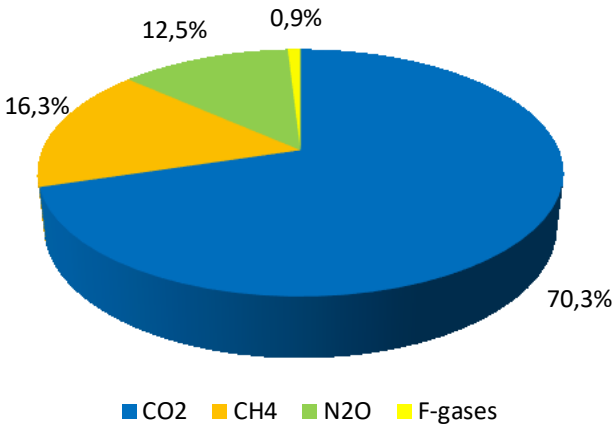
Emissions from energy consumption make the largest contribution to total net emissions of greenhouse gases. Such emissions derive from the energy and transformation sector, transport as well as from final energy consumption in industry, trade and service, households, agriculture etc.

In 2019, observed emissions including CO_2 removals from forestry and land use were: Emissions from energy consumption 63.6%, emissions from agriculture (excl. energy consumption) 23.4%, industrial processes, flaring etc. 4.6%, other emissions 2.7% and indirect CO_2 emissions of 0.6%. CO_2 removals from forestry and land use corresponded to a deduction of 5.2% from observed emissions.

Source: DCE - Danish Centre for Environment and Energy

www.dce.au.dk

Observed emissions by type of greenhouse gases in 2019



The greenhouse gases included in the statement of total emissions contribute with different percentages. With 70.3%, CO_2 accounted for the largest part of total greenhouse gas emissions in 2019. With 16.3%, methane (CH_4) was the second-largest contributor to total emissions, followed by nitrous oxide (N_2O) with 12.5% and F-gases with 0.9%.

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

Note: Exclusive of LULUCF and indirect CO_2-emissions.
Source: DCE - Danish Centre for Environment and Energy.

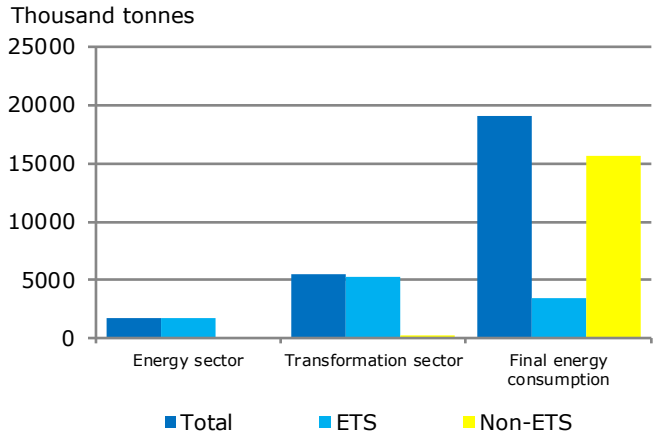
www.dce.au.dk

ETS and non-ETS CO_2 emissions from energy consumption 2018-2020

1000 tonnes	Observed CO_2 emissions from energy consumption								
	Total			EU ETS			Non-EU ETS		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Total	**34 437**	**31 247**	**26 320**	**16 398**	**13 882**	**10 460**	**18 039**	**17 365**	**15 860**
Energy sector	**1 872**	**2 116**	**1 726**	**1 872**	**2 116**	**1 726**	**-**	**-**	**-**
Transformation sector	**9 413**	**6 525**	**5 545**	**9 051**	**6 239**	**5 315**	**362**	**287**	**230**
Final energy consumption	**23 151**	**22 605**	**19 049**	**5 474**	**5 527**	**3 419**	**17 677**	**17 078**	**15 630**
Transport*	15 462	15 324	12 164	3 179	3 248	1 055	12 283	12 077	11 110
Agriculture and industry	5 021	4 803	4 681	2 296	2 280	2 364	2 726	2 523	2 317
- agriculture, forestry and horticulture	1 068	1 000	960	14	13	8	1 053	987	952
- manufacturing	3 181	3 050	2 941	2 281	2 267	2 356	900	782	585
- other industry	772	754	780				772	754	780
Commercial and public services	639	564	528				639	564	528
Households	2 030	1 913	1 675				2 030	1 913	1 675

Note 1: The first three 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 Emissions Trading System (EU ETS). CO_2 emissions from own consumption by waste incineration plants (industry code 383921) have been included under the transformation sector.
* The CO_2 emissions from domestic and international aviation, as stated in Energy Statistics, are both included under the EU Emissions Trading System (EU ETS). No distinction is made between whether aviation fuels are sold for flights covered by the EU ETS or not.

Observed CO_2 emissions from energy consumption in 2020, EU ETS and non-EU ETS sectors



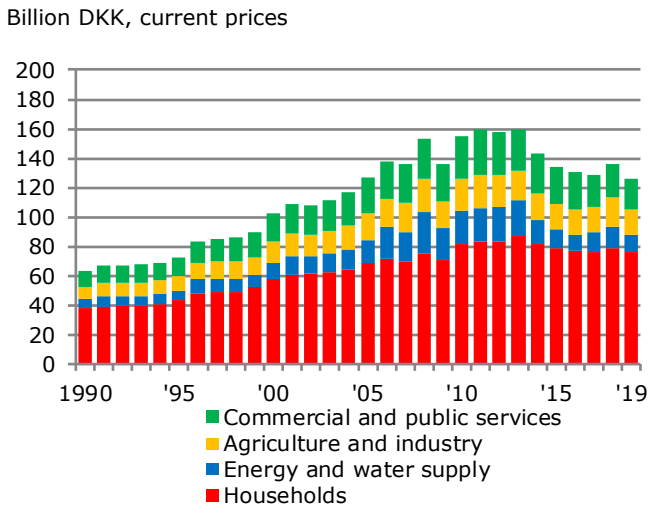
The share of CO_2 emissions included under the EU Emissions Trading System (EU ETS) varies from sector to sector.

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*, 18% is covered by the EU ETS. In this context, almost all emissions can be attributed to manufacturing industries.

* The CO_2 emissions from domestic and international aviation, as stated in Energy Statistics, are both included under the EU Emissions Trading System (EU ETS). No distinction is made between whether aviation fuels are sold for flights covered by the EU ETS or not.

Energy expenses by industry and households



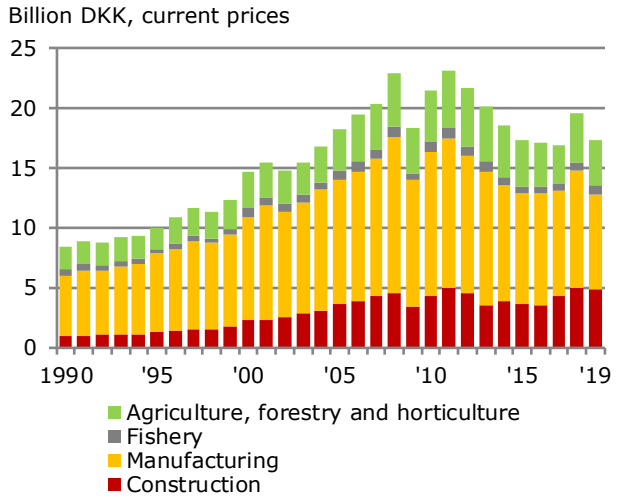
Energy expenses have been calculated based on purchase prices for the year, including taxes and VAT. For industries, as a general rule, a full refund of energy taxes (but not CO_2 taxes) and VAT applies.

Total energy expenses by industry and households amounted to DKK 125.9 billion in 2019, which is 7.5% less than the year before. For households energy expenses were DKK 76.5 billion; for agriculture and industry (excluding oil refineries) expenses were DKK 17.3 billion; while for commercial and public services expenses were DKK 20.5 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 reason for the large drop in expenses from 2013 to 2017 is a drop in consumer prices.

Source: Statistics Denmark.

Energy expenses in agriculture and industry



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

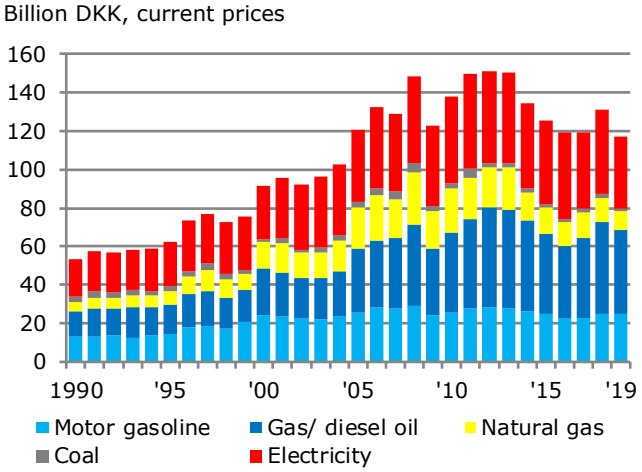
Energy expenses for manufacturing industries (DKK 8.0 billion) accounted for the major part of agriculture and industry's energy expenses in 2019 (46.3%).

With DKK 4.8 billion (27.7%), construction contributed the second-largest share. The third-largest share was contributed by agriculture, forestry and horticulture with DKK 3.8 billion (21.9%). Finally, with DKK 0.7 billion (4.1%), fishing accounted for the smallest share of energy expenses.

In the period 1990-2019, 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.

Source: Statistics Denmark

Energy expenses by fuel



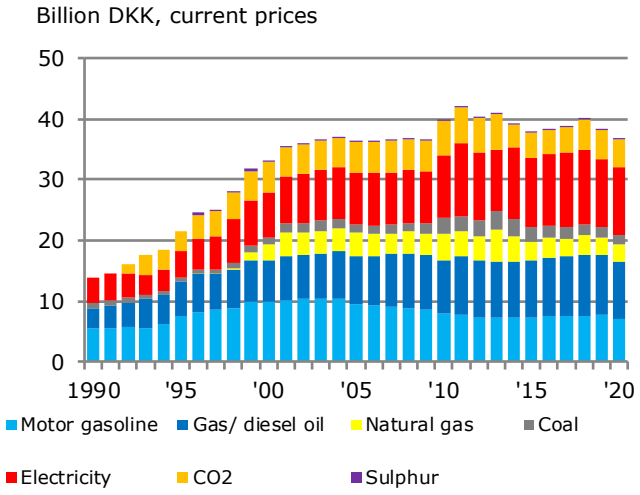
Energy expenses include i.a. motor gasoline, gas/diesel oil, natural gas, coal and electricity. These five fuels account for almost 50.7% of total energy expenses of DKK 238 billion, when including expenses for foreign bunkering of Danish vessels and oil refineries.

Of these fuels, the greatest share of energy expenses in 2019 was attributable to gas/diesel oil (DKK 43.9 billion). Electricity accounted for the second-largest share (DKK 37.8 billion).

This is followed by motor gasoline (DKK 24.9 billion), natural gas (DKK 9.8 billion), and coal (DKK 1.3 billion).

Source: Statistics Denmark

Revenue from energy, CO_2 and sulphur taxes



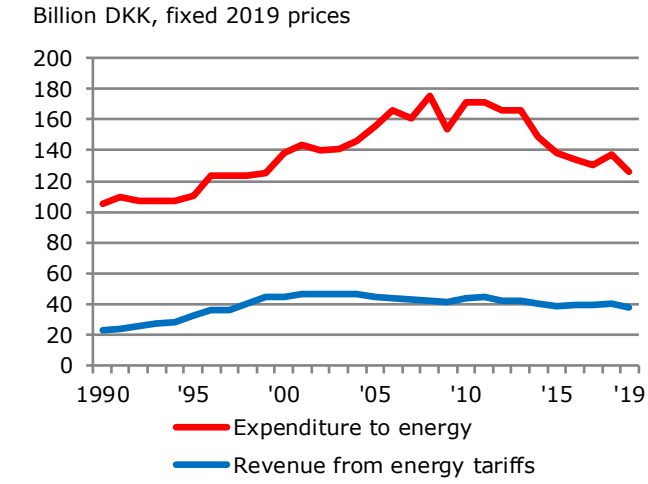
In 2020, revenues from energy taxes calculated in current prices were DKK 36.7 billion, which is a decrease of 3.9% compared with 2019. In addition to energy taxes, revenues include CO_2 and sulphur taxes. The largest contributions to revenues in 2020 are from electricity (DKK 11.2 billion), gas/diesel oil (DKK 9.5 billion), motor gasoline (DKK 7.1 billion) and CO_2 taxes (DKK 4.6 billion).

The 2020 revenues in current prices increased by 163% compared with 1990, when there were no CO_2 and sulphur taxes. Gas/diesel oil, electricity and motor gasoline have seen growths of 202%, 160% and 25.2%, respectively, since 1990.

In 2019 and 2020, energy, CO_2 and sulphur taxes amounted to 3.5% and 3.3%, respectively, of total tax and VAT revenues in Denmark.

Source: Statistics Denmark

Energy expenditures and tax revenues, fixed prices



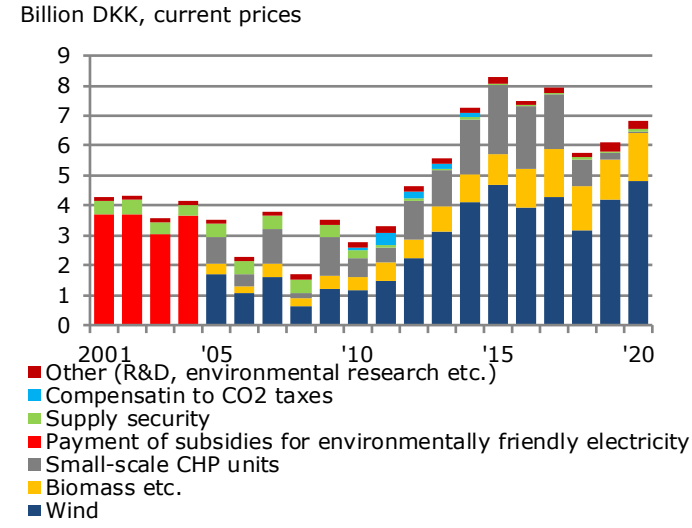
In order to assess changes in energy expenses and tax revenues in relation to general price fluctuations, the figures have been converted to 2019 prices.

Measured as 2019 prices, energy expenses in 2019 were 8.2% lower than in the previous year. Compared with 1990, energy expenses have increased by 19.5%.

Revenues from energy taxes measured in 2019 prices rose by 64.2% from 1990 to 2019.

Source: Statistics Denmark

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

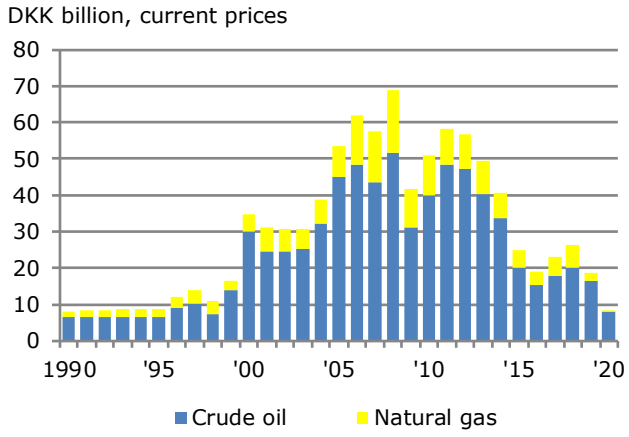


Total expenses for Public Service Obligations (PSO) were DKK 6.8 billion in 2020, compared with DKK 6.1 billion the year before.

For 2020, total funding support for environmentally friendly electricity production was DKK 6.5 billion, divided between DKK 4.8 billion for wind power, DKK 1.6 billion for biomass etc., DKK 0.06 billion for small-scale CHP and other small items of DKK 0.35 bn.

In 2010, compensation for CO_2 taxes was introduced, but this compensation was cancelled at the end of 2014.

Value of crude oil and natural gas production

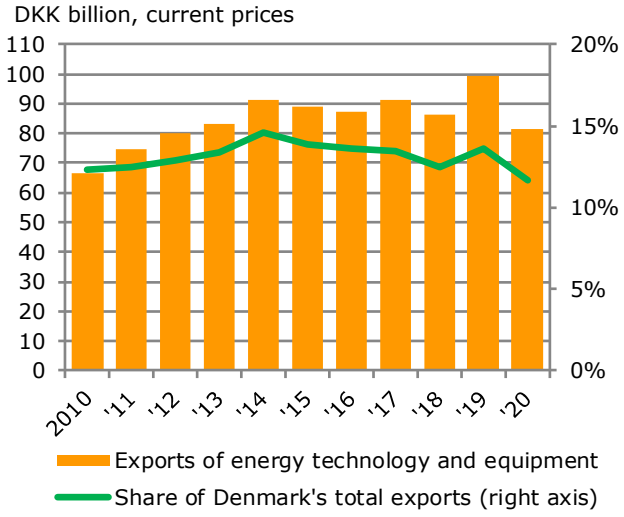


The value of the crude oil and natural gas produced from the North Sea in 2020 was DKK 8.4 billion, compared with DKK 18.6 billion the previous year. The value of crude oil fell from DKK 16.5 billion to DKK 8.0 billion, and the value of natural gas fell from DKK 2.1 billion to DKK 0.4 billion.

The value of the North Sea production depends on the scale of production as well as on world market prices. In 2020, the production of crude oil and natural gas fell by more than the production value. Production of crude oil and natural gas fell by 29.8% and 54.4%, respectively, in 2020.

Source: Danish Energy Agency.

Exports of energy technology and equipment



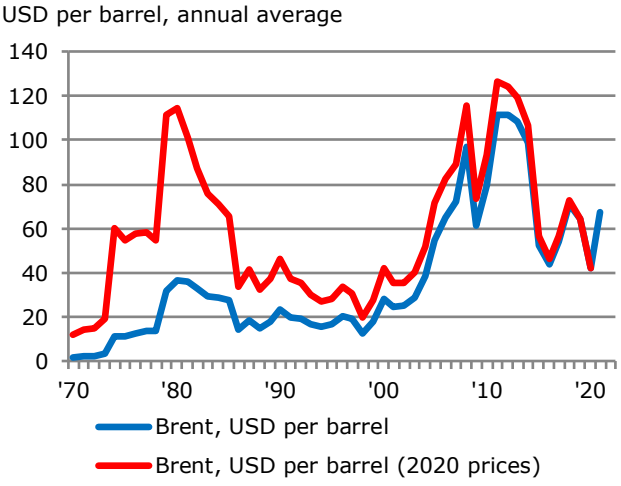
Exports of energy technology and equipment such as wind turbines, district heating pipes, thermostat valves, pumps etc. increased rapidly up to the year 2014.

The exports fell from 2019 to 2020 and were 18.0% less in 2020 than the year before. In 2020, Denmark exported energy technologies and equipment at a value of DKK 81.6 billion, corresponding to 11.7% of total Danish goods exports.

For more information see the publication on Danish energy technology and service exports 2020, "Eksport af energiteknologi og -service 2020", which is published as collaboration between the Danish Energy Agency, DI Energy and Danish Energy Association. The publication is available in Danish at the website of the Danish Energy Agency.

Source: Eksport af energiteknologi og -service 2020

Spot market prices for crude oil



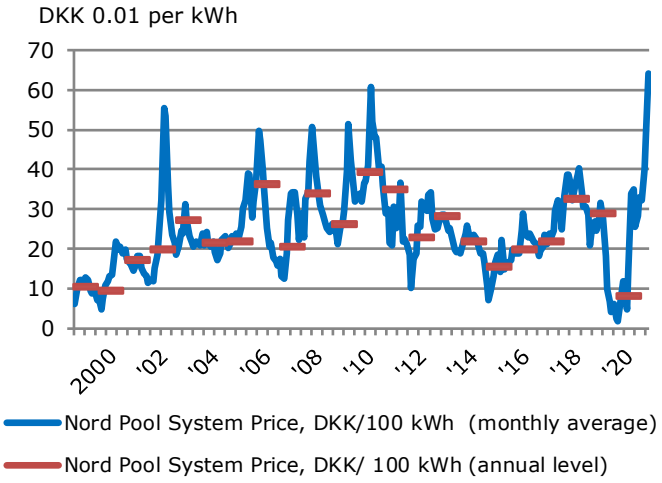
*Prices for 2021 cover only the first six months.

The average crude oil price was USD 42 per barrel in 2020. This is a relatively high price compared with the level in the mid-1990s, but it is a relatively low price compared with the level just before and during the economic crisis in 2008 and the period from 2011 to mid-2014.

The current price level was established in 2014, when, in the second half-year of 2014 up to the start of 2015, the price halved from around USD 100 to about USD 50 per barrel. The reason for the current relatively low price compared with 2011-2014 is the relatively large amount of oil available on global markets compared to demand. The price of oil rose to USD 67 during the first half of 2021.

Source: BP and the World Bank (prices for 2021)

Spot market prices for electricity



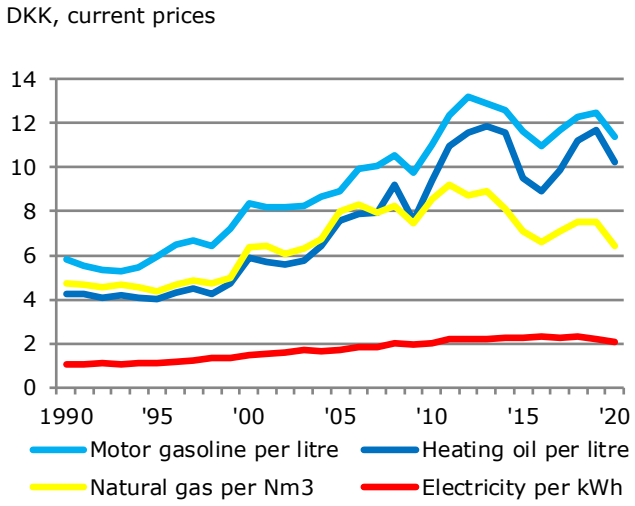
The system price of electricity on Nord Pool is set hour by hour on the basis of supply and demand. The price is affected by a number of factors, including precipitation and temperature. For example, the winter 2010/2011 was affected by concerns over water shortages and increasing electricity consumption 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 0.08 in 2020 compared with DKK 0.29 in 2019.

In the first half of 2021, the average system price was DKK 0.38 per kWh.

Source: Nord Pool

Energy prices for households



The energy prices shown are annual averages of current consumer prices, i.e. including energy and CO_2 taxes and VAT.

The price of heating oil was DKK 10.24 per litre in 2020, as opposed to DKK 11.66 per litre the year before, corresponding to a fall of 12.2%. In the period 1990-2020 the price increased by 142%.

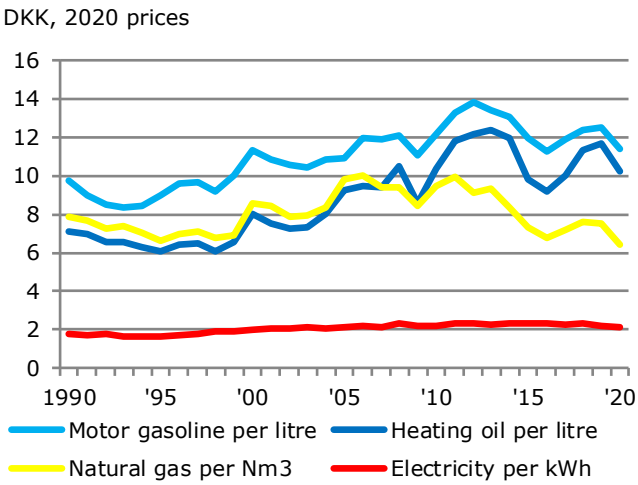
The price of natural gas for households was DKK 6.44 per Nm^3 in 2020, compared with DKK 7.54 per Nm^3 the year before, corresponding to a decrease of 14.6%.

The price of a litre of motor gasoline was DKK 11.37 in 2020, compared with DKK 12.48 in 2019, corresponding to a decrease of 8.9%. The tax on motor gasoline has varied considerably over time and this has affected the price.

The price of electricity was DKK 2.11 per kWh in 2020, compared with DKK 2.33 in 2019, corresponding to a decrease of 4.5%.

Source: Eurostat (electricity and natural gas) and Drivkraft Danmark (oil products)

Energy prices for households



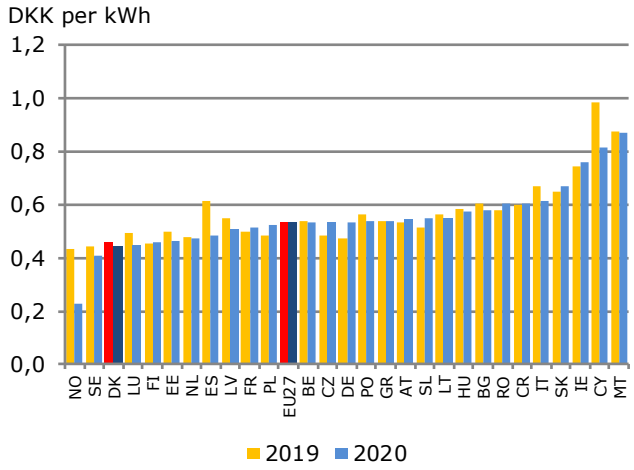
Household energy prices have been calculated at 2020 prices by adjusting current prices for changes in the general price level as stated in the consumer price index.

Measured in 2020 prices, the price per litre of motor gasoline has fallen by 9.2% in 2020 compared with 2019.

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 2020 it was DKK 10.24 per litre, which is 12.5% lower than in 2019. The price of natural gas was DKK 6.44 per Nm^3 in 2020, which is 14.9% lower than the year before. The price of electricity in 2020 prices was 4.8% lower in 2020 than the year before.

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

Electricity prices for industrial customers



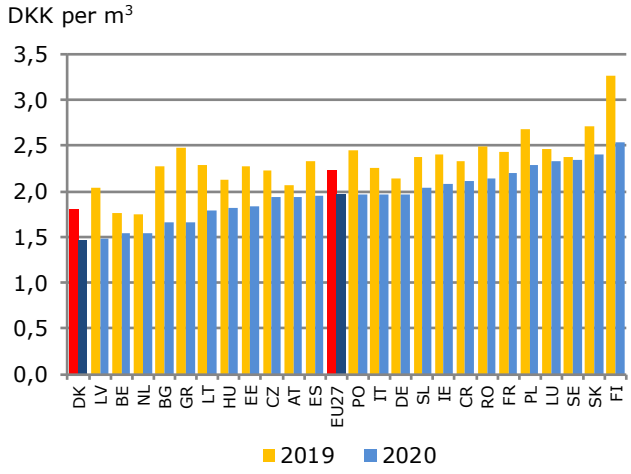
Electricity prices are shown in current prices (DKK per kWh) exclusive of taxes for industry customers with an annual consumption between 2 - 20 GWh.

In 2020, the price of electricity per kWh varied in the EU Member States (EU27) from DKK 0.41 in Sweden to DKK 0.87 in Malta. Norway had an electricity price of DKK 0.23 per kWh.

In 2020, the Danish electricity price was DKK 0.44 per kWh. This was 16.4% lower than the average price in EU27, which was DKK 0.53 per kWh. The Danish electricity price fell by 3.3% between 2019 and 2020. In EU27, the average electricity price was unchanged in 2020 compared with the year before.

Source: Eurostat

Natural gas prices for industrial customers



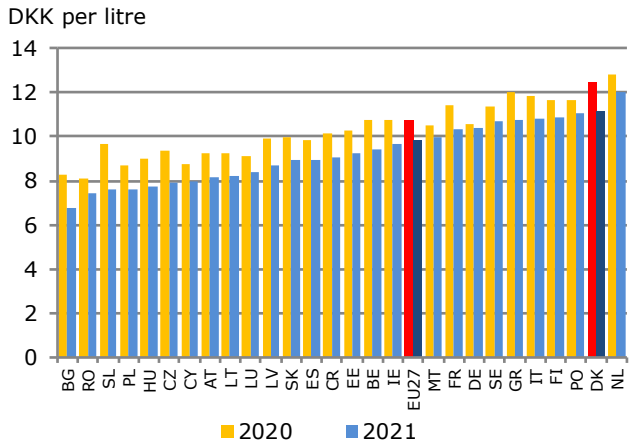
Natural gas prices are shown in current prices (DKK per m^3) exclusive of taxes for industry customers with an annual consumption of 10 TJ to 100 TJ.

In 2020, the price of natural gas per m^3 varied in the EU27 Member States from DKK 1.47 in Denmark to DKK 2.53 in Finland. The average EU27 price was DKK 1.96.

In 2020, the Danish price of natural gas was 18.7% lower than in 2019, while the average EU27 price was 11.9% lower compared to the year before.

Source: Eurostat

Motor gasoline prices

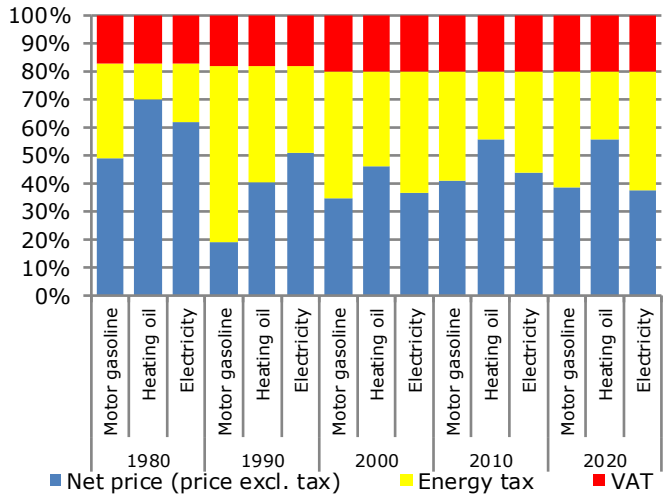


The price of motor gasoline in week 1 in 2020 and 2021, respectively, are shown in current prices (DKK per litre). Prices are for motor gasoline 95 unleaded, including taxes. The average for the EU27 Member States is a weighted average.

In 2021, the lowest price, DKK 6.75 per litre, was in Bulgaria, while the highest price, DKK 12.0, was in Netherlands. In Denmark, the price per litre was DKK 11.19, while the average price in EU27 was DKK 9.86 per litre.

Source: Oil Bulletin, European Commission

Composition of energy prices for households



The tax share 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. However, in 2020 there was a slight increase.

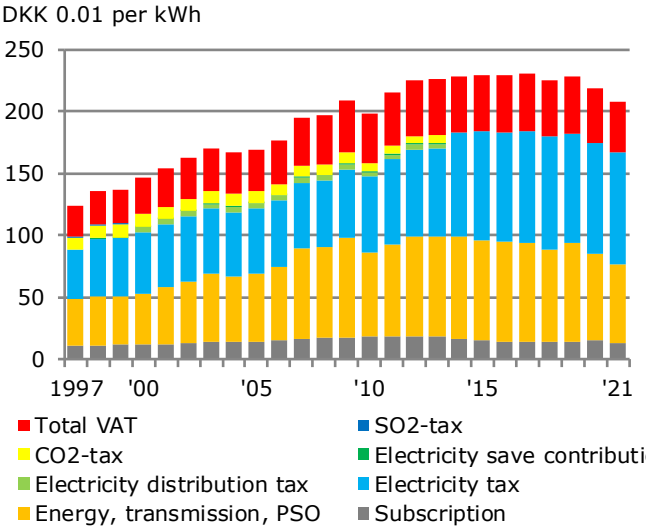
The price of motor gasoline in 2020 of DKK 11.37 per litre was made up as follows: Price exclusive of taxes and VAT 38.6%, taxes 41.4% and VAT 20.0%.

The price of heating oil in 2020 of DKK 10.24 per litre was made up as follows: Price exclusive of taxes and VAT 55.6%, taxes 24.4% and VAT 20.0%.

The price of electricity in 2020 of DKK 2.11 per kWh was made up as follows: Price inclusive of PSO and exclusive of taxes and VAT 37.7%, taxes 42.3% and VAT 20.0%.

Source: Eurostat (electricity) and Drivkraft Danmark (oil products)

Electricity prices for households 1997-2020 (as of 1 January), consumption of 4000 kWh



At the beginning of 2021, the average price of electricity for household customers with an annual consumption of 4,000 kWh was DKK 2.08 per kWh, which constitutes a decrease of 4.8% from the year before. The price of electricity has increased by 34.9% since 2001.

Total tax revenues for the state per kWh in 2021 were DKK 1.32 compared with DKK 0.96 in 2001. Until 2014 these taxes included: Electricity tax, electricity distribution tax, electricity savings contribution, 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 0.63 in 2020, as opposed to DKK 0.46 in 2001, while subscription costs per kWh were DKK 0.13 in 2020, as it also was in 2001.

Source: Danish Energy and Danish Utility Regulatory

CO_2 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 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 slowdown and a steeply falling price of international climate credits. In 2017, an EU agreement was reached on the revision of the Emissions Trading Directive for the period 2021-2030, which included a series of structural reforms aimed at addressing the large quota surplus. Since the conclusion of the agreement, the price of CO_2 quotas has increased significantly and reached over 64 euros in October 2021.

Energy consumption in EU27 and other countries 2019 - by share of renewable energy

	Energy consumption[1], PJ	Share in percentage						
		Oil	Natural gas	Coal	Nuclear power	Renewable energy and waste[2]	Waste, non-renewable	Net import of electricity
Sweden	2081	22	2	4	33	43(56)	2	-5
Latvia	195	33	24	1	0	39(41)	1	2
Finland	1433	25	6	6	17	36(43)	1	5
Denmark	**725**	**40**	**15**	**5**	**0**	**35(37)**	**2**	**3**
Austria	1453	37	22	8	0	30(34)	2	1
Portugal	1001	45	22	5	0	25(31)	1	1
Estonia	202	1	8	0	0	24(32)	1	4
Croatia	368	37	27	5	0	24(28)	0	6
Lithuania	327	39	24	2	0	20(25)	0	10
Italy	6508	35	39	4	0	19(18)	1	2
Romania	1386	30	28	15	9	18(24)	0	0
Slovenia	281	35	11	16	20	17(22)	1	0
EU27[3]	**60877**	**35**	**23**	**12**	**14**	**16(20)**	**1**	**0**
Germany	12795	36	25	18	6	15(17)	1	-1
Spain	5316	44	24	4	12	15(18)	0	0
Greece	986	50	19	14	0	13(20)	0	4
Bulgaria	789	25	13	28	23	13(22)	0	-3
Slovakia	713	21	24	16	24	13(17)	1	1
Czech Republic	1800	23	17	33	18	11(16)	1	-3
France	10526	31	15	3	41	11(17)	1	-2
Ireland	626	50	30	3	0	11(12)	1	0
Hungary	1118	31	32	7	15	11(13)	1	4
Poland	4353	30	16	42	0	10(12)	1	1
Cyprus	110	89	0	1	0	9(14)	1	0
Belgium	2377	39	27	5	20	8(10)	1	0
Netherlands	3179	40	42	8	1	7(9)	1	0
Luxembourg	190	65	15	1	0	7(7)	1	11
Malta	38	54	34	0	0	6(8)	0	6
Norway	1210	29	18	3	0	48(75)	1	0
UK	7646	39	37	3	7	12(12)	1	1
USA	92283	45	33	13	10	8	0	0
Japan	17546	35	23	27	4	6	2	0

[1] 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.

[3] The UK is excluded from EU27.

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

Consumption of renewable energy in EU27 and other countries in 2019

		Share in percentage					
	Consumption of renewable energy and waste, PJ	Hydro	Wind	Solar	Geo-thermal	Biomass, incl. waste	Biofuels
Sweden	891	26.4	8.0	03	0.0	50.0	7.8
Latvia	76	9.9	0.7	0.0	0.0	87.1	2.1
Finland	512	8.7	4.2	0.1	0.0	78.1	3.9
Denmark	**252**	**0.0**	**23.0**	**2.5**	**0.0**	**65.8**	**3.9**
Austria	433	33.7	6.2	3.1	0.3	48.2	3.0
Portugal	254	12.5	19.4	3.5	3.3	45.4	4.5
Croatia	89	23.4	5.9	1.1	2.2	63.8	1.5
Lithuania	67	1.9	8.1	0.5	0.0	83.2	5.9
Italy	1236	13.5	5.9	7.7	18.3	38.8	7.4
Estonia	49	0.1	5.0	0.5	0.0	92.0	0.0
Romania	252	22.3	9.7	2.6	0.7	57.9	6.9
Slovenia	48	33.7	0.0	3.2	1.3	49.8	8.1
EU27 [1)]	**9616**	**12.0**	**13.7**	**6.5**	**3.0**	**51.6**	**7.6**
Spain	791	11.2	25.3	17.9	0.1	32.0	8.9
Germany	1904	3.7	23.8	10.4	0.7	52.2	6.7
Bulgaria	103	10.2	4.6	6.1	1.4	66.2	7.4
Greece	133	10.8	19.7	21.0	0.3	30.9	6.7
France	1192	17.2	10.5	4.4	1.6	44.4	12.2
Hungary	118	0.7	2.2	5.0	5.6	78.9	5.8
Czech Republic	206	3.5	1.2	4.4	0.0	79.8	6.1
Ireland	68	4.7	53.1	1.0	0.0	27.6	5.8
Slovakia	92	17.0	0.0	2.6	0.4	71.0	7.9
Cyprus	10	0.0	8.3	37.3	0.6	29.4	1.3
Poland	415	1.7	13.1	1.3	0.3	70.6	9.7
Belgium	183	0.6	19.1	9.0	0.1	57.1	11.7
Luxembourg	13	2.9	7.6	4.3	0.0	44.4	0.0
Netherlands	227	0.1	18.2	9.0	2.4	52.2	16.1
Malta	2	0.0	0.0	45.8	0.0	6.5	21.8
Norway	581	77.7	3.4	0.0	0.0	9.4	3.4
UK	920	2.3	25.2	5.3	0.0	54.6	7.5
USA	7305	13.6	15.0	6.7	5.2	36.8	22.8
Japan	1096	26.5	2.5	25.2	9.7	34.5	1.6

[1)] *The UK is excluded from EU27.*
Source: Eurostat and IEA (figures for USA and Japan).

Key figures 2019 – ranked by degree of self-sufficiency

	Self-sufficiency, %			Energy consumption per capita, GJ		Energy intensity, gross energy consumption in toe per 1 million EUR (2010 prices)	
	Total	Oil	Natural gas	Gross energy consump-tion	Final energy consump-tion	2000	2019
Estonia	102	0	0	152	94	384	202
Romania	74	34	90	71	54	400	169
Sweden	74	0	0	203	137	149	104
Denmark	72	74	108	125	101	88	59
Czech Republic	62	1	2	169	107	363	223
Bulgaria	62	0	1	113	62	692	361
Latvia	61	0	0	101	87	273	179
Poland	57	3	20	115	83	353	203
Finland	56	0	0	260	196	189	150
France	53	1	0	157	97	140	108
Slovenia	50	0	1	135	101	225	153
Netherlands	44	3	75	184	137	157	116
Croatia	44	21	35	90	75	241	175
EU27 [1)]	42	4	16	136	96	151	113
Slovakia	41	0	3	131	87	410	191
Hungary	40	11	16	114	86	306	202
Austria	36	5	10	164	134	104	93
Germany	34	2	6	154	112	135	95
Belgium	28	0	0	208	146	197	146
Ireland	28	0	47	128	98	101	45
Spain	28	0	0	113	77	149	112
Portugal	27	0	0	97	72	149	124
Greece	27	1	0	92	64	173	142
Lithuania	26	1	0	117	100	367	185
Italy	24	8	6	109	83	106	92
Cyprus	8	0	0	126	80	186	134
Luxembourg	5	0	0	310	261	106	78
Malta	4	0	0	77	48	243	253
Norway	677	841	1 900	227	167	97	79
UK	67	71	51	115	80	115	66
USA	104	78	108	280	0		
Japan	12	0	3	139	0		

[1)] *The UK is excluded from EU27.*

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

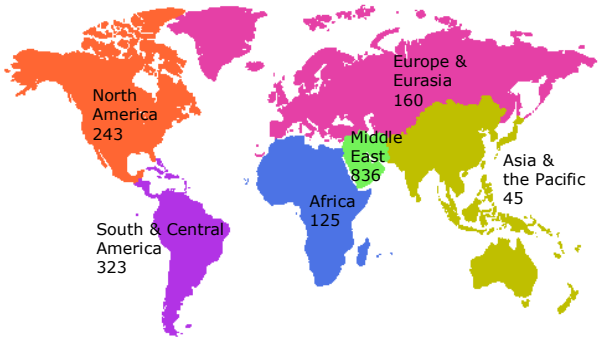
Reserves, production, stocks and consumption of oil by regions

	1990	2000	2005	2010	2015	2018	2019	2020	Change '90 - '20
Oil reserves[1], 1000 million barrels									
The world	**1001**	**1301**	**1372**	**1637**	**1684**	**1736**	**1735**	**1732**	**73.1%**
North America	101	237	223	220	229	246	244	243	140%
South and Central America	71	96	101	320	323	324	324	323	3556%
Europe and Eurasia	76	141	139	158	155	160	160	160	111%
Middle East	660	697	756	766	803	834	836	836	26.7%
Africa	59	93	112	125	128	126	125	125	113%
Asia and the Pacific	35	38	41	48	47	46	45	45	30.3%
Oil production, million tonnes									
The world	**3 158**	**3 598**	**3 932**	**3 979**	**4 358**	**4 484**	**4 478**	**4 165**	**31.9%**
North America	655	643	638	639	911	1 030	1 106	1 060	61.9%
South and Central America	234	345	375	379	398	333	318	300	28.3%
Europe and Eurasia	788	728	849	860	851	878	878	827	4.9%
Middle East	837	1 129	1 222	1 210	1 412	1 489	1 414	1 297	54.9%
Africa	318	372	465	487	386	394	402	327	3.0%
Asia and the Pacific	326	382	383	403	400	361	361	353	8.3%
Oil stocks*), million tonnes									
The OECD	**217**	**212**	**209**	**216**	**225**	**213**	**217**	**225**	**3.7%**
North America	90	75	78	84	87	82	82	84	-6.4%
Europe	106	110	108	109	114	105	109	116	9.7%
Pacific	22	27	22	22	24	26	26	25	16.5%
Oil consumption, million tonnes									
The world	**3 147**	**3 569**	**3 891**	**3 985**	**4 238**	**4 409**	**4 423**	**4 007**	**27.3%**
North America	922	1 058	1 122	1 009	1 004	1 034	1 029	894	-3.1%
South and Central America	165	229	241	275	300	279	274	246	48.9%
Europe and Eurasia	1 139	932	960	897	864	900	898	791	-30.5%
Middle East	163	234	286	347	390	384	391	361	121%
Africa	96	118	138	163	182	188	190	165	72.7%
Asia and the Pacific	662	997	1 144	1 295	1 497	1 625	1 640	1 549	134%
Total energy consumption, Mtoe									
The world	**8 172**	**9 422**	**10 906**	**12 071**	**13 003**	**13 761**	**13 889**	**13 295**	**62.7%**
North America	2 297	2 720	2 785	2 711	2 724	2 816	2 792	2 577	12.2%
South and Central America	335	487	538	626	692	683	677	626	86.8%
Europe and Eurasia	3 240	2 845	2 985	2 956	2 845	2 957	2 922	2 729	-15.8%
Middle East	256	408	540	701	832	871	896	870	239%
Africa	224	275	325	382	432	466	475	444	98.1%
Asia and the Pacific	1 819	2 687	3 733	4 696	5 478	5 968	6 127	6 049	233%
The world	**39**	**38**	**36**	**33**	**33**	**32**	**32**	**30**	
North America	40	39	40	37	37	37	37	35	
South and Central America	49	47	45	44	43	41	41	39	
Europe and Eurasia	35	33	32	30	30	30	31	29	
Middle East	64	57	53	50	47	44	44	41	
Africa	43	43	42	43	42	40	40	37	
Asia and the Pacific	36	37	31	28	27	27	27	26	

[1] Crude oil, at the end of the year
*) At the end of the year
Sources: BP Statistical Review of World Energy
IEA, International Energy Agency, Paris

Proved oil reserves at end 2020

Billion barrels



At the end of 2020, the world's total proved oil reserves totalled 1732 billion barrels.

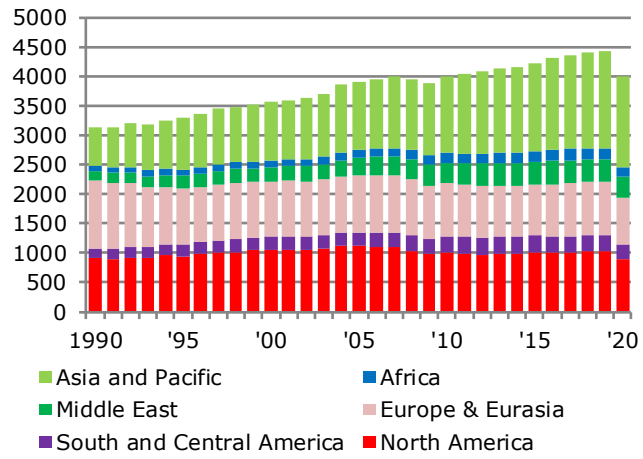
Of which, 48.3% of crude oil reserves are in the Persian Gulf region, where the fields are relatively large and geologically easily accessible, which means production costs are low.

Comparing proved regional oil reserves with actual regional oil production (reserves-to-production ratio, R/P), shows that Europe and Eurasia have reserves for 10.4 years' and 29.6 years' unchanged production, respectively, while North America has reserves for 28.2 years. The R/P ratio for total world oil reserves is 53.6 years' unchanged production. However, new oil reserves are being discovered continually, and for 2020, oil reserves are almost unchanged compared with 2019.

Source: BP Statistical Review of World Energy

Oil consumption by region

Million tonnes



In 2020, total world oil consumption was 4 billion tonnes, which is 9.4% less than the year before. A total of 22.3% of this oil was consumed in North America, which accounted for 25.5% of the world's crude oil production. Europe & Eurasia accounted for 19.7% of oil consumption and 19.9% crude oil production.

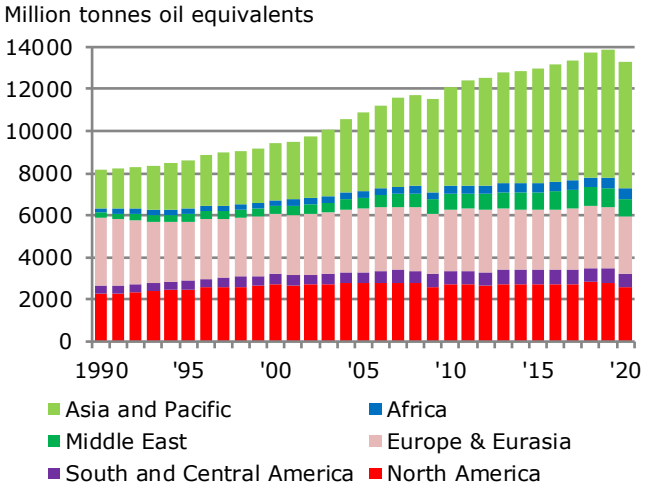
Asia and the Pacific's share of consumption was 38.7% in 2020, the Middle East's share was 9.0%, South and Central America's share was 6.1%, while Africa's share was 4.1%.

Total world oil consumption in 2020 was 30.1% of total world energy consumption compared with 31.8% in 2019. For Europe & Eurasia, this figure was 29.0% compared with 30.7% in 2019.

Source: BP Statistical Review of World Energy

Energy consumption by region

Million tonnes oil equivalents



World energy consumption was 13.295 billion tonnes oil equivalents in 2020, which is 4.3% less than in 2019. Except for in 2009, world consumption increased steadily over the period 1990-2019. The fall from 2008 to 2009 was due to economic recession, especially in North America and in Europe & Eurasia.

In 2020, energy consumption fell in all regions. The drop was largest in North America and South & Central America at about 7.7% and 7.6%, respectively.

The percentage increase in energy consumption from 2019 to 2020 in Asia and the Pacific, Africa and the Middle East was 1.3%, 6.5% and 2.8%, respectively. Asia and the Pacific accounted for 45.5% of total world energy consumption.

In 2020, energy consumption fell by 6.6% in Europe & Eurasia, which accounted for 20.5% of total world energy consumption.

Source: BP Statistical Review of World Energy

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 petrole 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.
CO_2 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. This causes the amount of degree days to show a declining tendency when looking over a longer period of 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 use	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.

TERMINOLOGY AND DEFINITIONS

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 intensity	Energy consumption in relation to gross domestic product (GDP) or gross value added (GVA) at 2010 prices, 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 period.
Gross energy consumption	Observed energy consumption adjusted for fuel consumption related to foreign trade in electricity. See "Adjustments for trade in electricity" above.
Gross energy 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 TJ (Tera) = 10^6 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.
LNG	Liquefied Natural Gas. Use as a fuel. In Denmark LNG is kept secret with a rounded figure.
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_2 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^3.
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

Denmark	1990	2000	2005	2010	2015	2018	2019	2020	Change '90-'20
Energy intensity, gross energy consumption [TJ per million GDP]	0.636	0.500	0.474	0.450	0.391	0.369	0.351	0.335	-47.3%
Energy intensity, final energy consumption [TJ per million GDP]	0.469	0.388	0.372	0.350	0.318	0.304	0.293	0.280	-40.3%
Gross energy consumption per capita [GJ]	159	157	157	147	133	134	129	120	-24.6%
Final energy consumption per capita [GJ]	118	122	123	114	109	110	108	101	-14.6%
Degree of self-sufficiency [%]	52	139	154	120	90	75	70	57	9.8%
Oil consumption - share of gross energy consumption [%]	43	45	41	38	37	37	38	34	-21.5%
Renewable energy - share of gross energy consumption [%]	5.8	9.6	14.5	20.0	28.6	32.3	35.5	40.2	590%
Refinery capacity [million tonnes per year]	9.0	9.2	9.0	9.0	9.0	9.0	9.0	9.0	•
Electricity capacity [MW]	9 124	12 598	13 088	13 450	13 995	14 987	15 135	15 489	69.8%
Wind turbine capacity – share of total electricity capacity [%]	3.6	19.0	23.9	28.3	36.3	40.8	40.3	40.4	1031%
Net electricity import - share of domestic supply [%]	22.5	1.9	3.8	-3.2	17.5	15.1	16.8	19.8	-12.0%
CHP production - share of total thermal electricity production [%]	37	56	64	61	82	75	87	80	118%
CHP production - share of total district heating production [%]	59	82	82	77	66	66	68	66	11.7%
Renewable electricity - share of total domestic electricity supply [%]	2.6	15.9	27.4	34.8	56.0	60.5	67.5	68.0	2516%
CO_2 emission per capita [tonnes]	11.9	10.4	9.7	8.5	6.9	6.5	6.0	5.2	-56.5%
CO_2 emissions per GDP [tonnes per million GDP]	47	33	29	26	20	18	16	14	-69.6%
CO_2 emissions per fuel unit [kilogram per GJ]	75	66	62	58	52	52	49	49	-34.4%
CO_2 emissions per kWh electricity sold [gram per kWh]	929	632	537	505	348	305	226	211	-77.3%
CO_2 emissions per consumed unit of district heating [kilogram per GJ]	62	43	39	33	32	26	24	20	-67.5%

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_2 content in 2020

	Calorific values	CO_2 emissions factors
	GJ/ton	Kg/GJ
Crude oil/ North Sea	43.00	
Refinery feedstocks	42.70	
Refinery gas	52.00	56.81
LPG	46.00	64.80
LVN	44.50	73.30
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	74.10
Fuel oil	40.65	79.03
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 Nm^3	36.70	55.52
Gas works gas/1000 m^3	20.78	
Coal in electricity plants	23.89	94.20
Other hard coal	24.17	94.20
Coke	29.30	107.00
Brown coal briquettes	18.30	97.50
Straw	14.50	
Wood chips	9.30	
Firewood, hard wood GJ/m^3	10.40	
Firewood, soft wood GJ/m^3	7.60	
Wood pellets	17.50	
Wood waste	14.70	
Wood waste, GJ/m^3 loose volume	3.20	
Biogas, GJ/1000 m^3	23.00	
Bio methane (GJ/1000 m^3)	36.70	
Waste	10.60	
Biodiesel	37.50	
Bioethanol	26.70	
Bio oil	37.20	

Climate adjustments

	Degree days	
Year	Specific year	Normal year
2013	3207	3155
2014	2664	3131
2015	2921	3112
2016	2998	3070
2017	2970	3057
2018	2900	3041
2019	2847	3030
2020	2715	3021

Tax rates in 2020

	Energy taxes	CO_2 taxes
Transport		
Motor gasoline (DKK 0.01 per l)	516.2	40.4
Light diesel oil (DKK 0.01 per l)	312.0	46.9
Low-sulphur diesel oil (DKK 0.01 per l)	430.7	40.4
Other uses		
LPG (DKK 0.01 per l)	188.8	28.5
Other kerosene (DKK 0.01 per l)	312.0	46.9
Heating diesel oil (DKK 0.01 per l)	203.5	46.6
Fuel oil (DKK 0.01 per kg)	230.6	56.1
Petroleum coke (DKK 0.01 per l)	312.0	46.9
Natural gas (DKK 0.01 per Nm^3)	224.6	40.0
Electricity plant coal (DKK per tonne)	1589.0	470.6
Coke (DKK per tonne)	1873.0	532.2
Brown coal (DKK per tonne)	1079.0	319.4
Electricity (DKK 0.01 per kWh)	21.02	
Electricity for space heating[1)] (DKK 0.01 per kWh)	89.2	

[1)] For consumption of more than 4000 kWh per year in households.

Source: Ministry of Taxation

Volume weights in 2020	
	tonne/m^3
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
Biodiesel	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 liters
1 mtoe (mill. tonne oil equivalent)	=	41.868 PJ

Symbols

- • Not applicable
- - Nil
- 0 Less than half

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