



Evaluation Tables of the Energy Balance for Germany

Energy data for the years 1990 to 2021

Last update: September 2022 (final results up to 2020, provisional data for 2021)

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ARBEITSGEMEINSCHAFT ENERGIEBILANZEN e.V.

Preliminary notes on the evaluation tables of the German Energy Balance:

This publication summarizes the most important data of the energy balances since 1990 in the form of aggregated time series. Especially for the quick reader, who is not interested in detailed energy balances of each year, we give a well-founded overview of the energy statistical development in Germany. It is to be considered, that the data for the most recent year are provisional.

Since 1995 the AG Energiebilanzen applies the physical energy content method for energy balances. This method assumes a 33 % efficiency of nuclear electricity generation, i.e. the input of primary energy is three times as high as the electricity generation. Electricity generation from renewable energy without fuel consumption (hydro, wind, photovoltaics) is calculated with 100 % efficiency. Until 1994 the primary energy consumption of these energy carriers was calculated by the average fuel input in conventional power plants (according to the former "substitution method"). However, all data in this publication are calculated by the physical energy content method.

The structure of this data collection is similar to the structure of the energy balances. It begins with primary energy production and foreign trade (section 1). Section 2 presents an overview of primary energy consumption by energy carriers und the structure of the energy consumption by sectors. The importance of renewable energy is illustrated in section 3. Section 4 shows the fuel input for electricity generation. Combined heat and power generation (CHP) is considered in more detail in section 5. Section 6 provides detailed tables on the development of the final energy consumption by energy carriers and sectors. Furthermore, section 7 illustrates the development of important energy efficiency indicators. In the annex, the classification of energy carriers considered in this publication is compared to the more detailed classification in the energy balances.

The following tables present also data that are not shown in this form in the energy balance. This is especially true for the presentation of CHP, a technology that concerns different energy conversion and consumption sectors of the energy balance. The fuel input for CHP electricity generation is shown in the conversion sector ("Public thermal power station", "Industrial power station" or "Hydro, wind, photovoltaic and other power stations"). However, the fuel input for CHP heat generation is shown in the conversion sector "Public cogeneration plants" only if it serves district heating. The fuel input for heat generation in CHP plants of the industry is included in the final energy consumption. The heat generated in these plants cannot be seen in the energy balance. The same applies to CHP plants of other auto-producers (less than 1 MW). Hence, the schema of the energy balance alone cannot show the full importance of CHP. Therefore, additional data on energy input and generation of heat and power in CHP plants are shown in section 5.

It should be noted that the figures for the years from 2012 onwards are not fully comparable to the data for previous years due to methodological changes. A short documentation (in German) can be found under:

Methodological changes (German Energy Balance) as of 2012

In the "Official Mineral Oil Data" of the Federal Office of Economics and Export Control (BAFA) the monthly domestic deliveries of all mineral oil products for Germany are shown. There was a change in the statistical overview in 2017. Since the reporting year 2018, petroleum components that were previously allocated to other groups have been shown separately. Until 2016, gasoline components were recorded either for motor gasoline or for naphtha, middle distillate components for diesel oil or fuel oil light. The order of magnitude of these component groups is not known for previous years and the distribution among the other groups cannot be determined either. This means that before 2017 other components of unknown size were allocated to gasoline and diesel. Therefore, the official data for 2017 are not comparable with previous years.

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Additional information on the German Energy Balance:

The evaluation tables were compiled on behalf of AG Energiebilanzen by

- **Energy Environment Forecast & Analysis (EEFA, www.eefa.de),**
- **Deutsches Institut für Wirtschaftsforschung (DIW Berlin, www.diw.de) und**
- **Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW, www.zsw-bw.de)**

The data are based on the published German Energy Balances (if not explicitly stated otherwise).

Commencing with the balance year 2018, the Federal Ministry for Economic Affairs and Energy stipulated in conjunction with the renewed assignment of the AG Energiebilanzen to prepare the energy balances for Germany that it incorporates the relevant data on renewables which are ascertained by the Working Group on Renewable Energies-Statistics (AGEE-Stat) under the auspices of the Federal Environment Agency (UBA) directly into the energy balances to be established by AGEB.

When it comes to renewables, AGEE-Stat had been an important data source for AGEB already in the past. The fact that original official statistics which could be adopted directly are generally not available for renewables prompts us to make individual estimates of the respective consumption values for whom it is often necessary to rely on specific in-house model calculations which have been specifically developed for this purpose. This applies to both AGEB and AGEE-Stat. It is therefore understandable that different approaches are taken by the model-based estimates of both institutions which do not necessarily lead to the same results.

Nevertheless, it seemed to be advisable to refer to a single data source in order to avoid any divergences which would be hard to explain to the public. When it comes to renewables, AGEE-Stat will, thus, be responsible for the respective data in the energy balance as well as in the requisite derivable evaluations starting with the balance year 2018. This already applies to the tabular information on renewable energy carriers included in this energy report.

1.1 Indigenous energy production by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indigenous energy production by energy source in PJ																																	
Hard coal	PJ	2,089	1,980	1,957	1,735	1,557	1,595	1,434	1,391	1,234	1,194	1,012	825	790	777	784	756	641	651	521	415	387	361	324	229	230	185	115	108	75	0	0	0
Lignite	PJ	3,142	2,462	2,129	1,939	1,830	1,711	1,661	1,573	1,485	1,453	1,528	1,612	1,653	1,641	1,660	1,611	1,591	1,628	1,576	1,529	1,535	1,595	1,676	1,660	1,617	1,608	1,544	1,540	1,506	1,190	979	1,153
Petroleum	PJ	156	149	140	131	124	125	121	120	123	116	131	140	152	158	151	153	151	146	131	119	107	112	111	112	104	103	100	94	88	82	81	77
Gases	PJ	575	569	578	576	603	621	671	660	643	687	649	654	656	681	630	598	625	615	546	541	462	459	404	389	311	290	277	254	209	202	172	173
Natural gas, Petroleum gas	PJ	563	556	564	561	588	607	657	646	631	674	638	644	642	668	618	588	611	604	537	534	452	447	391	374	300	280	266	246	201	194	163	165
Renewable Energy Sources	PJ	200	200	210	230	255	275	270	344	379	404	417	432	455	561	650	769	939	1,117	1,147	1,208	1,421	1,463	1,378	1,510	1,544	1,666	1,700	1,820	1,797	1,920	1,949	1,953
Other energy sources	PJ	62	0	0	0	0	0	0	0	0	0	56	51	43	139	165	211	157	159	202	224	255	231	208	226	224	236	235	214	218	204	192	
Total	PJ	6,224	5,359	5,014	4,610	4,370	4,328	4,157	4,089	3,865	3,854	3,793	3,714	3,750	3,955	4,040	4,099	4,103	4,315	4,123	4,036	4,155	4,246	4,124	4,109	4,033	4,076	3,973	4,051	3,890	3,612	3,385	3,548
Indigenous energy production by energy source in mill. tce																																	
Hard coal	mill. tce	71.3	67.6	66.8	59.2	53.1	54.4	48.9	47.5	42.1	40.7	34.5	28.1	27.0	26.5	26.7	25.8	21.9	22.2	17.8	14.1	13.2	12.3	11.1	7.8	7.8	6.3	3.9	3.7	2.6	0.0	0.0	0.0
Lignite	mill. tce	107.2	84.0	72.6	66.1	62.5	58.4	56.7	53.7	50.7	49.6	52.1	55.0	56.4	56.0	56.6	55.0	54.3	55.5	53.8	52.2	52.4	54.4	57.2	56.6	55.2	54.9	52.7	52.5	51.4	40.6	33.4	39.3
Petroleum	mill. tce	5.3	5.1	4.8	4.5	4.2	4.3	4.1	4.1	4.2	4.0	4.5	4.8	5.2	5.4	5.2	5.1	5.0	4.5	4.1	3.6	3.8	3.8	3.8	3.5	3.5	3.4	3.2	3.0	2.8	2.6		
Gases	mill. tce	19.6	19.4	19.7	19.6	20.6	21.2	22.9	22.5	22.0	23.4	22.1	22.3	22.4	23.2	21.5	20.4	21.3	21.0	18.6	18.5	15.7	13.8	13.3	10.6	9.9	9.5	8.7	7.1	6.9	5.9	5.9	
Natural gas, Petroleum gas	mill. tce	19.2	19.0	19.2	19.1	20.1	20.7	22.4	22.0	21.5	23.0	21.8	22.0	21.9	22.8	21.1	20.1	20.8	20.6	18.3	18.2	15.4	15.2	13.3	12.8	10.2	9.5	9.1	8.4	6.8	6.6	5.6	5.6
Renewable Energy Sources	mill. tce	6.8	6.8	7.2	7.9	8.7	9.4	9.2	11.8	12.9	13.8	14.2	15.5	19.1	22.2	26.3	32.0	38.1	39.1	41.2	48.5	49.9	47.0	51.5	52.7	56.8	58.0	62.1	61.3	65.5	66.6		
Other energy sources	mill. tce	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.8	1.5	4.7	5.6	7.2	5.4	6.9	7.7	8.7	7.9	7.1	7.7	7.6	8.0	8.0	7.3	7.5	7.0	6.6		
Total	mill. tce	212.4	182.8	171.1	157.3	149.1	147.7	141.8	139.5	131.9	131.5	129.4	126.7	128.0	135.0	137.8	139.8	140.0	147.2	140.7	137.7	141.8	144.9	140.7	140.2	137.6	139.1	135.5	138.2	132.7	123.2	115.5	121.0
Indigenous energy production by energy source in %																																	
Hard coal	%	33.6	36.9	39.0	37.6	35.6	36.9	34.5	34.0	31.9	31.0	26.7	22.2	21.1	19.6	19.4	18.4	15.6	15.1	12.6	10.3	9.3	8.5	7.9	5.6	5.7	4.5	2.9	2.7	1.9	0.0	0.0	0.0
Lignite	%	50.5	45.9	42.5	42.1	41.9	39.5	39.9	38.5	38.4	37.7	40.3	43.4	44.1	41.5	41.1	39.3	38.8	37.7	38.2	37.9	36.9	37.6	40.6	40.4	40.1	39.5	38.9	38.0	38.7	32.9	28.9	32.5
Petroleum	%	2.5	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3.2	3.0	3.5	3.8	4.0	4.0	3.7	3.7	3.7	3.4	3.2	3.0	2.6	2.7	2.6	2.5	2.5	2.3	2.3	2.4	2.2			
Gases	%	9.2	10.6	11.5	12.5	13.8	14.4	16.1	16.2	16.6	17.8	17.1	17.6	17.5	17.2	15.6	14.6	15.2	14.2	13.2	11.1	10.8	9.8	9.5	7.7	7.1	7.0	6.3	5.4	5.6	5.1	4.9	
Natural gas, Petroleum																																	

1.2 Import by energy source

1990 - 2020: final data; 2021: provisional data

Other energy sources: incl. import of district heat

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1.3 Export by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Export by energy source in PJ																																	
Hard coal	PJ	267	202	122	74	115	82	50	47	36	27	48	39	18	56	55	59	56	60	66	40	64	29	71	16	20	15	29	31	30	35	36	44
Lignite	PJ	92	44	27	22	21	15	16	14	12	11	13	14	12	13	14	16	20	20	24	24	27	29	33	33	45	42	30	32	28	23	26	
Petroleum	PJ	620	606	908	952	981	633	667	683	695	776	923	821	838	819	1,049	1,138	1,174	1,213	1,079	943	784	771	791	847	886	935	952	975	938	917	925	1,061
Gases	PJ	41	68	113	121	150	101	117	126	152	206	307	221	243	448	503	712	545	551	529	465	720	619	599	773	784	1,144	811	1,129	2,799	2,394	2,683	2,498
Natural gas, Petroleum gas	PJ	39	66	111	119	149	101	116	125	151	205	306	220	243	448	503	712	545	551	529	465	720	619	599	773	784	1,144	811	1,129	2,799	2,394	2,683	2,498
Renewable Energy Sources	PJ	3	3	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	27	21	41	59	72	66	61	58	99	104	116	111
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Electricity	PJ	112	114	123	119	125	126	154	145	140	142	151	157	164	194	185	223	237	228	226	198	216	202	242	257	268	307	284	289	290	262	241	253
Nuclear energy	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	PJ	1,135	1,037	1,296	1,290	1,394	957	1,004	1,016	1,035	1,163	1,442	1,253	1,276	1,530	1,806	2,148	2,033	2,073	1,925	1,688	1,837	1,672	1,778	1,985	2,074	2,509	2,167	2,514	4,190	3,741	4,025	3,993
Export by energy source in mill. tce																																	
Hard coal	mill. tce	9.1	6.9	4.2	2.5	3.9	2.8	1.7	1.6	1.2	0.9	1.6	1.3	0.6	1.9	1.9	2.0	1.9	2.1	2.3	1.4	2.2	1.0	2.4	0.5	0.7	0.5	1.0	1.1	1.0	1.2	1.2	1.5
Lignite	mill. tce	3.1	1.5	0.9	0.8	0.7	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	1.0	1.1	1.1	1.5	1.4	1.0	1.1	1.1	0.8	0.9	
Petroleum	mill. tce	21.2	20.7	31.0	32.5	33.5	21.6	22.8	23.3	23.7	26.5	31.5	28.0	28.6	27.9	35.8	38.8	40.1	41.4	36.8	32.2	26.7	26.3	27.0	28.9	30.2	31.9	32.5	33.3	32.0	31.3	31.6	36.2
Gases	mill. tce	1.4	2.3	3.8	4.1	5.1	3.5	4.0	4.3	5.2	7.0	10.5	7.5	8.3	15.3	17.2	24.3	18.6	18.8	18.1	15.9	24.6	21.1	20.4	26.4	26.7	39.0	27.7	38.5	95.5	81.7	91.6	85.2
Natural gas, Petroleum gas	mill. tce	1.3	2.3	3.8	4.1	5.1	3.4	4.0	4.3	5.2	7.0	10.5	7.5	8.3	15.3	17.2	24.3	18.6	18.8	18.1	15.9	24.6	21.1	20.4	26.4	26.7	39.0	27.7	38.5	95.5	81.7	91.6	85.2
Renewable Energy Sources	mill. tce	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	0.7	1.4	2.0	2.5	2.2	2.1	2.0	3.4	3.5	4.0	3.8
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	mill. tce	3.8	3.9	4.2	4.0	4.3	4.3	5.2	5.0	4.8	4.9	5.2	5.4	5.6	6.6	6.3	7.6	8.1	7.8	7.7	6.7	7.4	6.9	8.3	8.8	9.1	10.5	9.7	9.9	9.9	8.9	8.2	8.6
Nuclear energy	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	mill. tce	38.7	35.4	44.2	44.0	47.6	32.7	34.2	35.3	39.7	49.2	42.7	43.5	52.2	61.6	73.3	69.4	70.7	65.7	57.6	62.7	57.1	60.7	67.7	70.8	85.6	73.9	85.8	142.9	127.6	137.3	136.3	
Export by energy source in %																																	
Hard coal	%	23.6	19.5	9.4	5.7	8.3	8.6	5.0	4.7	3.5	2.3	3.3	3.1	1.4	3.6	3.0	2.7	2.8	2.9	3.4	2.3	3.5	1.8	4.0	0.8	1.0	0.6	1.3	1.2	0.7	0.9	0.9	1.1
Lignite	%	8.1	4.3	2.1	1.7	1.5	1.6	1.6	1.4	1.2	1.0	0.9																					

1.4 Net import by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
		Net import by energy source in PJ																															
Hard coal	PJ	177	287	372	355	393	410	501	623	742	790	906	1,059	1,080	1,115	1,155	1,076	1,310	1,346	1,298	1,076	1,321	1,399	1,386	1,597	1,535	1,529	1,605	1,380	1,262	1,144	832	1,087
Lignite	PJ	-32	19	33	31	28	24	25	24	22	24	17	19	3	-10	-12	-14	-15	-17	-22	-25	-27	-31	-31	-43	-40	-29	-31	-32	-28	-22	-26	
Petroleum	PJ	5,072	5,445	5,595	5,576	5,573	5,508	5,693	5,646	5,875	5,384	5,308	5,527	5,197	5,269	5,141	5,192	5,166	4,586	4,910	4,635	4,695	4,472	4,556	4,614	4,489	4,534	4,573	4,626	4,397	4,529	4,073	3,967
Gases	PJ	1,751	1,828	1,866	1,988	2,062	2,220	2,517	2,441	2,359	2,433	2,368	2,443	2,522	2,498	2,663	2,599	2,727	2,495	2,663	2,618	2,587	2,535	2,511	2,667	2,379	2,463	2,785	2,890	2,961	3,177	2,790	2,938
Natural gas, Petroleum gas	PJ	1,752	1,829	1,867	1,989	2,063	2,221	2,518	2,442	2,359	2,434	2,369	2,443	2,522	2,498	2,663	2,599	2,727	2,495	2,663	2,618	2,587	2,535	2,511	2,667	2,379	2,463	2,785	2,890	2,961	3,177	2,790	2,938
Renewable Energy Sources	PJ	-3	-3	-3	-3	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-7	-8	-1	7	-12	-26	-22	-24	-23	5	-15	23	-3
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Electricity	PJ	3	-2	-19	3	8	17	-19	-8	-2	4	11	10	2	-29	-26	-31	-71	-69	-81	-52	-64	-23	-83	-116	-122	-174	-182	-189	-175	-118	-68	-67
Nuclear energy	PJ	1,606	1,609	1,733	1,675	1,650	1,682	1,764	1,859	1,764	1,855	1,851	1,868	1,798	1,801	1,822	1,779	1,826	1,533	1,623	1,472	1,533	1,178	1,085	1,061	1,060	923	833	829	819	702	754	
Total	PJ	8,573	9,183	9,577	9,625	9,711	9,862	10,481	10,584	10,760	10,490	10,462	10,926	10,601	10,644	10,744	10,601	10,942	9,873	10,391	9,720	10,039	9,533	9,430	9,781	9,272	9,290	9,652	9,486	9,247	9,508	8,331	8,650
Net import by energy source in mill. tce																																	
Hard coal	mill. tce	6.1	9.8	12.7	12.1	13.4	14.0	17.1	21.3	25.3	26.9	30.9	36.1	36.8	38.0	39.4	36.7	44.7	45.9	44.3	36.7	45.1	47.7	47.3	54.5	52.4	52.2	54.8	47.1	43.0	39.0	28.4	37.1
Lignite	mill. tce	-1.1	0.7	1.1	1.1	0.9	0.8	0.8	0.8	0.8	0.8	0.6	0.7	0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7	-0.7	-0.8	-0.9	-1.1	-1.1	-1.5	-1.4	-1.0	-1.1	-0.9	-0.8	-0.9	-0.9
Petroleum	mill. tce	173.1	185.8	190.9	190.2	190.1	187.9	194.3	192.6	200.5	183.7	181.1	188.6	177.3	179.8	175.4	177.1	176.3	156.5	167.5	158.2	160.2	152.6	155.4	157.4	153.2	154.7	156.0	157.9	150.0	154.5	139.0	135.3
Gases	mill. tce	59.7	62.4	63.7	67.8	70.4	75.8	85.9	83.3	80.5	83.0	80.8	83.3	86.0	85.2	90.9	88.7	93.1	90.9	89.3	88.3	86.5	85.7	91.0	81.2	84.0	95.0	98.6	101.0	108.4	95.2	100.3	
Natural gas, Petroleum gas	mill. tce	59.8	62.4	63.7	67.9	70.4	75.8	85.9	83.3	80.5	83.1	80.8	83.4	86.0	85.2	90.9	88.7	93.1	85.1	90.9	89.3	88.3	86.5	85.7	91.0	81.2	84.0	95.0	98.6	101.0	108.4	95.2	100.3
Renewable Energy Sources	mill. tce	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.2	-0.4	-0.9	-0.8	-0.8	-0.8	0.2	-0.5	0.8	-0.1	
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	mill. tce	0.1	-0.1	-0.7	0.1	0.3	0.6	-0.6	-0.3	0.1	0.4	0.3	0.1	-1.0	-0.9	-1.0	-2.4	-2.3	-2.8	-1.8	-2.2	-0.8	-2.8	-4.0	-5.9	-6.2	-6.4	-6.0	-4.0	-2.3	-2.3		
Nuclear energy	mill. tce	54.8	54.9	59.1	57.1	56.3	57.4	60.2	63.4	60.2	63.3	63.2	63.7	61.4	62.2	60.7	62.3	52.3	55.4	50.2	40.2	37.0	36.2	34.2	31.5	28.4	28.3	27.9	24.0	25.7			
Total	mill. tce	292.5	313.3	326.8	328.4	331.3	336.5	357.6	361.1	367.1	357.9	357.0	372.8	361.7	363.2	366.6	361.7	373.3	336.9	354.5	331.6	342.5	325.3	321.8	333.7	316.4	317.0	329.3	323.7	315.5	324.4	284.3	295.1
Net import by energy source in %																																	
Hard coal	%	2.1	3.1	3.9	3.7	4.0	4.2	4.8	5.																								

1990 - 2020: final data; 2021: provisional data

Other energy sources: incl. trade balance of district heat

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1.5 Bunkers on sea-going ships

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Bunkers on sea-going ships in PJ																																		
Diesel oil	PJ	23.3	19.3	19.0	21.1	19.7	20.4	27.9	27.4	22.5	20.8	21.5	19.7	20.6	21.5	19.0	18.6	22.4	24.4	20.3	20.7	22.5	21.0	18.6	18.3	20.9	43.4	42.6	9.8	0.0	0.0	0.0		
Fuel oil light	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.1	31.4	30.2	22.8	30.3		
Fuel oil heavy	PJ	80.2	68.0	54.0	70.1	64.4	64.4	56.5	62.7	62.8	66.0	69.6	72.3	77.9	87.0	92.0	85.4	85.3	104.1	103.8	92.6	93.1	92.6	87.6	77.8	73.7	57.9	74.8	58.8	39.6	27.0	32.6	28.4	
Other petroleum products	PJ	1.8	2.0	2.2	2.2	2.3	2.1	1.6	1.5	1.6	1.7	1.6	1.3	1.6	0.5	0.4	0.3	0.2	0.0	0.4	0.7	0.6	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	PJ	105.4	89.4	75.2	93.3	86.4	86.9	86.0	91.6	86.9	88.5	92.7	93.3	100.1	109.1	111.4	104.3	107.9	128.6	124.5	114.1	116.2	113.9	106.3	96.1	94.7	101.3	117.5	95.7	71.0	57.2	55.4	58.7	
Bunkers on sea-going ships in mill. tce																																		
Diesel oil	mill. tce	0.8	0.7	0.6	0.7	0.7	0.7	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.8	0.8	0.7	0.7	0.8	0.7	0.6	0.6	0.7	1.5	1.5	0.3	0.0	0.0	0.0	0.0		
Fuel oil light	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.1	1.0	0.8	1.0		
Fuel oil heavy	mill. tce	2.7	2.3	1.8	2.4	2.2	2.2	1.9	2.1	2.1	2.3	2.4	2.5	2.7	3.0	3.1	2.9	2.9	3.6	3.5	3.2	3.2	3.0	2.7	2.5	2.0	2.6	2.0	1.4	0.9	1.1	1.0		
Other petroleum products	mill. tce	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total	mill. tce	3.6	3.0	2.6	3.2	2.9	3.0	2.9	3.1	3.0	3.0	3.2	3.2	3.4	3.7	3.8	3.6	3.7	4.4	4.2	3.9	4.0	3.9	3.6	3.3	3.2	3.5	4.0	3.3	2.4	2.0	1.9	2.0	
Bunkers on sea-going ships in %																																		
Diesel oil	%	22.1	21.6	25.2	22.6	22.8	23.5	32.5	30.0	25.9	23.5	23.2	21.1	20.6	19.7	17.0	17.9	20.7	19.0	16.3	18.2	19.4	18.5	17.5	19.1	22.1	42.8	36.3	10.3	0.0	0.0	0.0	0.0	
Fuel oil light	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.3	44.2	52.8	41.1	51.6
Fuel oil heavy	%	76.2	76.1	71.8	75.1	74.5	74.1	65.7	68.5	72.3	74.6	75.0	77.5	77.9	79.8	82.6	81.9	79.0	81.0	83.4	81.2	80.1	81.3	82.4	80.9	77.9	57.2	63.7	61.4	55.8	47.2	58.9	48.4	
Other petroleum products	%	1.7	2.3	3.0	2.3	2.7	2.4	1.8	1.6	1.8	1.9	1.8	1.4	1.6	0.5	0.3	0.2	0.0	0.3	0.6	0.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	%	100.0																																
Bunkers on sea-going ships, changes compared to the previous year in %																																		
Diesel oil	%	n/a	-17.3	-1.8	11.2	-6.7	3.8	36.8	-1.8	-17.9	-7.8	3.8	-8.6	4.5	4.6	-11.9	-1.8	20.1	9.2	-16.9	2.2	8.4	-6.4	-11.5	-1.5	14.0	107.6	-1.8	-77.0	-100.0	0.0	0.0	0.0	
Fuel oil light	%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	-3.8	-24.6	33.0		
Fuel oil heavy	%	n/a	-15.2	-20.6	29.6	-8.1	0.0	-12.3	11.1	0.2	5.1	5.4	3.9	7.7	11.7	5.7	-7.2	-0.1	22.0	-0.2	-10.8	0.5	-0.4	-5.5	-11.2	-5.2	-21.5	29.3	-21.5	-32.7	-31.9	21.0	-12.9	
Other petroleum products	%	n/a	13.1	9.6	-1.3	7.1	-11.6	-23.6	-8.3	9.6	7.2	-4.8	-21.7	23.1	-68.4	-24.7	-24.7	-16.1	-80.0	655.3	96.3	-12.5	-65.1	-75.6	1.9	1.9	-42.6	-12.9	-22.2</td					

2.1 Primary energy consumption by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Primary energy consumption by energy source in PJ																																	
Hard coal	PJ	2,306	2,330	2,196	2,139	2,140	2,060	2,090	2,065	2,059	1,967	2,021	1,949	1,927	2,010	1,909	1,808	1,964	2,017	1,800	1,496	1,714	1,715	1,725	1,840	1,759	1,729	1,693	1,502	1,428	1,084	896	1,108
Lignite	PJ	3,201	2,507	2,176	1,983	1,861	1,734	1,688	1,595	1,514	1,473	1,550	1,633	1,663	1,639	1,648	1,596	1,576	1,613	1,554	1,507	1,512	1,564	1,645	1,629	1,574	1,565	1,511	1,507	1,481	1,163	958	1,127
Petroleum	PJ	5,228	5,547	5,628	5,746	5,692	5,689	5,808	5,753	5,775	5,599	5,499	5,577	5,381	5,286	5,214	5,166	5,121	4,626	4,904	4,635	4,684	4,525	4,527	4,628	4,493	4,491	4,566	4,671	4,452	4,511	4,087	4,039
Gases	PJ	2,304	2,422	2,398	2,536	2,580	2,812	3,145	3,005	3,031	3,022	2,996	3,158	3,194	3,209	3,261	3,326	3,201	3,231	3,047	3,181	2,923	2,933	3,074	2,672	2,781	3,068	3,167	3,099	3,222	3,144	3,310	
Natural gas, Petroleum gas	PJ	2,293	2,409	2,382	2,520	2,567	2,799	3,132	2,992	3,019	3,010	2,985	3,148	3,181	3,198	3,250	3,312	3,191	3,222	3,039	3,171	2,911	2,920	3,059	2,660	2,770	3,056	3,159	3,091	3,214	3,136	3,302	
Renewable Energy Sources	PJ	196	197	207	228	253	275	270	344	379	403	417	432	455	561	650	769	939	1,117	1,147	1,201	1,413	1,463	1,385	1,499	1,519	1,644	1,676	1,797	1,802	1,904	1,972	1,949
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	56	51	43	138	165	211	157	159	202	224	243	255	231	208	226	224	236	235	214	218	204	192	
Net import of electricity	PJ	3	-2	-19	3	8	17	-19	-8	-2	4	11	10	2	-29	-26	-31	-71	-69	-81	-52	-64	-23	-83	-116	-122	-174	-182	-189	-175	-118	-68	-67
Nuclear energy	PJ	1,668	1,609	1,733	1,675	1,650	1,682	1,764	1,859	1,764	1,855	1,851	1,868	1,798	1,801	1,822	1,779	1,826	1,533	1,472	1,533	1,178	1,085	1,061	1,060	1,001	923	833	829	819	702	754	
Total	PJ	14,905	14,610	14,319	14,309	14,185	14,269	14,746	14,614	14,521	14,323	14,401	14,679	14,427	14,600	14,591	14,558	14,837	14,197	14,380	13,531	14,217	13,599	13,447	13,822	13,180	13,262	13,491	13,523	13,129	12,805	11,895	12,413
Primary energy consumption by energy source in mill. tce																																	
Hard coal	mill. tce	78.7	79.5	74.9	73.0	70.3	71.3	70.5	70.3	67.1	69.0	66.5	65.7	68.6	65.1	61.7	67.0	68.8	61.4	51.1	58.5	58.5	58.9	62.8	60.0	59.0	57.8	51.3	48.7	37.0	30.6	37.8	
Lignite	mill. tce	109.2	85.5	74.3	67.6	63.5	59.2	57.6	54.4	51.7	50.3	52.9	55.7	56.7	55.9	56.2	54.4	53.8	55.0	53.0	51.4	51.6	53.4	56.1	55.6	53.7	53.4	51.5	51.4	50.5	39.7	32.7	38.5
Petroleum	mill. tce	178.4	189.3	192.0	196.0	194.2	194.1	198.2	196.3	197.1	191.0	187.6	190.3	183.6	180.4	177.9	176.3	174.7	157.8	167.3	158.2	159.8	154.4	154.4	157.9	153.3	153.3	155.8	159.4	151.9	153.9	139.4	137.8
Gases	mill. tce	78.6	82.6	81.8	86.5	88.0	95.9	107.3	102.5	103.4	103.1	102.2	107.8	107.7	109.0	109.5	111.3	113.5	109.2	110.2	104.0	99.7	100.1	104.9	91.2	94.9	104.7	108.0	105.7	109.9	107.3	112.9	
Natural gas, Petroleum gas	mill. tce	78.2	82.2	81.3	86.0	87.6	95.5	106.9	102.1	103.0	102.7	101.9	107.2	108.6	109.1	110.9	113.0	108.9	109.9	103.7	108.2	99.3	99.6	104.4	90.8	94.5	104.3	107.8	105.5	109.7	107.0	112.7	
Renewable Energy Sources	mill. tce	6.7	6.7	7.1	7.8	8.6	9.4	9.2	11.8	12.9	13.8	14.2	14.7	15.5	19.1	22.2	26.3	32.0	38.1	39.1	41.0	48.2	49.9	47.3	51.1	51.8	56.1	57.2	61.3	61.5	65.0	67.3	66.5
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.8	1.5	4.7	5.6	7.2	5.3	5.4	6.9	7.6	8.3	8.7	7.9	7.1	7.7	7.6	8.0	8.0	7.3	7.4	7.0	6.6	
Net import of electricity	mill. tce	0.1	-0.1	-0.7	0.1	0.3	0.6	-0.6	-0.3	-0.1	0.1	0.4	0.3	0.1	-1.0	-0.9	-0.5	-0.2	-2.8	-1.8	-2.2	-0.8	-2.8	-4.0	-5.9	-6.2	-6.4	-6.0	-4.0	-2.3	-2.3		
Nuclear energy	mill. tce	56.9	54.9	59.1	57.1	56.3	57.4	60.2	63.4	60.2	63.3	63.7	61.4	62.2	60.7	62.3	52.3	55.4	50.2	52.3	40.2	37.0	36.2	36.2	34.2	31.5	28.4	28.3	27.9	24.0	25.7		
Total	mill. tce	508.6	498.5	488.6	488.2	484.0	486.9	503.1	498.6	495.4	488.7	491.4	500.8	492.3	498.2	497.9	496.7	506.2	484.4	490.6	461.7	485.1	464.0	458.8	471.6	449.7	4						

2.2 Structure of energy consumption by sector

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Structure of energy consumption by sector in PJ																																	
Indigenous energy production	PJ	6,224	5,359	5,014	4,610	4,370	4,328	4,157	4,089	3,865	3,854	3,793	3,714	3,750	3,955	4,040	4,099	4,103	4,315	4,123	4,036	4,155	4,246	4,124	4,109	4,033	4,076	3,973	4,051	3,890	3,612	3,385	3,548
Primary energy consumption	PJ	14,905	14,610	14,319	14,309	14,185	14,269	14,746	14,614	14,521	14,323	14,401	14,679	14,427	14,600	14,591	14,558	14,837	14,197	14,380	13,531	14,217	13,599	13,447	13,822	13,180	13,262	13,491	13,523	13,129	12,805	11,895	12,413
Transformation input	PJ	12,893	12,001	11,929	11,735	11,729	11,450	11,591	11,326	11,513	11,319	11,617	11,530	11,478	11,875	12,140	12,357	12,512	12,382	12,134	11,241	11,458	11,066	10,858	10,796	10,600	10,666	10,701	10,597	10,202	9,814	9,088	9,420
Transformation output	PJ	9,320	8,517	8,488	8,433	8,428	8,232	8,261	8,046	8,286	8,082	8,307	8,160	8,152	8,533	8,771	8,959	8,986	8,910	8,733	8,098	8,167	8,002	7,885	7,747	7,892	8,027	8,046	7,786	7,680	7,232	7,389	
Cons., losses in energy sector	PJ	902	870	840	886	810	765	776	787	790	751	788	822	829	873	906	919	947	897	809	770	582	626	694	760	638	628	781	774	839	772	708	732
Non-energy consumption	PJ	958	890	911	887	964	963	953	1,012	1,046	1,035	1,068	1,031	1,046	1,025	1,033	1,114	1,068	1,032	1,011	952	1,034	1,027	976	972	990	961	964	989	949	925	932	983
Final energy consumption	PJ	9,472	9,366	9,127	9,234	9,110	9,322	9,686	9,535	9,458	9,300	9,235	9,455	9,226	9,360	9,284	9,127	9,297	8,796	9,159	8,665	9,310	8,881	8,919	9,179	8,699	8,898	9,071	9,208	8,924	8,973	8,400	8,667
Mining, quarrying, manufact.	PJ	2,977	2,694	2,560	2,432	2,463	2,474	2,424	2,440	2,397	2,384	2,421	2,365	2,322	2,545	2,581	2,514	2,525	2,628	2,587	2,291	2,592	2,634	2,587	2,551	2,545	2,548	2,609	2,666	2,601	2,512	2,395	2,518
Transport	PJ	2,379	2,428	2,522	2,596	2,553	2,614	2,625	2,643	2,781	2,751	2,698	2,672	2,601	2,616	2,586	2,614	2,601	2,571	2,541	2,559	2,568	2,559	2,612	2,616	2,621	2,690	2,765	2,704	2,722	2,288	2,352	
Private households	PJ	2,357	2,483	2,401	2,581	2,537	2,655	2,890	2,854	2,782	2,612	2,584	2,822	2,689	2,750	2,634	2,591	2,622	2,259	2,558	2,478	2,676	2,333	2,427	2,556	2,188	2,302	2,376	2,342	2,425	2,402	2,411	
Services	PJ	1,759	1,761	1,644	1,625	1,556	1,579	1,747	1,598	1,588	1,523	1,478	1,571	1,544	1,452	1,437	1,535	1,308	1,443	1,355	1,483	1,346	1,345	1,460	1,350	1,428	1,299	1,315	1,315	1,386			
Structure of energy consumption by sector in mill. tce																																	
Indigenous energy production	mill. tce	212.4	182.8	171.1	157.3	149.1	147.7	141.8	139.5	131.9	131.5	129.4	126.7	128.0	135.0	137.8	139.8	140.0	147.2	140.7	137.7	141.8	144.9	140.7	140.2	137.6	139.1	135.5	138.2	132.7	123.2	115.5	121.0
Primary energy consumption	mill. tce	508.6	498.5	488.6	488.2	484.0	486.9	503.1	498.6	495.4	488.7	491.4	500.8	492.3	498.2	497.9	496.7	506.2	484.4	490.6	461.7	485.1	464.0	458.8	471.6	449.7	452.5	460.3	461.4	448.0	436.9	405.9	423.5
Transformation input	mill. tce	439.9	409.5	407.0	400.4	400.2	390.7	395.5	386.4	392.8	386.2	396.4	393.4	391.7	405.2	414.2	421.6	426.9	422.5	414.0	383.5	391.0	377.6	370.5	368.4	361.7	363.9	365.1	361.6	348.1	334.9	310.1	321.4
Transformation output	mill. tce	318.0	290.6	289.6	287.7	287.6	280.9	281.9	274.5	282.7	275.8	283.4	278.4	278.2	291.1	299.3	305.7	306.6	304.0	298.0	276.3	278.7	273.0	273.0	269.0	264.3	269.3	273.9	274.5	265.6	262.1	246.8	252.1
Cons., losses in energy sector	mill. tce	30.8	29.7	28.7	30.2	27.7	26.1	26.5	26.8	27.0	25.6	26.9	28.1	28.3	29.8	30.9	31.3	32.3	30.6	27.6	26.3	19.9	21.4	23.7	25.9	21.8	21.4	26.6	26.4	28.6	26.3	24.2	25.0
Non-energy consumption	mill. tce	32.7	30.4	31.1	30.3	32.9	32.9	32.5	34.5	35.7	35.3	36.4	35.2	35.7	35.0	35.2	38.0	36.4	35.2	34.5	32.5	35.3	35.1	33.3	33.2	33.8	32.8	32.9	33.8	32.4	31.6	31.8	33.5
Final energy consumption	mill. tce	323.2	319.6	311.4	315.1	310.8	318.1	330.5	325.3	322.7	317.3	315.1	322.6	314.8	319.4	316.8	311.4	317.2	300.1	312.5	295.7	317.7	303.0	304.3	313.2	296.8	303.6	309.5	314.2	304.5	306.2	286.6	295.7
Mining, quarrying, manufact.	mill. tce	101.6	91.9	87.3	83.0	84.1	84.4	82.7	83.3	81.8	81.3	82.6	80.7	79.2	86.																		

3.1 Renewables' primary energy consumption

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021			
Renewables' primary energy consumption in PJ																																				
Hydropower	PJ														64	72	70	72	76	74	69	75	64	78	83	71	68	74	73	65	71	66	71			
Wind energy	PJ	58	53	62	64	67	83	73	77	80	91	127	124	145	67	92	98	111	143	146	139	136	176	182	186	206	285	288	380	396	453	476	413			
Photovoltaics	PJ														1	2	5	8	11	16	24	42	70	95	112	130	139	137	142	165	167	178	178			
Solarthermal energy	PJ														8	9	10	12	13	15	17	19	20	24	26	28	28	28	32	31	32	30				
Geothermal energy	PJ	0	0	0	0	0	7	7	8	8	9	11	13	13	0	0	0	1	1	1	1	1	7	6	8	9	11	11	13	14	16	17				
Ambient heat	PJ														6	5	6	7	8	16	17	19	22	29	31	35	37	41	45	49	53	58	64			
Biomass	PJ														324	365	410	480	584	646	715	887	876	730	812	791	836	851	868	831	866	866	912			
Renewable waste	PJ	139	145	145	164	186	185	189	259	291	304	280	297	297	60	64	88	102	120	102	99	106	110	114	127	131	129	133	138	135	134	134	137			
Liquid Biofuels	PJ														30	41	81	147	161	132	121	127	126	117	121	112	112	113	118	116	147	128				
Total	PJ	196	197	207	228	253	275	270	344	379	403	417	432	455	561	650	769	939	1,117	1,147	1,201	1,413	1,463	1,385	1,499	1,519	1,644	1,676	1,797	1,802	1,904	1,972	1,949			
Renewables' primary energy consumption in mill. tce																																				
Hydropower	mill. tce														2.2	2.4	2.4	2.5	2.6	2.5	2.3	2.6	2.2	2.7	2.8	2.4	2.3	2.5	2.5	2.2	2.4	2.3	2.4			
Wind energy	mill. tce	2.0	1.8	2.1	2.2	2.3	2.8	2.5	2.6	2.7	3.1	4.3	4.2	5.0	2.3	3.1	3.3	3.8	4.9	5.0	4.7	4.6	6.0	6.2	6.4	7.0	9.7	9.8	13.0	13.5	15.5	16.2	14.1			
Photovoltaics	mill. tce														0.0	0.1	0.2	0.3	0.4	0.5	0.8	1.4	2.4	3.2	3.8	4.4	4.8	4.7	4.8	5.6	5.7	6.1	6.1			
Solarthermal energy	mill. tce														0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0			
Geothermal energy	mill. tce	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6				
Ambient heat	mill. tce														0.2	0.2	0.2	0.2	0.3	0.5	0.6	0.7	0.7	1.0	1.1	1.2	1.3	1.4	1.5	1.7	1.8	2.0	2.2			
Biomass	mill. tce														11.1	12.5	14.0	16.4	19.9	22.0	24.4	30.3	29.9	24.9	27.7	27.0	28.5	29.0	29.6	28.3	29.5	31.1				
Renewable waste	mill. tce	4.7	4.9	4.9	5.6	6.4	6.3	6.5	8.8	9.9	10.4	9.6	10.1	10.2	2.1	2.2	3.0	3.5	4.1	3.5	3.4	3.6	3.8	4.3	4.5	4.4	4.6	4.6	4.6	4.7						
Liquid Biofuels	mill. tce														1.0	1.4	2.8	5.0	5.5	4.5	4.1	4.3	4.2	4.3	4.0	4.1	3.8	3.9	4.0	4.0	5.0	4.4				
Total	mill. tce	6.7	6.7	7.1	7.8	8.6	9.4	9.2	11.8	12.9	13.8	14.2	14.7	15.5	19.1	22.2	26.3	32.0	38.1	39.1	41.0	48.2	49.9	47.3	51.1	51.8	56.1	57.2	61.3	61.5	65.0	67.3	66.5			
Renewables' primary energy consumption in %																																				
Hydropower	%														11.4	11.0	9.2	7.7	6.8	6.4	5.7	5.3	4.4	5.7	5.5	4.6	4.2	4.4	4.0	3.6	3.7	3.3	3.6			
Wind energy	%	29.5	26.7	30.1	27.9	26.4	30.3	27.2	22.5	21.1	22.6	30.5	28.7	31.9	12.0	14.1	12.7	11.8	12.8	12.7	11.6	9.6	12.0	13.2	12.4	13.6	17.3	17.2	21.1	22.0	23.8	24.1	21.2			
Photovoltaics	%														0.2	0.3	0.6	0.9	1.0	1.4	2.0	3.0	4.8	6.9	7.4	8.5	8.5	8.2	7.9	9.1	8.8	9.0	9.1			
Solarthermal energy	%														1.4	1.4	1.3	1.3	1.2	1.3	1.4	1.3	1.4	1.7	1.6	1.7	1.7	1.6	1							

4.1 Transformation input for electricity generation by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Transformation input for electricity generation by energy source in PJ																																	
Hard coal	PJ	1,270	1,354	1,285	1,323	1,308	1,332	1,370	1,281	1,365	1,273	1,268	1,231	1,200	1,230	1,182	1,161	1,234	1,259	1,083	942	1,012	961	1,007	1,115	1,041	981	939	755	670	472	353	442
Lignite	PJ	1,796	1,679	1,617	1,532	1,505	1,455	1,433	1,392	1,346	1,335	1,420	1,507	1,537	1,507	1,487	1,458	1,433	1,475	1,416	1,369	1,364	1,410	1,495	1,473	1,432	1,421	1,376	1,357	1,332	1,037	839	995
Petroleum	PJ	121	137	129	102	104	97	90	83	81	83	82	90	85	91	95	103	89	85	83	87	72	61	56	61	61	51	47	46	44	38	37	
Gases	PJ	422	404	358	349	400	418	443	462	477	471	469	477	494	512	524	579	613	633	692	605	675	631	586	532	485	491	617	650	646	687	693	691
Natural gas, Petroleum gas	PJ	332	322	278	277	322	341	367	379	389	391	391	397	406	431	445	497	524	520	594	543	576	538	492	429	389	392	512	545	593	609	589	
Renewable Energy Sources	PJ	122	115	123	125	137	143	138	148	166	175	183	172	193	242	296	353	441	569	625	660	726	832	719	767	817	902	917	1,011	1,022	1,087	1,126	1,056
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	40	36	28	50	48	70	77	87	84	90	97	85	83	81	88	85	89	87	81	81	79	79
Electricity	PJ	18	19	18	18	19	21	21	20	19	19	22	22	23	28	34	34	32	33	29	27	31	28	29	29	27	30	29	29	32	26		
Nuclear energy	PJ	1,663	1,608	1,732	1,674	1,649	1,681	1,763	1,858	1,763	1,855	1,851	1,868	1,798	1,800	1,822	1,779	1,826	1,533	1,472	1,533	1,178	1,085	1,061	1,060	1,001	923	833	829	819	702	754	
Total	PJ	5,413	5,316	5,264	5,123	5,123	5,148	5,258	5,244	5,218	5,211	5,335	5,403	5,357	5,459	5,488	5,537	5,744	5,675	5,635	5,254	5,511	5,186	5,061	5,119	5,012	4,962	4,935	4,769	4,655	4,258	3,862	4,081
Transformation input for electricity generation by energy source in mill. tce																																	
Hard coal	mill. tce	43.3	46.2	43.9	45.1	44.6	45.5	46.7	43.7	46.6	43.4	43.3	42.0	40.9	42.0	40.3	39.6	42.1	43.0	37.0	32.2	34.5	32.8	34.4	38.1	35.5	33.5	32.0	25.8	22.8	16.1	12.0	15.1
Lignite	mill. tce	61.3	57.3	55.2	52.3	51.4	49.6	48.9	47.5	45.9	45.5	48.4	51.4	52.4	51.4	50.7	49.7	48.9	50.3	48.3	46.7	46.5	48.1	51.0	50.2	48.9	48.5	46.9	46.3	45.5	35.4	28.6	34.0
Petroleum	mill. tce	4.1	4.7	4.4	3.5	3.5	3.3	3.1	2.8	2.8	3.1	2.9	3.1	3.3	3.5	3.0	2.9	2.8	3.0	2.5	2.1	1.9	2.1	1.7	1.6	1.6	1.5	1.3	1.3	1.3			
Gases	mill. tce	14.4	13.8	12.2	11.9	13.7	14.3	15.1	15.8	16.3	16.1	16.0	16.3	16.8	17.5	17.9	19.7	20.9	21.6	23.6	20.6	23.0	21.5	20.0	18.2	16.5	16.8	21.1	22.2	22.0	23.4	23.6	23.6
Natural gas, Petroleum gas	mill. tce	11.3	11.0	9.5	9.4	11.0	11.6	12.5	12.9	13.3	13.3	13.6	13.8	14.7	15.2	17.0	17.9	20.3	18.5	19.6	18.4	16.8	14.6	13.3	13.4	17.5	18.6	18.6	20.2	20.8	20.1		
Renewable Energy Sources	mill. tce	4.2	3.9	4.2	4.3	4.7	4.9	4.7	5.0	5.7	6.0	6.3	5.9	6.6	8.3	10.1	12.0	15.0	19.4	21.3	22.5	24.8	28.4	24.5	26.2	27.9	30.8	31.3	34.5	34.9	37.1	38.4	36.0
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.2	1.0	1.7	2.4	2.6	3.0	2.8	3.1	3.3	2.9	2.8	2.8	3.0	2.9	3.0	3.0	2.8	2.7	2.7		
Electricity	mill. tce	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	1.1	1.2	1.1	1.0	0.9	1.1	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.1	0.9			
Nuclear energy	mill. tce	56.8	54.9	59.1	57.1	56.3	57.4	60.2	63.4	60.2	63.3	63.1	61.3	61.4	62.2	60.7	62.3	55.4	50.2	52.3	40.2	37.0	36.2	36.2	34.2	31.5	28.4	28.3	27.9	24.0	25.7		
Total	mill. tce	184.7	181.4	179.6	174.8	175.7	179.4	178.9	178.0	177.8	182.0	184.4	182.8	186.3	187.3	188.9	196.0	193.6	192.3	179.3	188.0	176.9	172.7	174.7	171.0	169.3	168.4	162.7	158.8	145.3	131.8	139.3	
Transformation input for electricity generation by energy source in %																																	
Hard coal	%	23.5	25.5	24.4	25.8	25.5	25.9	26.1	24.4	26.2																							

4.2 Transformation input for district heating by energy source

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Transformation input for district heating by energy source in PJ																																	
Hard coal	PJ	93	110	110	115	115	104	114	100	103	97	96	110	108	162	165	139	126	121	126	124	139	131	136	129	110	114	104	101	100	87	62	71
Lignite	PJ	219	156	129	98	81	64	54	43	41	28	32	29	30	38	60	43	41	41	43	41	39	41	43	38	40	37	33	31	28	26	30	
Petroleum	PJ	42	64	62	55	37	41	38	26	19	17	12	17	16	13	10	9	10	8	9	8	10	7	9	7	6	7	6	5	5	5	7	
Gases	PJ	116	125	119	123	152	168	193	173	178	178	193	203	273	256	272	259	289	244	226	253	227	220	218	190	194	213	218	194	194	190	210	
Natural gas, Petroleum gas	PJ	105	118	114	118	148	165	190	168	173	174	189	198	270	252	272	258	288	243	225	252	224	217	214	186	190	209	216	192	192	189	208	
Renewable Energy Sources	PJ	22	21	21	23	22	10	8	8	13	22	18	14	15	23	42	48	48	54	62	69	72	85	85	90	96	98	99	95	97	98	104	
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	17	15	15	24	27	34	37	36	47	50	62	63	58	62	63	65	57	58	53	59		
Electricity	PJ	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Nuclear energy	PJ	4	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	PJ	496	477	442	415	407	387	409	352	355	344	353	378	388	535	550	540	522	543	523	514	575	539	556	540	494	512	521	522	482	468	435	481
Transformation input for district heating by energy source in mill. tce																																	
Hard coal	mill. tce	3.2	3.8	3.8	3.9	3.5	3.9	3.4	3.5	3.3	3.3	3.7	3.7	5.5	5.6	4.7	4.3	4.1	4.3	4.2	4.8	4.5	4.7	4.4	3.8	3.9	3.6	3.4	3.4	3.0	2.1	2.4	
Lignite	mill. tce	7.5	5.3	4.4	3.4	2.8	2.2	1.8	1.5	1.4	1.0	1.1	1.0	1.3	2.1	1.5	1.4	1.4	1.5	1.5	1.4	1.3	1.4	1.5	1.3	1.4	1.3	1.1	1.1	0.9	0.9	1.0	
Petroleum	mill. tce	1.4	2.2	2.1	1.9	1.3	1.4	1.3	0.9	0.6	0.6	0.4	0.6	0.5	0.5	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Gases	mill. tce	4.0	4.3	4.1	4.2	5.2	5.7	6.6	5.9	6.1	6.1	6.6	6.9	9.3	8.7	9.3	8.8	9.9	8.3	7.7	8.6	7.7	7.5	7.4	6.5	6.6	7.3	7.4	6.6	6.6	6.5	7.2	
Natural gas, Petroleum gas	mill. tce	3.6	4.0	3.9	4.0	5.0	5.6	6.5	5.7	5.9	5.9	6.4	6.8	9.2	8.6	9.3	8.8	9.8	8.3	7.7	8.6	7.6	7.4	7.3	6.4	6.5	7.1	7.4	6.6	6.6	6.4	7.1	
Renewable Energy Sources	mill. tce	0.7	0.7	0.7	0.8	0.8	0.3	0.3	0.3	0.4	0.8	0.6	0.5	0.5	0.8	1.1	1.4	1.6	1.6	1.9	2.1	2.4	2.5	2.9	3.1	3.3	3.4	3.2	3.3	3.6			
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.5	0.8	0.9	1.2	1.3	1.2	1.6	1.7	2.1	2.2	2.0	2.1	2.2	1.9	2.0	1.8	2.0			
Electricity	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Nuclear energy	mill. tce	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Total	mill. tce	16.9	16.3	15.1	14.2	13.9	13.2	13.9	12.0	12.1	11.7	12.0	12.9	13.2	18.3	18.8	18.4	17.8	18.5	17.8	17.5	19.6	18.4	19.0	18.4	16.9	17.5	17.8	17.8	16.4	16.4		
Transformation input for district heating by energy source in %																																	
Hard coal	%	18.7	23.1	24.9	27.8	28.1	26.8	28.0	28.6	29.0	28.3	27.1	29.0	28.0	30.3	30.1	25.8	24.2	22.3	24.1	24.2	24.3	24.5	23.9	22.3	22.2	20.0	19.2	20.7	18.5	14.3	14.7	
Lignite	%	44.1	32.8	29.1	23.7	19.9	16.7	13.1	12.2	11.6	8.1	9.0	7.7	7.8	7.2	11.0	8.0	7.9	7.6	8.1	8.4	7.2	7.3	7.4	8.0	7.8	7.8	7.1	6.4	6.5	5.9	6.0	6.3
Petroleum	%	8.5	13.4	14.1	13.3	9.1	10.5	9.2	7.5	5.3	4.9	3.5	4.5	4.1	2.5	1.9	1.7	2.0	1.5	1.7	1.6	1.7	1.4	1.7	1.4	1.2	1.						

5.1 CHP plants: generation and energy input

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
in TWh																																		
Total gross elec. generation (EB)	TWh	549.9	539.4	537.1	525.7	526.8	537.9	553.0	552.7	556.7	555.6	575.1	584.1	584.0	607.4	615.3	620.6	636.9	637.2	637.3	593.2	628.1	608.9	629.8	638.7	627.8	646.9	650.6	653.7	643.5	609.3	574.6	588.8	
Power plant own use (EB)	TWh	41.4	39.1	38.7	38.1	38.2	38.4	39.1	38.8	38.8	38.1	38.0	38.4	36.6	38.8	38.5	39.0	39.6	38.7	38.3	35.6	36.7	34.8	37.1	36.9	35.8	36.8	36.3	34.7	34.0	30.1	27.9	29.8	
Total net electr. generation (EB)	TWh	508.4	500.3	498.4	487.7	488.6	499.5	513.9	513.9	518.0	517.5	537.1	545.7	547.4	568.6	576.7	581.6	597.4	598.5	598.9	557.6	591.4	574.0	592.8	601.8	592.0	610.1	614.3	619.1	609.5	579.2	546.7	559.1	
CHP net electr. generation	TWh	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a																
CHP net heat generation	TWh	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a																
Total CHP net generation	TWh	n/a	260.6	266.3	273.2	279.7	280.3	287.9	287.7	312.2	300.8	309.9	314.8	308.4	322.7	340.6	350.0	342.1	337.9	330.3	344.5													
in PJ																																		
Transformation input electr. (EB)	PJ	5,413	5,316	5,264	5,123	5,123	5,148	5,258	5,244	5,218	5,211	5,335	5,403	5,357	5,459	5,488	5,537	5,744	5,675	5,635	5,254	5,511	5,186	5,061	5,119	5,012	4,962	4,935	4,769	4,655	4,258	3,862	4,081	
Transformation input CHP electr.	PJ	n/a	553	571	582	602	604	633	642	695	681	698	706	701	738	804	855	749	742	734	764													
Transformation input CHP heat	PJ	n/a	669	688	693	698	691	718	720	775	739	768	744	769	799	807	791	782	761	791														
Total transformation input CHP	PJ	n/a	1,221	1,259	1,275	1,299	1,295	1,352	1,362	1,469	1,420	1,453	1,473	1,445	1,507	1,603	1,662	1,539	1,524	1,495	1,555													
Efficiency in %																																		
Gross electricity generation (EB)	%	36.6	36.5	36.7	36.9	37.0	37.6	37.9	37.9	38.4	38.4	38.8	38.9	39.2	40.1	40.4	40.3	39.9	40.4	40.7	40.6	41.0	42.3	44.8	44.9	45.1	46.9	47.5	49.4	49.8	51.5	53.6	51.9	
Total CHP net generation	%	n/a	76.8	76.1	77.1	77.5	77.9	76.7	76.0	76.5	76.2	76.8	76.9	77.1	76.5	75.8	80.0	79.9	79.5	79.8														
CHP-share net electr. generation	%	n/a	13.7	13.8	14.3	14.6	14.7	15.2	16.5	16.9	17.1	17.1	17.3	17.7	19.2	20.2	18.8	19.6	20.6	20.9														

1990 - 2020: final data; 2021: provisional data

5.2 Combined heat and power - Total

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Combined heat and power - Total - Net electricity generation in TWh																																	
Hard coal	TWh	n/a	19.8	18.9	15.7	14.2	12.8	13.1	13.3	15.3	13.9	13.6	14.5	12.6	11.9	11.7	14.4	11.3	9.7	8.8	9.6												
Lignite	TWh	n/a	4.8	5.1	5.1	5.1	5.1	5.1	5.0	5.4	5.4	5.7	6.0	5.2	5.3	5.3	5.0	4.7	4.2	3.4	3.9												
Petroleum	TWh	n/a	4.3	3.8	3.8	3.5	3.5	2.9	2.6	2.5	2.1	2.4	2.3	2.1	2.2	2.2	2.1	2.0	1.9	1.9	1.8												
Gases	TWh	n/a	42.3	44.3	48.8	52.0	51.4	53.7	51.1	54.5	53.2	52.5	51.0	50.1	54.1	62.8	66.4	60.5	61.9	62.3	65.6												
Renewable Energy Sources	TWh	n/a	4.2	5.2	6.8	9.4	12.4	13.7	17.2	19.3	20.6	23.8	25.9	28.7	31.1	32.2	33.2	32.4	32.6	33.1	32.4												
Other energy sources	TWh	n/a	2.4	2.5	3.0	3.0	2.8	2.7	3.1	2.9	3.2	3.1	3.6	3.4	3.6	3.9	3.6	3.2	3.1	3.3													
Total	TWh	n/a	77.7	79.8	83.2	87.2	88.0	91.2	91.8	100.1	98.2	101.2	102.8	102.3	108.0	117.9	125.1	114.5	113.5	112.5	116.6												
Combined heat and power - Total - Net heat generation in TWh																																	
Hard coal	TWh	n/a	44.7	43.4	40.3	38.2	35.0	36.1	34.4	37.4	33.5	33.1	35.7	30.9	32.2	31.4	30.0	31.7	27.7	23.2	25.6												
Lignite	TWh	n/a	16.0	15.8	16.4	16.7	16.2	16.6	16.3	17.4	17.7	18.4	18.9	17.5	18.0	18.0	16.6	15.5	13.7	12.5	13.0												
Petroleum	TWh	n/a	13.7	13.1	12.4	12.9	12.0	10.4	10.3	10.4	8.8	11.5	10.8	9.5	9.9	9.8	9.9	10.2	10.2	9.7	9.7												
Gases	TWh	n/a	86.1	88.9	92.0	92.0	92.1	93.2	90.1	95.7	91.4	89.2	87.6	90.2	99.4	102.5	101.7	104.1	104.6	109.2													
Renewable Energy Sources	TWh	n/a	12.2	15.3	19.0	22.3	26.2	29.4	33.3	38.3	38.8	41.9	44.9	46.6	49.2	48.9	50.8	52.5	53.0	52.8	53.4												
Other energy sources	TWh	n/a	10.2	10.0	9.9	10.5	10.8	11.0	11.5	12.8	12.5	14.0	15.1	15.2	16.0	15.7	15.0	16.9															
Total	TWh	n/a	182.9	186.5	190.0	192.6	192.3	196.7	195.8	212.1	202.7	208.6	212.1	206.1	214.7	222.7	225.0	227.6	224.4	217.8	227.9												
Combined heat and power - Total - Transformation input in PJ																																	
Hard coal	PJ	n/a	321	305	263	238	211	225	222	241	218	216	231	199	199	195	215	193	167	145	159												
Lignite	PJ	n/a	95	99	101	100	97	100	97	106	107	112	116	104	106	106	98	92	83	73	77												
Petroleum	PJ	n/a	80	75	73	74	67	64	63	61	55	62	56	51	50	52	51	51	50	49													
Gases	PJ	n/a	577	609	629	643	635	653	635	669	648	637	619	610	645	727	756	693	715	718	755												
Renewable Energy Sources	PJ	n/a	88	115	142	178	209	237	266	301	308	336	361	381	405	413	428	416	416	424													
Other energy sources	PJ	n/a	60	57	67	67	75	73	79	90	85	91	90	100	101	109	114	95	90	85	95												
Total	PJ	n/a	1,221	1,259	1,275	1,299	1,295	1,352	1,362	1,469	1,420	1,453	1,473	1,445	1,507	1,603	1,662	1,539	1,524	1,495	1,555												
for CHP electricity generation	PJ	n/a	553	571	582	602	604	633	642	695	681	698	706	701	738	804	855	749	742	734	764												
Combined heat and power - Total - Efficiency in %																																	

5.3 Combined heat and power - Main activity producers

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Combined heat and power - Main activity producers - Net electricity generation in TWh																																	
Hard coal	TWh	n/a	17.2	16.9	13.9	12.4	11.1	11.2	11.6	13.5	12.2	12.8	13.7	11.8	11.2	10.4	13.0	10.1	8.7	7.2	8.0												
Lignite	TWh	n/a	3.6	3.8	3.9	3.7	3.7	3.8	3.8	4.1	4.0	4.2	4.5	3.8	4.0	4.0	3.7	3.4	3.0	2.4	2.9												
Petroleum	TWh	n/a	0.4	0.4	0.5	0.3	0.2	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1												
Gases	TWh	n/a	27.4	29.2	31.8	34.9	34.0	35.3	31.2	31.5	30.1	28.9	25.9	22.6	22.6	29.2	30.6	27.6	28.5	28.9	30.6												
Renewable Energy Sources	TWh	n/a	0.8	1.0	1.2	1.4	1.6	2.0	2.3	2.6	3.0	3.7	4.3	4.9	5.1	5.5	7.1	7.1	7.5	7.9													
Other energy sources	TWh	n/a	1.0	1.0	1.2	1.3	1.4	1.4	1.5	1.7	1.9	2.0	1.9	2.3	2.2	2.7	2.3	2.2	1.9	2.0													
Total	TWh	n/a	50.3	52.3	52.3	54.0	51.9	53.8	50.5	53.4	51.1	49.7	44.9	44.9	51.2	55.5	50.7	49.5	47.9	51.5													
Combined heat and power - Main activity producers - Net heat generation in TWh																																	
Hard coal	TWh	n/a	34.7	36.5	33.0	31.1	28.5	29.8	28.7	31.1	27.6	29.0	31.9	27.2	28.2	26.1	24.6	26.5	23.2	17.1	19.1												
Lignite	TWh	n/a	9.8	9.8	10.2	10.1	9.6	10.0	10.1	10.3	10.1	10.4	11.2	9.8	10.5	10.1	9.0	7.9	7.1	6.6	7.7												
Petroleum	TWh	n/a	1.2	1.0	0.8	0.6	0.4	0.3	0.5	0.5	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3												
Gases	TWh	n/a	41.6	45.7	47.5	50.1	48.2	47.7	43.7	44.9	40.4	40.6	36.5	32.4	32.5	38.1	40.2	38.5	40.2	40.2	42.4												
Renewable Energy Sources	TWh	n/a	2.7	3.3	4.1	4.6	5.2	6.1	6.7	7.3	7.8	8.4	9.9	10.8	11.6	11.8	12.2	16.2	16.7	17.1	18.4												
Other energy sources	TWh	n/a	3.8	3.9	4.5	4.8	4.8	5.8	6.8	6.8	7.1	7.0	8.0	7.9	8.2	8.4	9.4	10.2	9.0	10.0													
Total	TWh	n/a	93.9	100.1	100.1	101.4	96.7	98.7	95.4	100.9	93.1	95.9	96.9	88.5	91.0	94.5	94.5	98.8	97.5	90.2	98.0												
Combined heat and power - Main activity producers - Transformation input in PJ																																	
Hard coal	PJ	n/a	265	266	221	197	174	186	186	202	183	193	210	179	177	163	183	163	141	110	122												
Lignite	PJ	n/a	63	66	66	65	63	65	64	68	66	69	73	63	66	64	57	52	46	41	48												
Petroleum	PJ	n/a	7	7	6	4	3	4	4	4	3	2	2	2	2	2	1	1	1	2													
Gases	PJ	n/a	316	337	351	367	357	366	335	342	323	313	279	246	245	303	315	286	299	297	313												
Renewable Energy Sources	PJ	n/a	22	26	37	41	45	54	58	64	67	73	87	96	102	109	114	122	121	126	132												
Other energy sources	PJ	n/a	24	24	35	36	38	40	47	56	56	59	60	68	66	73	77	65	64	58	64												
Total	PJ	n/a	697	726	715	711	680	713	693	735	700	710	711	653	658	715	748	690	672	633	682												
for CHP electricity generation	PJ	n/a	356	367	358	359	345	363	348	369	358	358	351	320	318	360	392	340	328	315	338												
Combined heat and power - Main activity producers - Efficiency in %																																	
Hard coal	%	n/a	70.4	72.4	76.5	79.5	82.0	79.2	77.8	79.2	77.9	78.1	78.6	80.0	80.5	74.0	81.0	81.6	79.3	79.7													
Lignite	%	n/a	76.7	74.1	76.1	76.8	76.2	76.7	77.6	76.3	76.7	76.0	77.7	77.8	78.7	78.8	79.2	78.2	78.5	79.2	79.4												
Petroleum	%	n/a	82.6	71.0	80.7	78.0	69.2	68.5	66.6	67.3	60.1	71.9	70.6	68.0	63.1	63																	

1990 - 2020: final data; 2021: provisional data

Source: EEFA according to DESTATIS

5.4 Combined heat and power - Autoproducers

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Combined heat and power - Autoproducers - Net electricity generation in TWh																																	
Hard coal	TWh	n/a	2.6	1.9	1.9	1.9	1.7	1.8	1.7	1.9	1.7	0.8	0.8	0.8	0.7	1.3	1.4	1.2	1.0	1.6	1.7												
Lignite	TWh	n/a	1.2	1.3	1.2	1.4	1.4	1.3	1.2	1.4	1.5	1.4	1.3	1.3	1.3	1.3	1.2	1.0	1.0	0.9													
Petroleum	TWh	n/a	3.6	3.1	3.0	3.0	3.1	2.6	2.2	2.1	1.6	2.1	2.1	1.9	2.0	2.0	1.9	1.8	1.8	1.7													
Gases	TWh	n/a	13.6	13.8	15.7	15.6	15.8	16.7	17.8	20.5	19.9	19.7	20.4	21.3	24.6	26.0	27.8	24.6	24.7	24.7	25.9												
Renewable Energy Sources	TWh	n/a	1.1	1.4	2.1	2.3	2.3	2.0	2.5	2.7	2.7	2.9	3.0	3.1	3.3	3.4	3.4	3.0	3.3	3.4	3.2												
Other energy sources	TWh	n/a	1.4	1.4	1.7	1.6	1.4	1.3	1.1	1.3	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.0	1.2	1.3													
Total	TWh	n/a	23.5	22.9	25.6	25.8	25.8	25.7	26.6	29.8	28.4	28.3	28.9	29.7	33.1	35.3	37.1	33.2	33.0	33.7	34.7												
Combined heat and power - Autoproducers - Net heat generation in TWh																																	
Hard coal	TWh	n/a	10.1	6.9	7.3	7.1	6.4	6.4	5.7	6.3	5.9	4.1	3.7	3.7	4.0	5.3	5.5	5.2	4.5	6.2	6.4												
Lignite	TWh	n/a	6.1	6.1	6.2	6.6	6.6	6.2	7.2	7.6	8.0	7.7	7.7	7.5	8.0	7.7	7.5	6.7	5.9	5.3													
Petroleum	TWh	n/a	11.9	11.6	11.1	11.9	11.3	9.7	9.4	9.5	8.2	10.8	10.2	9.0	9.5	9.3	9.5	9.8	9.9	9.5	9.3												
Gases	TWh	n/a	42.6	41.2	42.5	39.8	41.6	42.7	43.3	47.1	46.2	44.6	45.4	45.9	47.3	49.9	50.3	50.8	51.1	52.9													
Renewable Energy Sources	TWh	n/a	5.0	5.8	7.6	7.5	8.2	8.1	9.0	10.9	10.9	11.0	12.1	11.5	11.6	11.5	12.3	11.3	11.2	11.0	10.8												
Other energy sources	TWh	n/a	6.3	5.9	5.2	5.4	5.8	6.0	5.6	5.6	5.7	5.6	6.0	7.2	6.9	6.6	5.5	6.0	6.9														
Total	TWh	n/a	82.0	77.5	80.0	78.3	79.8	79.5	79.3	86.9	84.4	84.1	84.8	83.8	87.2	90.9	92.0	91.3	88.7	89.6	91.7												
Combined heat and power - Autoproducers - Transformation input in PJ																																	
Hard coal	PJ	n/a	56	40	42	41	37	39	36	39	34	23	21	21	22	32	32	30	26	35	36												
Lignite	PJ	n/a	32	33	35	35	34	35	33	38	41	42	43	40	40	42	40	39	36	32	29												
Petroleum	PJ	n/a	69	65	64	67	62	59	57	55	50	57	52	47	47	48	48	49	51	48	47												
Gases	PJ	n/a	248	256	264	261	267	278	300	291	283	289	297	327	343	356	319	324	329	344													
Renewable Energy Sources	PJ	n/a	28	37	48	52	54	54	57	67	69	74	71	73	73	76	66	68	70	68													
Other energy sources	PJ	n/a	35	31	30	28	35	32	31	29	32	30	32	35	37	37	29	26	27	31													
Total	PJ	n/a	469	462	484	484	487	492	492	512	506	510	509	544	574	590	533	531	540	554													
for CHP electricity generation	PJ	n/a	168	169	186	189	187	188	194	212	201	199	202	207	232	249	261	220	222	228	235												
Combined heat and power - Autoproducers - Efficiency in %																																	
Hard coal	%	n/a	n/a	n/a	n/a</td																												

5.5 Combined heat and power - Other producers

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Combined heat and power - Other producers - Net electricity generation in TWh																																	
Hard coal	TWh	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0														
Lignite	TWh	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0														
Petroleum	TWh	n/a	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0														
Gases	TWh	n/a	1.3	1.3	1.4	1.5	1.6	1.8	2.0	2.5	3.1	3.8	4.7	6.3	7.0	7.6	8.0	8.7	9.1														
Renewable Energy Sources	TWh	n/a	2.3	2.9	3.6	5.6	8.5	9.7	12.5	14.1	15.3	17.9	19.2	21.2	22.9	23.7	24.3	22.3	22.2	21.1													
Other energy sources	TWh	n/a	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0														
Total	TWh	n/a	3.9	4.6	5.3	7.4	10.4	11.8	14.8	16.9	18.6	21.9	24.1	27.6	30.0	31.4	32.4	30.6	31.0	30.9	30.4												
Combined heat and power - Other producers - Net heat generation in TWh																																	
Hard coal	TWh	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
Lignite	TWh	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
Petroleum	TWh	n/a	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1													
Gases	TWh	n/a	1.9	2.0	2.0	2.1	2.4	2.7	3.1	3.8	4.8	5.9	7.3	9.3	10.4	11.4	12.0	12.4	13.1	13.3													
Renewable Energy Sources	TWh	n/a	4.5	6.3	7.2	10.1	12.8	15.2	17.6	20.1	22.4	22.9	24.3	26.0	25.6	26.3	25.0	24.7	24.2	24.7													
Other energy sources	TWh	n/a	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0														
Total	TWh	n/a	7.0	8.8	9.8	12.8	15.8	18.4	21.2	24.4	25.2	28.5	30.4	33.8	36.6	37.2	38.4	37.5	38.2	38.1	38.2												
Combined heat and power - Other producers - Transformation input in PJ																																	
Hard coal	PJ	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0													
Lignite	PJ	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0													
Petroleum	PJ	n/a	3	3	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1													
Gases	PJ	n/a	13	15	14	15	17	19	22	27	34	41	51	66	74	81	85	88	93	93													
Renewable Energy Sources	PJ	n/a	39	52	57	85	110	129	151	170	173	194	200	215	230	232	238	227	227	227													
Other energy sources	PJ	n/a	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0														
Total	PJ	n/a	56	72	76	104	131	152	177	201	237	253	283	305	314	325	316	321	321	318													
for CHP electricity generation	PJ	n/a	28	35	38	54	72	82	100	114	122	141	153	174	188	195	202	189	191	190													
Combined heat and power - Other producers - Efficiency in %																																	
Hard coal	%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
Lignite	%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
Petroleum	%	n/a	85.1	85.0	85.0	85.1	85.0	84.9	85.2	84.9	84.8	85.0	84.8	85.1	84.9	85.0	85.2	84.9	85.0	85.1													
Gases	%	n/a	87.8	77.0	85.9	85.8	84.7	84.3	84.2	84.5	84.6	84.7	84.3	84.5	84.4	84.3	84.5	84.4	84.3	84.5													
Renewable Energy Sources	%	n/a	63.4	63.1	67.9	66.7	69.8	69.6	71.8</td																								

1990 - 2020: final data; 2021: provisional data

Other producers: plant-capacity below 1 MWel

Source: EEFA according to DESTATIS, AGEE-Stat, Öko-Institut

6.1 Total final energy consumption by energy source

1990 - 2020: final data; 2021: provisional data

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6.2 Final energy consumption by energy source: Mining and quarrying, manufacturing industry

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption by energy source: Mining and quarrying, manufacturing industry in PJ																																	
Hard coal	PJ	501	450	419	367	392	398	396	410	358	359	391	366	356	357	329	296	329	336	318	259	334	334	326	329	336	363	368	358	353	336	238	336
Lignite	PJ	368	196	131	110	98	81	73	67	63	59	54	49	49	53	63	59	59	63	66	58	64	73	72	71	69	73	74	72	67	78	76	
Petroleum	PJ	351	387	390	371	360	346	335	316	300	269	235	235	224	207	188	174	175	164	155	142	134	117	102	96	73	66	72	109	84	85	102	91
Gases	PJ	893	873	864	851	867	882	866	875	883	901	936	906	883	913	933	853	880	907	917	787	902	905	896	902	881	886	909	940	899	873	886	899
Natural gas, Petroleum gas	PJ	714	709	723	721	734	747	740	739	752	779	812	794	809	821	742	764	811	813	704	797	794	792	800	780	779	812	846	791	773	793	813	
Renewable Energy Sources	PJ	15	5	6	14	12	10	10	10	14	14	15	15	15	15	77	88	87	126	99	98	140	119	83	92	114	110	116	115	113	113	112	122
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	77	107	33	31	65	76	74	99	82	63	73	70	76	76	76	72	54
Electricity	PJ	748	698	682	649	666	686	677	701	716	723	748	750	751	789	810	823	825	850	837	719	799	818	814	807	824	810	816	821	814	786	744	766
District heat	PJ	101	85	69	68	70	70	68	62	62	58	43	43	107	105	114	138	151	130	152	146	169	212	190	174	173	179	172	191	175	163	173	
Total	PJ	2,977	2,694	2,560	2,432	2,463	2,474	2,424	2,440	2,397	2,384	2,421	2,365	2,322	2,545	2,581	2,514	2,525	2,628	2,587	2,291	2,592	2,634	2,587	2,551	2,545	2,548	2,609	2,666	2,601	2,512	2,395	2,518
Final energy consumption by energy source: Mining and quarrying, manufacturing industry in mill. tce																																	
Hard coal	mill. tce	17.1	15.3	14.3	12.5	13.4	13.6	13.5	14.0	12.2	12.2	13.3	12.5	12.2	12.2	11.2	10.1	11.2	11.5	10.9	8.9	11.4	11.4	11.2	11.5	12.4	12.6	12.2	12.0	11.5	8.1	11.5	
Lignite	mill. tce	12.6	6.7	4.5	3.8	3.3	2.8	2.5	2.3	2.1	2.0	1.9	1.7	1.7	1.8	2.2	2.0	2.0	2.1	2.2	2.0	2.2	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.4	2.3	2.7	2.6
Petroleum	mill. tce	12.0	13.2	13.3	12.7	12.3	11.8	11.4	10.8	10.2	9.2	8.0	8.0	7.7	7.0	6.4	5.9	6.0	5.6	5.3	4.9	4.6	4.0	3.5	3.3	2.5	2.3	2.4	3.7	2.9	2.9	3.5	3.1
Gases	mill. tce	30.5	29.8	29.5	29.0	29.6	30.1	29.5	29.9	30.1	30.8	31.9	30.9	30.1	31.1	31.8	29.1	30.0	31.0	31.3	26.8	30.8	30.9	30.6	30.8	30.1	30.2	31.0	32.1	30.7	29.8	30.2	30.7
Natural gas, Petroleum gas	mill. tce	24.4	24.2	24.7	24.6	25.1	25.5	25.2	25.2	25.7	26.6	27.7	27.1	26.7	27.6	28.0	25.3	26.1	27.7	27.7	24.0	27.2	27.1	27.0	27.3	26.6	26.7	27.7	28.9	27.0	26.4	27.1	27.7
Renewable Energy Sources	mill. tce	0.5	0.2	0.2	0.5	0.4	0.4	0.3	0.3	0.5	0.5	0.5	0.5	0.5	1.9	2.6	3.0	3.0	4.3	3.4	3.3	4.8	4.1	2.8	3.1	3.9	3.7	4.0	3.9	3.8	4.2		
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.6	3.7	1.1	1.1	2.2	2.6	3.4	2.8	2.1	2.5	2.4	2.6	2.6	2.4	1.9		
Electricity	mill. tce	25.5	23.8	23.3	22.2	22.7	23.4	23.1	23.9	24.4	24.7	25.5	25.6	25.6	26.9	27.6	28.1	28.1	29.0	28.6	24.5	27.3	27.9	27.8	28.1	27.6	27.8	28.0	27.8	26.8	25.4	26.1	
District heat	mill. tce	3.4	2.9	2.4	2.3	2.4	2.4	2.3	2.1	2.1	2.0	1.5	1.5	3.7	3.6	3.9	4.7	5.2	5.0	5.8	7.2	6.5	5.9	6.1	5.9	6.5	6.0	5.6	5.9	6.9			
Total	mill. tce	101.6	91.9	87.3	83.0	84.1	84.4	82.7	83.3	81.8	81.3	82.6	80.7	79.2	86.8	88.1	85.8	86.2	89.7	88.3	78.2	88.4	89.9	88.3	87.0	86.8	86.9	89.0	91.0	88.7	81.7	85.9	
Final energy consumption by energy source: Mining and quarrying, manufacturing industry in %																																	
Hard coal	%	16.8	16.7	16.4	15.1	15.9	16.1	16.3	16.8	15.0	15.1	16.1	15.5	15.3	14.0	12.7	11.8	13.0	12.8	12.3	11.3	12.9	12.7	12.6	12.9	13.2	14.3	14.1	13.4	13			

6.3 Final energy consumption by energy source: private households

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption by energy source: private households in PJ																																	
Hard coal	PJ	38	47	39	38	37	38	36	32	24	25	28	29	29	18	14	15	20	26	25	17	31	39	12	8	10	15	8	7	6	2	2	2
Lignite	PJ	351	209	139	123	103	66	70	37	29	26	20	22	16	19	17	17	20	13	20	21	23	19	20	14	14	14	14	12	11	12		
Petroleum	PJ	740	872	857	948	915	944	1,002	1,059	986	835	816	933	823	813	720	715	757	467	677	583	589	497	535	582	494	486	479	474	426	496	508	332
Gases	PJ	607	710	722	816	815	883	1,040	957	968	952	948	1,025	1,003	1,043	1,017	985	960	894	940	928	1,017	845	917	966	781	861	911	890	920	925	896	1,014
Natural gas, Petroleum gas	PJ	564	674	696	801	814	880	1,039	957	968	952	948	1,025	1,003	1,043	1,017	985	960	894	940	928	1,017	845	917	966	781	861	911	890	920	925	896	1,014
Renewable Energy Sources	PJ	39	39	38	39	54	96	96	159	165	170	171	196	192	200	196	196	205	199	229	251	317	277	281	305	269	292	318	311	318	347	341	384
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Electricity	PJ	422	440	442	453	448	458	483	471	470	473	470	484	491	501	505	509	509	502	501	510	492	493	490	467	463	462	462	456	453	461	457	
District heat	PJ	160	166	164	164	165	171	163	140	141	131	131	132	135	156	154	151	155	164	176	189	164	171	184	153	170	185	186	179	190	183	210	
Total	PJ	2,357	2,483	2,401	2,581	2,537	2,655	2,890	2,854	2,782	2,612	2,584	2,822	2,689	2,750	2,634	2,591	2,622	2,259	2,558	2,478	2,676	2,333	2,427	2,556	2,188	2,302	2,376	2,342	2,320	2,425	2,402	2,411
Final energy consumption by energy source: private households in mill. tce																																	
Hard coal	mill. tce	1.3	1.6	1.3	1.3	1.3	1.2	1.1	0.8	0.9	1.0	1.0	1.0	0.6	0.5	0.5	0.7	0.9	0.9	0.6	1.1	1.3	0.4	0.3	0.3	0.5	0.3	0.2	0.2	0.1	0.1	0.1	
Lignite	mill. tce	12.0	7.1	4.7	4.2	3.5	2.2	2.4	1.2	1.0	0.9	0.7	0.8	0.6	0.7	0.6	0.6	0.7	0.5	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.4	0.4	0.4			
Petroleum	mill. tce	25.2	29.8	29.2	32.3	31.2	32.2	34.2	36.1	33.6	28.5	27.8	31.8	28.1	27.7	24.6	24.4	25.8	15.9	23.1	19.9	20.1	17.0	18.3	19.9	16.9	16.6	16.3	16.2	14.5	16.9	17.3	11.3
Gases	mill. tce	20.7	24.2	24.6	27.8	27.8	30.1	35.5	32.7	33.0	32.5	32.3	35.0	34.2	35.6	34.7	33.6	32.7	30.5	32.1	31.7	34.7	28.8	31.3	33.0	26.6	29.4	31.1	30.4	31.4	31.6	30.6	34.6
Natural gas, Petroleum gas	mill. tce	19.2	23.0	23.7	27.3	27.8	30.0	35.5	32.7	33.0	32.5	32.3	35.0	34.2	35.6	34.7	33.6	32.7	30.5	32.1	31.7	34.7	28.8	31.3	33.0	26.6	29.4	31.1	30.4	31.4	31.6	30.6	34.6
Renewable Energy Sources	mill. tce	1.3	1.3	1.3	1.8	3.3	3.3	5.4	5.6	5.8	6.7	6.5	6.8	6.7	7.0	6.8	8.5	10.8	9.5	9.6	10.4	9.2	10.0	10.8	11.8	11.6	13.1						
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Electricity	mill. tce	14.4	15.0	15.1	15.5	15.3	15.6	16.5	16.1	16.0	16.1	16.0	16.5	16.8	17.1	17.2	17.4	17.4	17.2	17.1	17.4	16.8	16.8	16.7	15.9	15.8	15.7	15.7	15.6	15.4	15.7	15.6	
District heat	mill. tce	5.5	5.7	5.6	5.6	5.6	5.8	4.8	4.8	4.5	4.5	4.6	5.3	5.6	5.2	5.2	5.3	5.6	6.0	6.5	5.6	6.3	5.2	5.8	6.3	6.1	6.5	6.2	7.2				
Total	mill. tce	80.4	84.7	81.9	88.1	86.6	90.6	98.6	97.4	94.9	89.1	88.2	96.3	91.7	93.8	89.9	88.4	89.5	77.1	87.3	84.5	91.3	79.6	82.8	87.2	74.7	78.5	81.1	79.9	79.2	82.7	82.0	82.3
Final energy consumption by energy source: private households in %																																	
Hard coal	%	1.6	1.9	1.6	1.5	1.5	1.4	1.2	1.1	0.9	1.0	1.1	1.0	1.1	0.6	0.5	0.6	0.8	1.2	1.0	0.7	1.2	1.7	0.5	0.3	0.4	0.6	0.3	0.3	0.3	0.1	0.1	0.1
Lignite	%	14.9	8																														

6.4 Final energy consumption by energy source: trade, commerce and services (TCS)

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption by energy source: trade, commerce and services (TCS) in PJ																																	
Hard coal	PJ	32	34	25	23	17	18	15	18	8	9	13	14	13	8	7	7	10	14	14	8	10	15	3	1	2	4	1	1	0	0	0	
Lignite	PJ	256	150	82	61	20	31	22	26	12	7	7	5	5	2	2	2	3	2	2	1	2	2	1	0	0	0	0	0	0	0		
Petroleum	PJ	641	696	662	644	624	558	646	513	517	469	415	465	423	416	396	392	400	288	370	335	339	302	309	327	300	304	307	302	258	253	302	283
Gases	PJ	289	332	327	344	343	399	494	473	476	470	445	505	506	380	378	369	461	393	417	393	425	390	364	411	389	409	402	408	366	381	368	413
Natural gas, Petroleum gas	PJ	263	304	305	329	334	398	494	473	476	470	445	505	506	380	378	369	461	393	417	393	425	390	364	411	389	409	402	408	366	381	368	413
Renewable Energy Sources	PJ	1	0	0	0	2	2	2	2	3	3	3	4	4	5	5	10	9	11	11	14	40	44	88	117	90	113	97	128	115	124	130	135
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Electricity	PJ	419	422	425	430	436	447	455	458	465	465	504	486	501	489	487	474	492	480	488	505	529	507	533	543	514	540	544	543	536	519	487	519
District heat	PJ	122	127	123	123	114	125	113	107	108	101	91	91	165	179	183	161	121	142	99	137	86	48	61	56	58	46	53	23	38	29	36	
Total	PJ	1,759	1,761	1,644	1,625	1,556	1,579	1,747	1,598	1,588	1,523	1,478	1,571	1,544	1,465	1,452	1,437	1,535	1,308	1,443	1,355	1,483	1,346	1,345	1,460	1,350	1,428	1,396	1,434	1,299	1,315	1,315	1,386
Final energy consumption by energy source: trade, commerce and services (TCS) in mill. tce																																	
Hard coal	mill. tce	1.1	1.2	0.8	0.8	0.6	0.6	0.5	0.6	0.3	0.3	0.4	0.5	0.4	0.3	0.2	0.2	0.3	0.5	0.5	0.3	0.4	0.5	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Lignite	mill. tce	8.7	5.1	2.8	2.1	0.7	1.1	0.7	0.9	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Petroleum	mill. tce	21.9	23.8	22.6	22.0	21.3	19.0	22.1	17.5	17.6	16.0	14.2	15.9	14.4	14.2	13.5	13.4	13.6	9.8	12.6	11.4	11.6	10.3	10.5	11.2	10.2	10.4	10.5	10.3	8.8	8.6	10.3	9.7
Gases	mill. tce	9.9	11.3	11.2	11.7	11.7	13.6	16.9	16.1	16.2	16.0	15.2	17.2	17.3	13.0	12.9	12.6	15.7	13.4	14.2	13.4	14.5	13.3	12.4	14.0	13.3	13.9	13.7	13.9	12.5	13.0	12.5	14.1
Natural gas, Petroleum gas	mill. tce	9.0	10.4	10.4	11.2	11.4	13.6	16.8	16.1	16.2	16.0	15.2	17.2	17.3	13.0	12.9	12.6	15.7	13.4	14.2	13.4	14.5	13.3	12.4	14.0	13.3	13.9	13.7	13.9	12.5	13.0	12.5	14.1
Renewable Energy Sources	mill. tce	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	1.3	1.5	3.0	4.0	3.1	3.8	3.3	4.4	3.9	4.2	4.4	4.6	
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Electricity	mill. tce	14.3	14.4	14.5	14.7	14.9	15.2	15.5	15.6	15.9	15.9	17.2	16.6	17.1	16.7	16.6	16.2	16.8	16.4	16.7	17.2	18.1	17.3	18.2	18.5	17.5	18.4	18.6	18.5	18.3	17.7	16.6	17.7
District heat	mill. tce	4.2	4.3	4.2	4.2	3.9	4.3	3.8	3.7	3.7	3.4	3.1	3.2	5.6	6.1	4.1	4.8	3.4	4.7	2.9	1.6	2.1	1.9	2.0	1.6	1.8	0.8	1.3	1.0	1.2			
Total	mill. tce	60.0	60.1	56.1	55.4	53.1	53.9	59.6	54.5	54.2	52.0	50.4	53.6	52.7	50.0	49.5	49.0	52.4	44.6	49.2	46.2	50.6	45.9	49.8	46.1	48.7	47.6	48.9	44.3	44.9	44.9	47.3	
Final energy consumption by energy source: trade, commerce and services (TCS) in %																																	
Hard coal	%	1.8	2.0	1.5	1.4	1.2	0.9	1.1	0.5	0.6	0.9	0.9	0.8	0.5	0.5	0.5	0.6	1.0	1.0	0.6	0.7	1.1	0.2	0.0	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	
Lignite	%	14.6	8.5	5.0	3.8	1.3	1.9	1.3	1.6	0.8																							

6.5 Final energy consumption by energy source: agriculture, fishing, construction

1990 - 2020: final data; 2021: provisional data

Source: fossil fuels and electricity according to AG Energiebilanzen based on destatis, UGR: renewable energy sources based on AGEE-Stat

6.6 Final energy consumption by energy source: transport

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption by energy source: transport in PJ																																	
Hard coal	PJ	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lignite	PJ	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Petroleum	PJ	2,329	2,372	2,468	2,542	2,497	2,554	2,562	2,577	2,628	2,718	2,681	2,623	2,594	2,513	2,517	2,448	2,407	2,379	2,377	2,361	2,369	2,382	2,385	2,448	2,450	2,465	2,534	2,607	2,544	2,562	2,100	2,177
Gases	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	6	7	8	9	9	9	7	7	7	6	6	5	6	6	
Natural gas, Petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	6	7	8	9	9	9	7	7	7	6	6	5	6	7	
Renewable Energy Sources	PJ	0	0	0	0	0	2	2	4	4	5	12	17	20	30	41	77	145	157	127	115	121	117	121	113	117	108	108	109	113	112	141	124
Other energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Electricity	PJ	49	55	54	54	55	58	60	61	58	57	58	58	58	59	59	59	59	57	60	60	60	44	43	42	41	42	43	42	42	45		
District heat	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	PJ	2,379	2,428	2,522	2,596	2,553	2,614	2,625	2,643	2,691	2,781	2,751	2,698	2,672	2,601	2,616	2,586	2,614	2,601	2,571	2,541	2,559	2,568	2,559	2,612	2,616	2,621	2,690	2,765	2,704	2,722	2,288	2,352
Final energy consumption by energy source: transport in mill. tce																																	
Hard coal	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lignite	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum	mill. tce	79.5	80.9	84.2	86.7	85.2	87.1	87.4	87.9	89.7	92.7	91.5	89.5	88.5	85.7	85.9	83.5	82.1	81.2	81.1	80.5	80.8	81.3	81.4	83.5	83.6	84.1	86.5	89.0	86.8	87.4	71.6	74.3
Gases	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural gas, Petroleum gas	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Renewable Energy Sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.4	0.6	0.7	1.0	1.4	2.6	4.9	5.4	4.3	3.9	4.1	4.0	4.1	3.8	4.0	3.7	3.7	3.9	3.8	4.2	4.2	
Other energy sources	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Electricity	mill. tce	1.7	1.9	1.8	1.8	1.9	2.0	2.0	2.1	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	1.5	1.5	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.5	
District heat	mill. tce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	mill. tce	81.2	82.8	86.1	88.6	87.1	89.2	89.6	90.2	91.8	94.9	93.9	92.0	91.2	88.7	89.3	88.2	89.2	88.7	87.7	86.7	87.3	87.6	87.3	89.1	89.2	89.4	91.8	94.4	92.3	78.1	80.3	
Final energy consumption by energy source: transport in %																																	
Hard coal	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lignite	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum	%	97.9	97.7	97.9	97.9	97.8	97.7	97.6	97.5	97.7	97.2	97.1																					

6.7 Final energy consumption: transport by sectors and selected energy sources

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption: transport by sectors and selected energy sources in PJ																																	
Rail transport	PJ	89	91	88	89	88	89	90	89	85	83	83	81	80	79	78	76	76	76	73	76	76	58	57	54	54	56	54	51	51	51		
Electricity	PJ	49	55	54	54	55	58	60	61	58	57	58	58	58	58	58	59	59	59	57	60	60	44	43	41	40	42	42	41	41	39	40	
Diesel oil	PJ	38	34	34	34	32	31	30	28	27	25	25	24	22	22	20	19	17	16	16	14	15	14	14	12	13	14	11	9	11	11	11	
Road transport	PJ	2,067	2,118	2,198	2,259	2,209	2,266	2,267	2,281	2,328	2,404	2,358	2,314	2,294	2,218	2,227	2,150	2,165	2,142	2,110	2,089	2,109	2,133	2,117	2,167	2,187	2,191	2,233	2,275	2,205	2,224	2,027	2,033
Aviation transport	PJ	196	192	206	218	226	235	246	255	262	281	298	291	288	293	299	345	362	375	379	368	362	347	371	375	362	389	426	438	435	200	258	
Jet fuel / kerosene	PJ	193	190	204	217	225	233	245	254	261	280	297	290	287	292	299	344	361	374	378	367	362	346	371	375	362	389	425	437	434	200	258	
Coastal and inland shipping	PJ	28	28	30	31	30	24	22	17	16	13	12	11	10	10	12	14	11	7	5	12	12	13	12	12	13	11	10	11	10	10	10	
Total	PJ	2,379	2,428	2,522	2,596	2,553	2,614	2,625	2,643	2,691	2,781	2,751	2,698	2,672	2,601	2,616	2,586	2,614	2,601	2,571	2,541	2,559	2,568	2,559	2,612	2,616	2,621	2,690	2,765	2,704	2,722	2,288	2,352
Final energy consumption: transport by sectors and selected energy sources in mill. tce																																	
Rail transport	mill. tce	3.0	3.1	3.0	3.0	3.0	3.1	3.1	3.1	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.6	2.6	2.0	2.0	1.9	1.8	1.9	1.9	1.8	1.8	1.7	1.8	
Electricity	mill. tce	1.7	1.9	1.8	1.8	1.9	2.0	2.0	2.1	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	
Diesel oil	mill. tce	1.3	1.2	1.2	1.2	1.1	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Road transport	mill. tce	70.5	72.3	75.0	77.1	75.4	77.3	77.4	77.8	79.4	82.0	80.5	79.0	78.3	75.7	76.0	73.4	73.9	73.1	72.0	71.3	72.0	72.8	72.2	74.0	74.6	74.8	76.2	77.6	75.2	75.9	69.2	69.4
Aviation transport	mill. tce	6.7	6.6	7.0	7.4	7.7	8.0	8.4	8.7	8.9	9.6	10.2	9.9	9.8	10.0	10.2	11.8	12.4	12.8	12.6	12.4	11.8	12.7	12.8	12.4	12.4	13.3	14.5	14.9	14.8	6.8	8.8	
Jet fuel / kerosene	mill. tce	6.6	6.5	7.0	7.4	7.7	8.0	8.3	8.7	8.9	9.6	10.1	9.9	9.8	10.0	10.2	11.7	12.3	12.8	12.5	12.3	11.8	12.6	12.8	12.3	13.3	14.5	14.9	14.8	6.8	8.8		
Coastal and inland shipping	mill. tce	0.9	1.0	1.0	1.0	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.5	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Total	mill. tce	81.2	82.8	86.1	88.6	87.1	89.2	89.6	90.2	91.8	94.9	93.9	92.0	91.2	88.7	89.3	88.2	89.2	88.7	87.7	86.7	87.3	87.6	87.3	89.1	89.2	89.4	91.8	94.4	92.9	78.1	80.3	
Final energy consumption: transport by sectors and selected energy sources in %																																	
Rail transport	%	3.7	3.7	3.5	3.4	3.4	3.4	3.4	3.4	3.2	3.0	3.0	3.0	3.0	3.1	3.0	3.0	2.9	2.9	3.0	3.0	2.9	2.3	2.2	2.1	2.1	2.1	2.0	1.9	1.9	2.2	2.2	
Electricity	%	2.1	2.3	2.1	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.3	2.3	1.7	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.7	1.7		
Diesel oil	%	1.6	1.4	1.3	1.3	1.2	1.1	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5			
Road transport	%	86.9	87.2	87.1	87.0	86.5	86.7	86.4	86.3	86.5	85.7	85.8	85.9	85.3	85.1	83.1	82.8	82.4	82.1	82.2	82.4	83.1	82.8	83.0	83.6	83.6	83.0	82.3	81.5	81.7	88.6	86.4	
Aviation transport	%	8.2	7.9	8.2	8.4	8.9	9.0	9.4	9.7	9.7	10.1	10.8	10.8	11.3	11.4	13.3	13.9	14.4	14.8	14.5	14.2	13.5	14.5	14.4	13.9	13.8	14.5	15.4	16.2	16.0	8.7	11.0	
Jet fuel / kerosene	%	8.1	7.8	8.1	8.3	8.8	8.9	9.																									

6.8 Final energy consumption: road transport by energy sources

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Final energy consumption: road transport by energy sources in PJ																																		
Motor gasoline	PJ	1,330	1,332	1,344	1,351	1,277	1,300	1,300	1,297	1,300	1,301	1,237	1,199	1,166	1,109	1,073	992	931	893	854	829	791	788	742	741	745	709	709	720	693	700	629	634	
Diesel oil	PJ	736	785	854	908	932	964	965	980	1,023	1,097	1,108	1,097	1,106	1,078	1,111	1,077	1,081	1,078	1,107	1,114	1,168	1,197	1,224	1,284	1,297	1,349	1,393	1,425	1,377	1,391	1,240	1,254	
Liquified petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	5	9	16	24	22	24	24	23	21	19	17	15	16	15	10	10	
Natural gas, Petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	6	7	8	9	9	7	7	6	6	5	6	6	7	6	7	
Renewable energy sources	PJ	0	0	0	0	0	2	2	4	4	5	12	17	20	30	41	75	144	156	126	113	119	115	119	112	116	107	107	108	113	112	140	123	
Electricity	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	5		
Total	PJ	2,067	2,118	2,198	2,259	2,209	2,266	2,267	2,281	2,327	2,403	2,358	2,314	2,293	2,218	2,227	2,150	2,165	2,142	2,110	2,089	2,109	2,133	2,117	2,167	2,187	2,191	2,233	2,275	2,205	2,224	2,027	2,033	
thereof motorized individual transport in PJ																																		
Motor gasoline	PJ	1,319	1,319	1,331	1,338	1,266	1,289	1,289	1,287	1,290	1,291	1,228	1,192	1,159	1,102	1,066	987	925	887	849	824	787	783	738	737	740	705	705	716	689	696	626	630	
Diesel oil	PJ	256	276	275	267	265	272	263	263	272	290	289	302	326	346	385	403	429	452	480	487	531	557	582	630	636	668	695	704	672	675	597	588	
Liquified petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	9	15	23	21	23	23	21	18	16	15	16	14	9	9		
Natural gas, Petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	4	4	4	5	4	4	3	3	3	2				
Renewable energy sources	PJ	0	0	0	0	0	0	0	1	1	1	1	3	5	6	10	15	32	67	74	65	63	71	71	73	68	69	69	71	70	82	73		
Electricity	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4			
Total	PJ	1,575	1,595	1,606	1,606	1,530	1,561	1,553	1,551	1,564	1,583	1,521	1,498	1,491	1,458	1,468	1,425	1,428	1,425	1,425	1,413	1,402	1,415	1,439	1,421	1,464	1,474	1,464	1,489	1,507	1,451	1,459	1,318	1,307
thereof public transport in PJ																																		
Motor gasoline	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diesel oil	PJ	34	36	37	38	38	39	39	40	41	44	45	44	44	42	43	39	37	35	35	34	35	35	34	34	35	36	38	38	37	38	32	31	
Liquified petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Natural gas, Petroleum gas	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	0	0	
Renewable energy sources	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	4	5	3	3	2	3	2	2	2	2	3	2				
Electricity	PJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	PJ	34	36	37	38	38	40	39	40	41	44	45	45	43	44	42	42	41	40	39	40	39	38	39	40	41	41	40	41	36	34			
thereof freight transport in PJ																																		
Motor gasoline	PJ	12	14	13	12	11	11	11	10	10	10	9	8	7	7	6	6	6	6	5	5	4	4	4	4	4	4	4	4	4	4	4		
Diesel oil	PJ	446	473	541	603	629	653	663	677	710	763	774</td																						

7.1 Energy efficiency indicators

Indicator	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Activity variables 1)																																	
Gross domestic product (GDP)	Bill. €	2,176	2,219	2,261	2,239	2,293	2,328	2,347	2,389	2,437	2,483	2,556	2,599	2,593	2,575	2,606	2,625	2,725	2,806	2,833	2,672	2,783	2,892	2,905	2,917	2,982	3,026	3,094	3,177	3,208	3,242	3,122	3,204
Population	Mill.	78.2	78.8	79.5	79.8	80.0	80.3	80.5	80.5	80.6	80.7	81.0	81.0	81.0	80.9	80.8	80.8	80.7	80.5	80.3	80.2	80.3	80.5	80.8	81.2	82.2	82.5	82.8	83.0	83.2	83.2	83.2	
Gross production value (GPV)	Bill. €	758	819	811	742	770	780	777	808	848	862	907	906	903	940	964	1,008	1,061	1,056	878	992	1,068	1,056	1,064	1,082	1,089	1,103	1,136	1,136	1,085	967	1,020	
Gross value added (GVA)	Bill. €	1,359	1,412	1,465	1,480	1,510	1,547	1,578	1,605	1,646	1,679	1,718	1,760	1,771	1,753	1,769	1,777	1,833	1,892	1,927	1,866	1,883	1,947	1,960	1,975	2,005	2,027	2,057	2,106	2,127	2,160	2,101	2,144
Living space	Mill. m ²	2,775	2,805	2,840	2,880	2,953	3,005	3,054	3,106	3,154	3,202	3,245	3,280	3,310	3,339	3,369	3,395	3,421	3,444	3,462	3,479	3,681	3,699	3,721	3,744	3,769	3,795	3,823	3,851	3,879	3,908	3,939	3,968
Transport performance 2)	Bill. pkm	4,291	4,718	4,723	4,663	5,049	5,158	5,140	5,402	5,581	5,876	6,007	6,062	6,073	6,326	6,640	6,720	7,211	7,450	7,498	6,800	7,233	7,256	7,155	7,312	7,438	7,604	7,787	7,898	7,920	7,973	7,504	7,702
Energy intensity 3)																																	
PEC / GDP	GJ/1000 €	6.8	6.6	6.3	6.4	6.2	6.1	6.3	6.1	6.0	5.8	5.6	5.6	5.6	5.7	5.6	5.5	5.4	5.1	5.1	5.1	4.7	4.6	4.7	4.4	4.4	4.4	4.3	4.1	4.0	3.8	3.9	
PEC / residents	GJ/Einw.	190.7	185.5	180.2	179.3	177.3	177.7	183.2	181.5	180.4	177.7	178.4	181.4	178.1	180.3	180.2	180.0	183.7	176.0	178.7	168.6	177.2	169.3	167.0	171.1	162.3	161.4	163.5	163.3	158.1	154.0	143.0	149.1
FEC / GDP	GJ/1000 €	4.4	4.2	4.0	4.1	4.0	4.0	4.1	4.0	3.9	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.4	3.1	3.2	3.2	3.3	3.1	3.1	3.1	2.9	2.9	2.8	2.8	2.7	2.7		
FEC / residents	GJ/Einw.	121.2	118.9	114.9	115.7	113.9	116.1	120.4	118.4	117.5	115.3	114.4	116.9	113.9	115.6	114.7	112.8	115.1	109.0	113.8	108.0	116.1	110.6	110.8	113.6	107.1	108.3	109.9	111.2	107.5	107.9	101.0	104.1
FEC Industry / GPV	GJ/1000 €	3.9	3.3	3.2	3.3	3.2	3.2	3.1	3.0	2.8	2.8	2.7	2.6	2.6	2.8	2.7	2.6	2.5	2.5	2.4	2.6	2.5	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.5	2.5		
FEC TCS / GVA	GJ/1000 €	1.3	1.2	1.1	1.1	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6		
FEC Households / Living space	MJ/m ²	849.5	885.2	845.5	896.1	859.2	883.4	946.3	918.8	882.0	816.0	796.3	860.2	812.2	823.4	781.9	763.2	766.4	655.8	738.8	712.2	727.0	630.7	652.4	682.8	580.5	606.5	621.7	608.3	598.1	620.4	609.8	607.6
FEC Households / residents	GJ/Einw.	30.2	31.5	30.2	32.3	31.7	33.1	35.9	35.4	34.6	32.4	32.0	34.9	33.2	34.0	32.5	32.0	32.5	28.0	31.8	30.9	33.4	29.0	30.1	31.6	26.9	28.0	28.8	28.3	27.9	29.2	28.9	29.0
FEC Transport / GDP	GJ/1000 €	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7		
FEC Transport / Transport perf.	MJ/100Pkrr	55.4	51.5	53.4	55.7	50.6	50.7	51.1	48.9	48.2	47.3	45.8	44.5	44.0	41.1	39.4	38.5	36.3	34.9	34.3	37.4	35.4	35.4	35.8	35.2	34.5	34.5	35.0	34.1	34.1	30.5	30.5	
Energy intensity , changes compared to the previous year in %																																	
PEC / GDP	%	n/a	-3.9	-3.8	0.9	-3.2	-0.9	2.5	-2.6	-2.6	-3.2	-2.3	0.2	-1.5	1.9	-1.2	-1.0	-1.8	-7.1	0.3	-0.2	0.9	-8.0	-1.5	2.3	-6.7	-0.9	-0.5	-2.4	-3.9	-3.5	-3.5	1.7
PEC / residents	%	n/a	-2.7	-2.8	-0.5	-1.1	0.2	3.1	-1.0	-0.6	-1.5	0.4	1.7	-1.8	1.2	0.0	-0.2	2.1	-4.2	1.6	-5.7	5.1	-4.5	-1.4	2.5	-5.2	-0.6	1.3	-0.1	-3.2	-2.6	-7.1	4.3
FEC / GDP	%	n/a	-3.0	-4.4	2.2	-3.6	0.8	3.1	-3.3	-2.8	-3.5	-0.7	-2.2	2.2	-2.0	-2.4	-1.9	-8.1	3.1	0.3	3.1	-8.2	0.0	2.5	-7.3	0.8	-0.3	-1.1	-4.0	-0.5	-2.8	0.5	
FEC / residents	%	n/a	-1.9	-3.4	0.7	-1.6	2.0	3.7	-1.6	-0.8	-1.8	-0.8	2.2	-2.5	1.5	-0.8	-1.6	2.0	-5.3	4.4	-5.2	7.5	-4.7	0.2	2.6	-5.7	1.1	1.5	1.2	-3.3	0.4	-6.4	3.1
FEC Industry / GPV	%	n/a	-16.2	-4.0	3.7	-2.4	-0.8	-1.7</td																									

8.1 Classification of energy sources compared to the structure of the German Energy Balance

Evaluation tables	Energy Balance since 2000	Energy Balance 1995 to 1999	Energy Balance 1990 to 1994
Hard coal	Coal Briquettes Coke Other hard coal products	Coal Briquettes Coke Other hard coal products	Coal Coke Briquettes Crude tar Pitch Other hard coal products Crude benzene
Lignite	Coal Briquettes Other lignite products Hard lignite	Coal Briquettes Other lignite products Hard lignite	Coal Briquettes Coke Slack Hard lignite
Petroleum	Crude oil Motor gasoline Naphtha Jet fuel / kerosene Diesel oil Fuel oil light Fuel oil heavy Petroleum coke Liquified petroleum Gas Refinery gas Other petroleum products	Crude oil Motor gasoline Naphtha Jet fuel / kerosene Diesel oil Fuel oil light Fuel oil heavy Petroleum coke Liquified petroleum Gas Refinery gas Other petroleum products	Crude oil Motor gasoline Naphtha Aviation gasoline Jet fuel Diesel oil Fuel oil light Fuel oil heavy Petroleum coke Other petroleum products Liquified petroleum Gas Refinery gas
Gases	Coke oven and town gas Blast furnace and converter gas Natural gas, Petroleum gas Mine gas	Coke oven and town gas Blast furnace and converter gas Natural gas, Petroleum gas Mine gas	Coke oven gas Blast furnace gas Natural gas Petroleum gas Mine gas
Renewable energy sources	Hydro, wind and photovoltaics Biomass und renew. wastes Other renew. energy sources	Hydropower Wind energy and photovoltaics Ren. wastes and other biomass Other renew. energy sources	Sewage gas Hydropower Wood Peat Sewage sludge, ren. wastes
Other energy sources	non-renew. wastes, heat		Other energy sources
Electricity	Electricity	Electricity	Electricity
Nuclear energy	Nuclear energy	Nuclear energy	Nuclear energy
District heat	District heat	District heat	District heat

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