E-CONTROL
Energy for our future.

KEY STATISTICS 2018

AUSTRIAN ENERGY IN FIGURES.

www.e-control.at

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Preface

E-Control is mandated by law to draw up the Austrian electricity and natural gas statistics and to publish them at www.e-control.at. Among these publications are our annual statistical reports, which have become key tools for all those who work in the areas of electricity and natural gas.

E-Control has published this statistics booklet since 2009, presenting key data on the Austrian electricity and natural gas markets in an effort to give an overview of the Austrian economy as a whole, the energy industry and volume trends, and to offer more detailed information from our market statistics, capturing the effects of liberalisation on the electricity and gas markets or relating facts and figures about our wholesale and retail markets.

This brochure is meant as a quick introduction to the most important statistical information for all those who are interested in finding out about developments and interrelations on the Austrian energy market.

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Austrian energy statistics

Energy supply is crucial for our daily lives and for our economy, and energy statistics carry particular importance as well; this is also reflected in the way powers and duties in this field are distributed. While Statistics Austria is involved, most statistical duties for energy lie directly with the Minister for Sustainability and Tourism. By virtue of section 92 Elektrizitätswirtschafts- und -organisationsgesetz (Electricity Act) 2010 and section 147 Gaswirtschaftsgesetz (Natural Gas Act) 2011, the Minister entrusts the statistical duties for electricity and natural gas to the regulatory authority E-Control.

Though this construction deviates from the usual Austrian distribution of competences, the operational statistics produced by E-Control are firmly integrated into the Austrian statistical system and represent the main primary statistical source for the electricity and natural gas part of the Austrian energy balance.

A major difference between statistics drawn up by Statistics Austria and those produced by E-Control consists in that the former must comply with the rules for energy balances and in particular for international comparability, while the latter depict commodity flows and markets.

This means different approaches to reflecting energy transformation and an exclusive focus of the energy balance on the energetic use of primary energy sources. For instance, any use of electrical energy or natural gas is counted as (potential) consumption in E-Control's operational statistics, i.e. we consider that it forms part of the market. The energy balance e.g. counts gas used in power plants as part of transformation when looking at primary energy use but as part of the electricity/heat balance (depending what it is transformed into) when looking at final energy. When natural gas is used e.g. by the chemical industry, it appears as non-energetic use (not as energetic use in chemical processes).

The documentation accompanying the energy balance for 2015 for the first time contained a detailed referencing that enabled going back and forth between the two approaches.

The economic situation in 2017

The Austrian economy expanded by 3.0% in real terms; this was a ten-year high, and twice as much as last year. Statistics Austria detected a 2.1% rise in consumer prices. In this, gas and electricity prices had a dampening effect, sinking by 1.6% and 5.4%, respectively.

Consumption trends in 2017

Both electricity and gas consumption were up in 2017. Natural gas use increased by 8.2% to reach 95.2 TWh or 8.5 billion (bn) normal cubic metres (n cu m), in an upwards trend that was even steeper than last year (resulting in a plus of 3.9%). We believe that this increase in consumption was due to more space heating, particularly in the first quarter of the year. Electricity consumption edged up by 1.4% and stood at 66.3 TWh, i.e. the upwards tendency of the last 20 years (only reversed in 2009 and 2014) continued.

This was true across the board: households used 2.1% more electricity than last year, other small consumers 0.5%, medium-sized industry was up by 1.2% and large industry by 0.6%. The latter two of these categories accounted for about half of all electricity consumption in 2017, channeled through only one-fifth of metering points.

On the gas side, households used 17.6 TWh natural gas overall in 2017, non-households 77.6 TWh. When interpreting these numbers, please bear in mind the change in statistics that took place last year: we no longer use the applicable category of charges or the annual consumption of metering points to distinguish between consumer groups; instead, we now look at the annual consumption of all metering points that are assigned to consumers and we only differentiate between households and non-households. Due to this change, comparing this year's numbers with last year's is quite impossible.

Energy inputs in 2017

Domestic natural gas production increased by 7.0% and reached 13.5 TWh. Withdrawals from storage stood at 73.9 TWh (up by almost 20%) and there were injections of 78.5 TWh (an increase of 26.7%). Net imports, at 91.6 TWh, were also higher than last year.

Domestic electricity production again increased markedly (by 4.3%), to reach 70.8 TWh, even though hydro output (particularly out of run-of-river plants) was down by 0.8 TWh. Production from thermal power plants rose by 11.7% and that from RES by 24.3%.

Net imports were down by 0.8 TWh, at 6.5 TWh; this was the result of a 3.0 TWh (11.4%) increase in physical imports and a 3.6 TWh (18.8%) rise in physical exports.

Storage situation at year-end 2017

Austrian natural gas storage held 58.6 TWh or 5.2 bn n cu m at year-end 2017, making for a 61.7% fill level. This corresponds to a year-on-year increase by about 4% and covers close to two-thirds of domestic gas consumption in 2017.

Overall, gas storage facilities with a capacity of 95.0 TWh (8.5 bn n cu m) are located on Austrian territory. The hourly withdrawal capacity is 45.9 GWh (4.1 million (m) n cu m).

Fill levels of Austrian electricity storage at year-end 2017 stood at 2.2 TWh (67.5%).

Electricity storage in Austria has an overall capacity of 3.3 TWh.

Market structures and consumer behaviour in 2017

About 92% of the over 1.2 m customers (metering points) on the Austrian natural gas market are households, but they only account for just under one-fifth (about 18%) of consumption. Non-households (including gas-fired power plant) make for more than 80% of the natural gas consumed.

Almost 80,500 natural gas consumers (metering points) switched suppliers in 2017, which results in a 6% switching rate. Most switchers (75,000) were households, but a switching rate of 5.7% among non-household consumers confirms that this group is just as dynamic. Overall, 2017 was the most active switching year Austria has seen since the gas market was opened, with the highest rates noted in Upper Austria (9.2%), Carinthia (8.6%) and Styria (7.1%).

On the electricity side, Austria has 6.1 m electricity metering points for 4.6 m consumers. 81% of these metering points, and 87% of consumers, are households, which means the non-household sector accounts for no more than 18% of metering points and 13% of consumers. Looking at domestic consumption, the picture is reversed: non-households account for about 75%, households are just shy of 25%.

Overall, close to 263,000 electricity metering points were switched to different suppliers in 2017, i.e. the overall switching rate was 4.3%. Large industrial consumers were least active, with a switching rate of 2.6%. Medium-sized industry (3.8%), other small consumers (4.2%) and households (4.3%) were more involved. In terms of regional differences, the highest switching rates were observed in Upper Austria (6.3%), Carinthia (5.4%) and Vienna (5.0%).

Overview

Economic indicators

Consumer price index, Jan 2005 = 100						
	Total		**Natural gas**		**Electricity**	
	Annual average	**Change in % (*)**	**Annual average**	**Change in % (*)**	**Annual average**	**Change in % (*)**
1995	84.4		70.8		89.0	
2000	90.4	1.4	79.9	2.6	94.3	1.2
2005	100.0	2.1	100.0	5.0	100.0	1.2
2010	109.5	1.9	120.6	4.1	120.9	4.2
2015	121.2	2.1	136.3	2.6	128.3	1.2
2016	122.3	0.9	133.7	–1.9	129.7	1.1
2017	**124.8**	**2.1**	**131.6**	**–1.6**	**122.7**	**–5.4**

(*) average or annual change rates
Source: Statistics Austria

Gross domestic product		
	m€ (rate of 2010)	**Change in % (*)**
1995	219 276	
2000	254 069	3.2
2005	277 307	1.8
2010	295 897	1.3
2015	312 614	1.1
2016	317 149	1.5
2017	**326 776**	**3.0**

(*) average or annual change rates
Source: Statistics Austria

The economic context for the electricity and gas statistics

Population, annual average		
	Population numbers	**Change in % (*)**
1995	7 948 278	
2000	8 011 566	0.2
2005	8 225 278	0.5
2010	8 361 069	0.3
2015	8 629 519	0.6
2016	8 739 806	1.3
2017	**8 795 073**	**0.6**

(*) average or annual change rates
Source: Statistics Austria

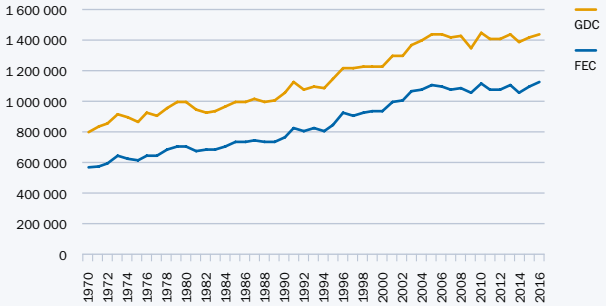
Households				
	Single-person households	**Multi-person households**	**Total**	**Average household size (persons)**
1990	814 417	2 098 708	2 913 125	2.61
1995	892 546	2 200 689	3 093 235	2.54
2000	976 630	2 260 453	3 237 083	2.45
2005	1 198 477	2 276 865	3 475 342	2.34
2010	1 300 166	2 323 587	3 623 754	2.28
2015	1 418 449	2 398 317	3 816 766	2.22
2016	1 429 495	2 435 324	3 864 819	2.22
2017	**1 438 325**	**2 451 767**	**3 890 092**	**2.22**

Source: Statistics Austria

Relevant Austrian population indicators

Energy industry indicators

Gross domestic consumption (GDC) and final energy consumption (FEC) in TJ



Source: Statistics Austria

Gross domestic consumption and final energy consumption in TJ

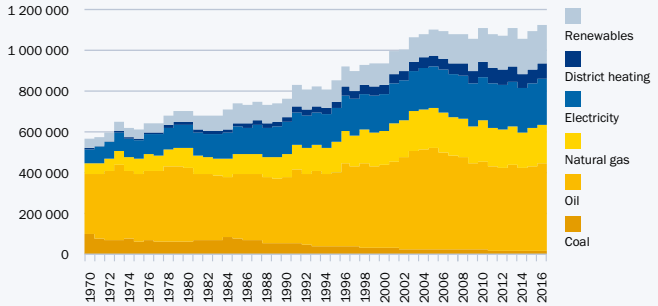
	Gross domestic consumption	Final energy consumption
1990	1 052 189	763 924
1995	1 139 767	847 213
2000	1 224 463	937 129
2005	1 435 901	1 100 872
2010	1 446 967	1 109 895
2014	1 382 107	1 057 418
2015	1 415 328	1 090 956
2016	**1 435 376**	**1 121 042**

Source: Statistics Austria

Main economic and energy consumption indicators

ENERGY BALANCE

Energy mix in final energy consumption in TJ



Source: Statistics Austria

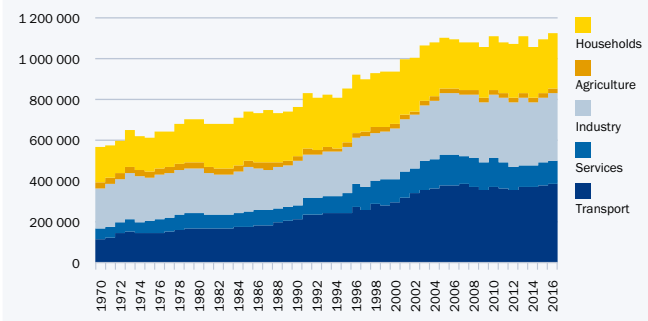
Energy mix in final energy consumption in TJ

	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
1990	50 757	327 575	114 375	152 452	25 636	93 130	**763 924**
1995	38 011	364 905	144 612	166 123	35 515	98 047	**847 213**
2000	32 870	401 577	167 475	183 336	42 699	109 172	**937 129**
2005	24 585	496 129	193 033	206 287	54 333	126 504	**1 100 872**
2010	19 852	434 233	198 367	215 641	76 367	165 434	**1 109 895**
2014	17 787	402 663	176 461	217 111	68 001	175 395	**1 057 418**
2015	17 467	413 000	185 137	219 823	71 322	184 207	**1 090 956**
2016	**17 626**	**425 056**	**192 315**	**222 665**	**72 718**	**190 661**	**1 121 042**

Source: Statistics Austria

The input side of the Austrian energy balance

Final energy consumption by sectors in TJ



Source: Statistics Austria

Final energy consumption by sectors in TJ

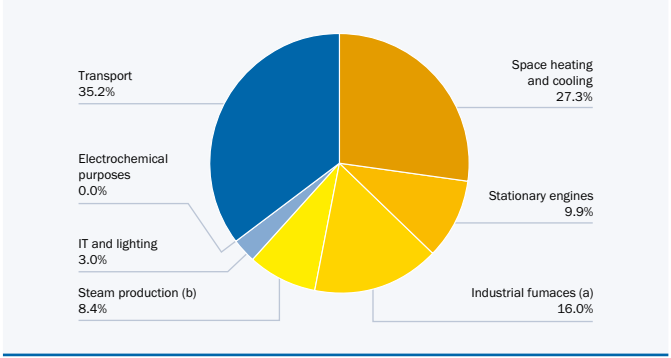
	Households	Agriculture	Industry	Services	Transport	Total
1990	243 488	24 491	213 974	73 134	208 837	**763 924**
1995	262 862	22 490	220 777	96 396	244 687	**847 213**
2000	259 565	22 206	249 475	113 156	292 726	**937 129**
2005	253 514	20 947	295 369	151 919	379 123	**1 100 872**
2010	265 513	21 310	312 863	141 714	368 496	**1 109 895**
2014	249 733	21 338	309 568	109 357	367 421	**1 057 418**
2015	264 193	21 568	315 401	112 475	377 319	**1 090 956**
2016	**271 604**	**21 842**	**329 013**	**113 133**	**385 450**	**1 121 042**

Source: Statistics Austria

The output side of the Austrian energy balance

USEFUL ENERGY

Useful energy consumption in 2016



Source: Statistics Austria

Useful energy consumption in 2016

	TJ	Share in %
Space heating and cooling	306 392	27.3
Stationary engines	111 512	9.9
Industrial furnaces (a)	179 672	16.0
Steam production (b)	94 203	8.4
IT and lighting	33 800	3.0
Electrochemical purposes	492	0.0
Transport	394 970	35.2
Total	**1 121 042**	**100.0**

(a) Cooling and freezing, electrical appliances
(b) Warm water and cooking
Source: Statistics Austria

Uses of energy in Austria as reflected in the energy balance (this and next page)

Natural gas – useful energy consumption in 2016			
	TJ	**Share in %**	**Share in total in %**
Space heating and cooling	77 331	40.2	6.9
Stationary engines	2 469	1.3	0.2
Industrial furnaces (a)	58 445	30.4	5.2
Steam production (b)	43 309	22.5	3.9
IT and lighting	9	0.0	0.0
Electrochemical purposes	0	0.0	0.0
Transport	10 752	5.6	1.0
Summe	**192 315**	**100.0**	**17.2**

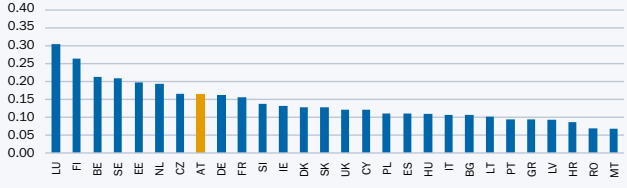
(a) Cooling and freezing, electrical appliances
(b) Warm water and cooking
Source: Statistics Austria

Electricity – useful energy consumption in 2016			
	TJ	**Share in %**	**Share in total in %**
Space heating and cooling	28 622	12.9	2.6
Stationary engines	93 015	41.8	8.3
Industrial furnaces (a)	52 266	23.5	4.7
Steam production (b)	3 216	1.4	0.3
IT and lighting	33 790	15.2	3.0
Electrochemical purposes	492	0.2	0.0
Transport	11 263	5.1	1.0
Summe	**222 665**	**100.0**	**19.9**

(a) Cooling and freezing, electrical appliances
(b) Warm water and cooking
Source: Statistics Austria

INTERNATIONAL ENERGY INDICATORS

Per capita energy consumption in EU countries in 2016, TJ/inhabitant

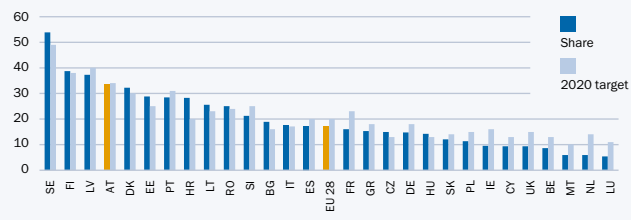


Source: Eurostat

Gross domestic consumption of energy divided by GDP in 2016, TJ/m€

Source: Eurostat

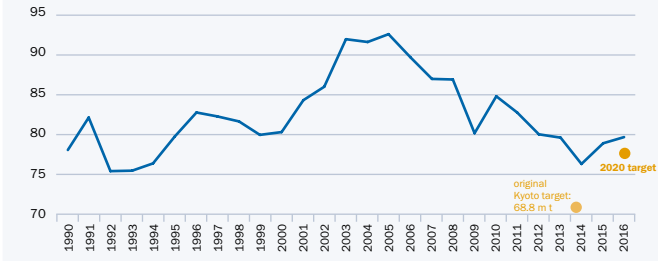
Renewables shares in the EU in 2016 and the 2020 target, %



Source: Eurostat

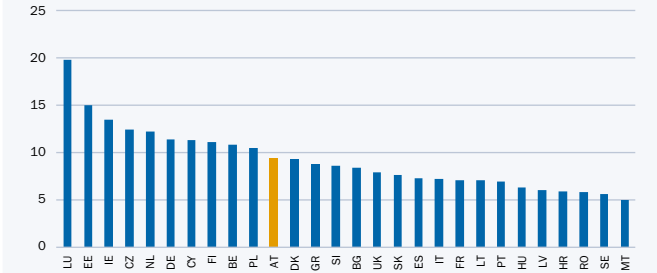
GREENHOUSE GAS EMISSIONS

Emissions in Austria and the 2020 target, 1990–2016, m t CO_2 equivalents



Source: Environment Agency Austria

Per capita emissions in EU countries in 2016, t CO_2 equivalents



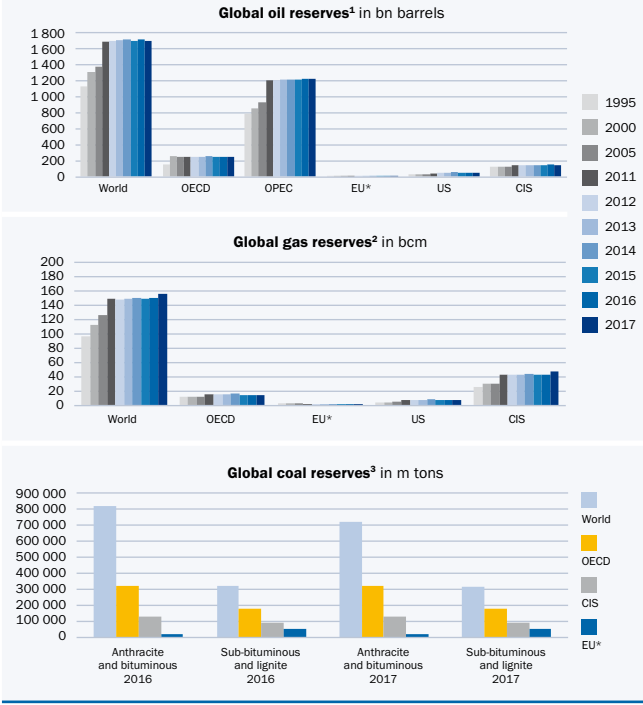
Source: Eurostat

Austrian emissions compared to emissions in other countries (this page)

Primary sources of energy across the globe (right)

Energy reserves

Global energy reserves



* *Does not include Estonia, Latvia and Lithuania before 1996 or Slovenia before 1990*

[1] *Source: BP Statistical Review of World Energy 2018*

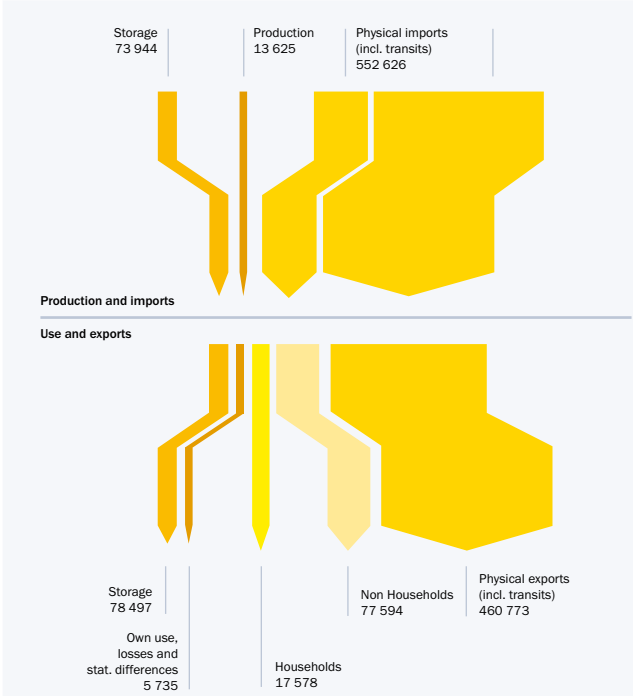
[2] *Source: BP Statistical Review of World Energy 2018*

[3] *Source: BP Statistical Review of World Energy 2018 & German Federal Institute for Geosciences and Natural Resources, Energy Study 2016*

Operational statistics

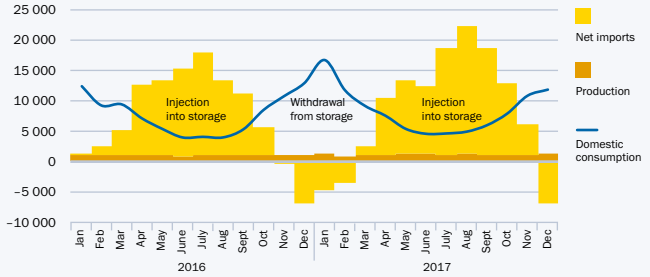
Natural gas in Austria

Simplified energy flow chart for 2017, in GWh



Flow chart for natural gas in Austria

Natural gas balance in GWh

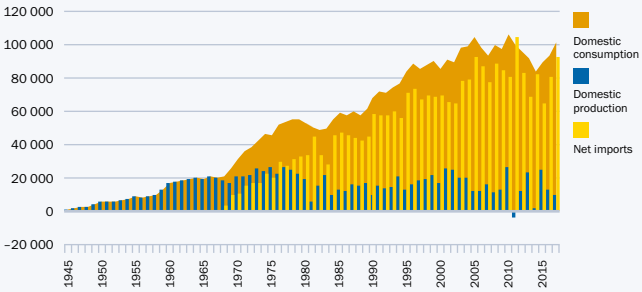


Natural gas balance for 2017

	m Nm³	GWh	Year-on-year change in %
Supply to consumers (a)	**8 500**	**95 195**	**8.2**
Own use and losses (b) and statistical differences (c)	512	5 729	–
Domestic consumption	**9 011**	**100 925**	**8.7**
Injection into storage (d)	7 009	78 497	26.7
Exports (d)	41 140	460 773	10.5
Consumption and exports = production and imports	**57 160**	**640 195**	**12.0**
Imports (d)	49 342	552 626	11.1
Production (d)	1 203	13 477	7.0
Injection of biogas (d)	13	149	13.7
Withdrawal from storage (d)	6 602	73 944	19.9

(a) Supply to consumers (here: households, industry, chemical industry, refineries, thermal power plants etc.)
(b) For production, storage operation and transports (including transits)
(c) Statistical difference between calculated and metered supply to consumers
(d) Physical flow data (imports and exports include transits)

Natural gas consumption and supply in GWh

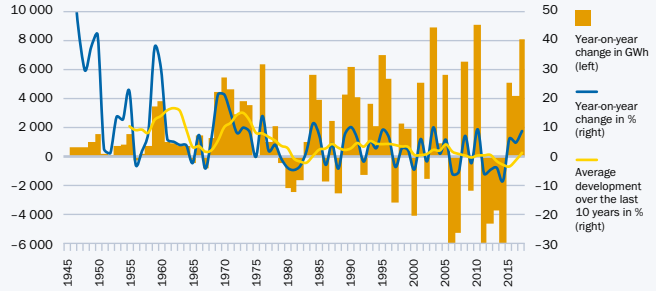


Natural gas balance in GWh

	Supply to consumers (d)	Statistical difference (c)	Own use and losses (b)	Domestic consumption	Net imports	Domestic production (a)
1990	64 847		2 569	67 416	57 785	9 631
1995	79 631	1	3 265	82 897	70 275	12 621
2000	80 514		4 612	85 126	68 635	16 491
2005	100 420	–401	4 065	104 083	92 019	12 065
2010	102 093	803	2 873	105 769	79 817	25 952
2015	84 585	–343	4 398	88 641	64 091	24 550
2016	87 961	–52	4 914	92 822	80 369	12 452
2017	**95 195**	**205**	**5 524**	**100 925**	**91 852**	**9 072**

(a) Production and net storage movements
(b) For production, storage and transports (including transits)
(c) Statistical difference between calculated and metered supply to consumers
(d) Supply to consumers (here: households, industry, chemical industry, refineries, thermal power plants etc.)
Sources: Federal Ministry of Economics and Labour (for data up to 2002), E-Control (for data from 2002 onwards)

Natural gas consumption trends in GWh and %



Physical imports and exports of natural gas in 2017

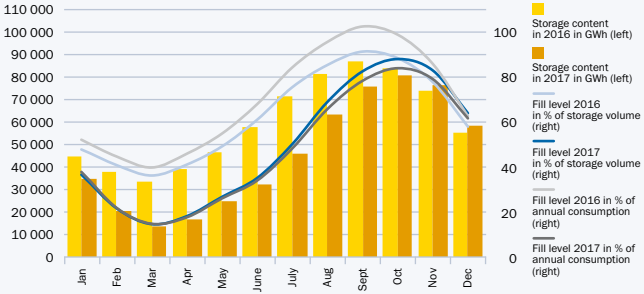
	Imports (*)		Exports (*)	
	in m Nm³	in GWh	in m Nm³	in GWh
Germany	8 144	91 216	4 769	53 408
Switzerland	1	17	24	264
Italy			28 244	316 332
Slovenia			2 017	22 594
Hungary			3 960	44 353
Slovakia	41 195	461 384	2 127	23 822
Czech Republic	1	10		
Total	**49 342**	**552 626**	**41 140**	**460 773**

(*) Physical flows metered at Austrian borders (including transits)

Main natural gas indicators for Austria (pages 19 – 21)

Natural gas infrastructure in Austria

Natural gas storage at month end (*) in 2017, in GWh and %



(*) Includes all storage facilities on the Austrian territory.

Natural gas storage facilities (*)

	Storage volume in GWh	Max. injection rate in MWh per hour	Max. withdrawal rate in MWh per hour
2005	32 202	13 254	14 887
2010	51 906	21 966	25 905
2015	92 685	36 272	44 817
2016	94 971	37 412	45 872
2017	**91 774**	**36 166**	**44 260**

(*) Includes all storage facilities on the Austrian territory.

Domestic gas production in 2017		
	Max. production rate in MWh per hour	Max. production rate in 1,000 Nm³ per hour
2005	–	–
2010	2 319	207
2015	1 982	177
2016	1 611	144
2017	**1 682**	**150**

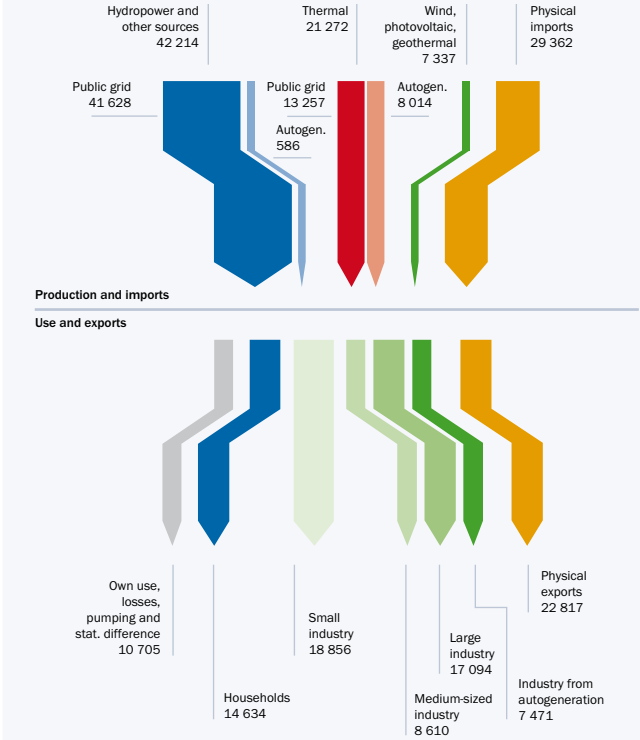
Network length at year end in km			
	Grid level 1, including transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
2000 (*)	2 377	3 266	n.a.
2005	2 757	3 425	30 195
2010	3 143	3 685	33 027
2015	3 089	4 096	35 115
2016	3 092	4 111	35 625
2017	**3 091**	**4 115**	**38 746**

(*) Partly estimated based on year of start of operation

Key figures on natural gas infrastructure in Austria (pages 22 and 23)

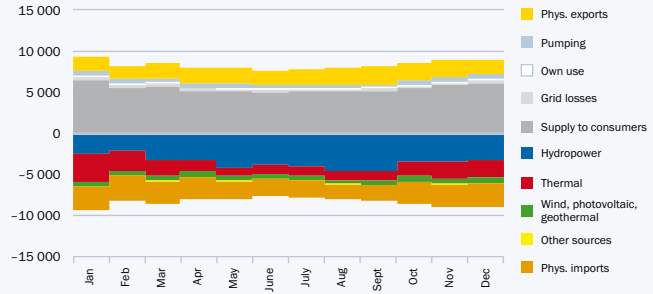
Electricity in Austria (total electricity supply)

Simplified energy flow chart for 2017 in GWh



Electricity flow chart for Austria

Electricity balance 2017, in GWh

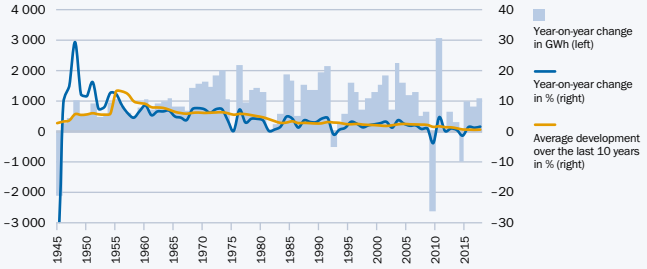


Electricity balance 2017

		2016 in GWh	2017 in GWh	Year-on-year change in GWh	in %
Supply to consumers (1)		65 373	66 274	901	1.4
Grid losses		3 342	3 459	117	3.5
Own use		2 025	2 090	65	3.2
Domestic consumption		**70 740**	**71 824**	**1 084**	**1.5**
Pumping		4 339	5 545	1 206	27.8
Physical exports		19 207	22 817	3 610	18.8
Use and exports = generation and imports		**94 286**	**100 185**	**5 900**	**6.3**
Gross generation	Hydro	42 916	42 088	–828	–1.9
	Thermal	19 043	21 272	2 229	11.7
	Renewables (2)	5 900	7 337	1 436	24.3
	Other sources	60	127		
Physical imports		26 366	29 362	2 996	11.4

(1) Includes final energy consumption and the electricity consumption of the non-electricity energy sector
(2) Photovoltaics, wind and geothermal

Electricity consumption trends in GWh and %

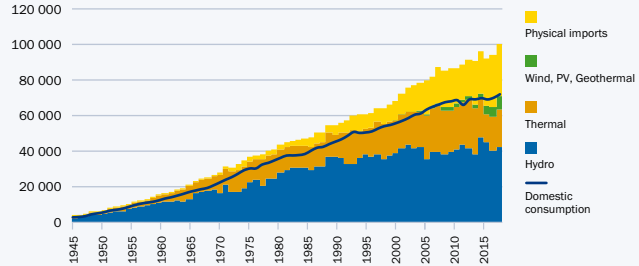


Electricity balance in GWh

	Supply to consumers	Own use	Grid losses	Domestic consumption	Electricity for pumping	Physical exports	Use and exports = generation and imports
1990	43 995	1 563	2 971	**48 529**	1 425	7 298	**57 252**
1995	47 722	1 556	3 328	**52 606**	1 511	9 757	**63 874**
2000	53 751	1 566	3 195	**58 512**	1 990	15 216	**75 718**
2005	60 465	2 051	3 567	**66 083**	3 276	17 732	**87 091**
2010	63 308	2 089	3 534	**68 931**	4 576	17 472	**90 979**
2015	64 494	1 980	3 443	**69 917**	4 907	19 328	**94 151**
2016	65 373	2 025	3 342	**70 740**	4 339	19 207	**94 286**
2017	**66 274**	**2 090**	**3 459**	**71 824**	**5 545**	**22 817**	**100 185**

Austrian electricity indicators (pages 25 – 28)

Domestic consumption and supply in GWh



Electricity balance in GWh

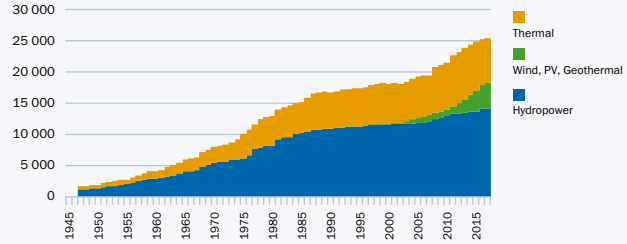
	Gross generation					Physical imports	Generation and imports = use and exports
	Hydro-power	Thermal	Wind, PV, Geothermal	Other sources	Total		
1990	32 492	17 921			**50 413**	6 839	**57 252**
1995	38 477	18 110			**56 587**	7 287	**63 874**
2000	43 461	18 270	67		**61 798**	13 920	**75 718**
2005	39 574	26 126	1 347	–312	**66 735**	20 355	**87 091**
2010	41 575	27 384	2 096	16	**71 070**	19 909	**90 979**
2014	44 730	15 932	4 326	147	**65 134**	26 712	**91 846**
2015	40 465	18 833	5 421	43	**64 762**	29 389	**94 151**
2017	**42 088**	**21 272**	**7 337**	**127**	**70 823**	**29 362**	**100 185**

Gross generation mix in 2017						
Energy source			**GWh**		**Share in %**	
Hydropower	Run of river	up to 10 MW	5 243	7.4	12.5	
		over 10 MW	23 634	33.4	56.2	
	Pumped storage	up to 10 MW	546	0.8	1.3	
		over 10 MW	12 665	17.9	30.1	
	Total hydro		**42 088**	**59.4**	**100.0**	
Thermal	Fossil fuels and derivatives	Hard coal	1 758	2.5		8.3
		Lignite	–	–	–	–
		Coal derivatives (1)	2 157	3.0		10.1
		Oil derivatives (1)	783	1.1		3.7
		Natural gas	11 064	15.6		52.0
		Total	15 763	22.3		74.1
	Biofuels	Solid (2)	2 523	3.6		11.9
		Liquid (2)	0	0.0		0.0
		Gaseous (2)	595	0.8		2.8
		Sewage and landfill gases (2)	35	0.0		0.2
		Total (2)	3 154	4.5		14.8
	Other biofuels (3)		1 366	1.9		6.4
	Other fuels		989	1.4		4.7
	Total thermal (of which CHP)		**21 272** (19 208)	**30.0** (27.1)		**100.0** (90.3)
Renewables	Wind (4)		6 569	9.3	89.5	
	Photovoltaics (4)		767	1.1	10.5	
	Geothermal (4)		0	0.0	0.0	
	Total renewables (4)		**7 337**	**10.4**	**100.0**	
Other sources (5)			127	0.2		
Total			**70 823**	**100.0**		

(1) Coal and oil derivatives used for electricity generation
(2) Only biofuels as defined by Austrian law
(3) Biofuels as defined by Union law, except for (2)
(4) Injection by certified renewable power plants as defined by Austrian law
(5) Generation that can neither be broken down by primary energy source nor assigned to a type of power station

Power plants in Austria

Installed capacity at year end in MW

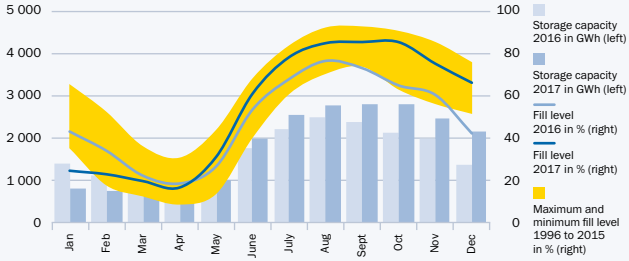


Installed capacity at year end in MW

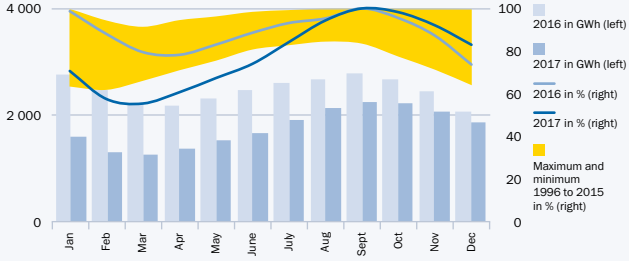
	Gross maximum capacity						
	Hydropower plants			Wind, PV, Geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
1990	–	–	10 947	–	5 740	**16 687**	**16 233**
1995	–	–	11 306	–	6 134	**17 440**	**16 959**
2000	5 256	6 407	11 664	49	6 315	**18 028**	**17 532**
2005	5 318	6 519	11 837	841	6 527	**19 206**	**18 696**
2010	5 396	7 524	12 919	1 054	7 431	**21 404**	**20 829**
2015	5 656	7 993	13 650	3 362	7 768	**24 780**	**24 177**
2016	5 700	8 418	14 118	3 762	7 323	**25 203**	**24 622**
2017	**5 714**	**8 436**	**14 150**	**4 080**	**7 183**	**25 414**	**24 841**

Key figures on electricity infrastructure in Austria (pages 29 – 34)

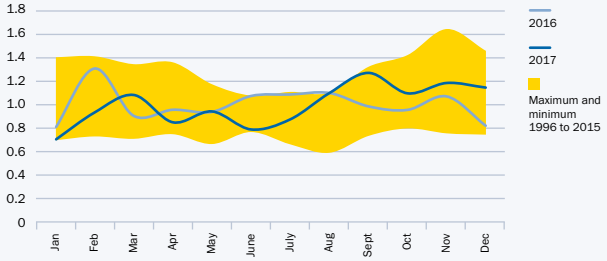
Storage capacity and fill levels at month end – large reservoirs of public generators, in GWh and %



Fossil fuel stocks at month end – thermal power plants of public generators, in GWh and %



Energy capability factor – run-of-river power plants of public generators



Annual energy capability factor – large run-of-river power plants of public generators

2016	2017	1996 to 2015 maximum	1996 to 2015 minimum
1.00	0.99	1.16	0.87

Energy availability – power plants of public generators (*), in %						
	Thermal power plants			Pumped storage power plants		
	Availability factor	Utilisation factor	Outages	Availability factor	Utilisation factor	Outages
2000	76.7	32.6	5.9	93.6	18.6	2.6
2005	85.3	42.7	5.3	93.3	19.7	1.1
2010	84.3	35.9	15.0	84.2	18.7	7.7
2015	80.4	12.1	13.7	93.0	17.3	2.3
2016	79.1	16.1	13.7	88.8	15.6	2.2
2017	**77.2**	**20.5**	**20.1**	**90.7**	**15.4**	**3.6**

(*) Power plants with a capacity of at least 25 MW that inject into Austrian control areas

Combined heat and power (CHP)						
	Efficiency of thermal power plants in %			Capacity of thermal power plants in MW		
	With CHP		Without CHP	With CHP		Without CHP
	Overall efficiency (1)	Effective electric efficiency (2)	Efficiency (3)	Thermal capacity	Maximum capacity	Maximum capacity
2000	68.9	49.5	42.8	6 648	3 964	2 351
2005	69.9	52.9	41.5	7 545	4 511	2 016
2010	72.7	57.2	40.2	8 680	5 761	1 670
2015	72.0	52.5	37.7	8 667	6 063	1 705
2016	75.1	56.9	36.9	8 902	6 027	1 295
2017	**73.3**	**55.6**	**36.5**	**8 923**	**6 188**	**996**

(1) Electricity and heat output divided by total fuel input
(2) Electricity output divided total by fuel input minus heat output
(3) Electricity output divided by fuel input

Firm capacity in 2017 – run-of-river plants of public generators (*)					
Type of power plant	**Up to 50 MW**	**50 MW to 100 MW**	**100 MW to 250 MW**	**Over 250 MW**	**Total**
			Capacity in MW		
Run-of-river plants with pondage	246	250	–	–	**496**
Run-of-river plants without pondage	106	83	444	310	**943**
Total	**352**	**333**	**444**	**310**	**1 439**
			Share in maximum capacity in %		
Run-of-river plants with pondage	48.5	46.3	–	–	**47.3**
Run-of-river plants without pondage	32.5	53.6	38.5	34.1	**37.1**
Total	**42.2**	**47.8**	**38.5**	**34.1**	**40.1**

(*) Power plants with a capacity of at least 25 MW that inject into Austrian control areas

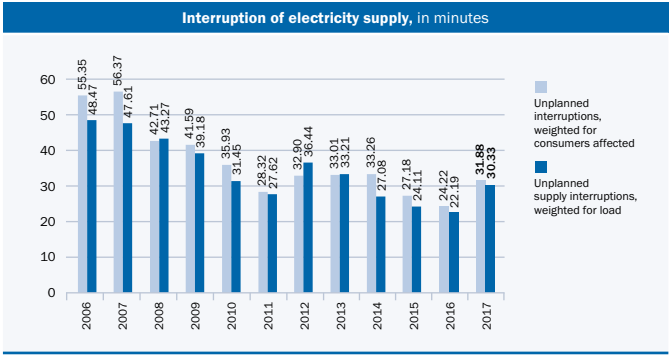
Public grid in Austria

Route length (*) of the public grid at year-end 2017					
	Overhead lines		Cables		Total
Voltage level	km	Share in %	km	Share in %	km
380 kV	1 383	0.6	53	0.0	**1 436**
220 kV	1 880	0.8	7	0.0	**1 886**
110 kV	6 085	2.6	605	0.3	**6 690**
1 kV to 110 kV	24 840	10.5	40 035	16.9	**64 876**
Up to 1 kV	31 386	13.2	130 912	55.2	**162 298**
Total	**65 574**	**27.6**	**171 612**	**72.4**	**237 186**

(*) Including high and ultra-high voltage lines of public generators

High voltage substations in the public grid at year-end 2017		
Voltage level	Number of transformers	Total capacity in MVA
Primary voltage up to 200 kV	1 028	43 138
Primary voltage over 200 kV	88	30 675
High voltage to high, medium and low voltage	**1 116**	**73 813**

Medium voltage substations in the public grid at year-end 2017		
Voltage level	Number of transformers	Total capacity in MVA
Medium voltage to medium and low voltage	**78 953**	**31 694**



Quality of electricity supply in Austria

Market statistics

Austrian gas market

Consumption structure

		Supply to consumers			
Consumer category	**Unit**	**2016**	**2017**	**Change absolute**	**Change in %**
Households	GWh	18 659	17 596	–1 064	–5.7
Small business and industry (1)	GWh	9 273	8 856	–417	–4.5
Medium-sized industry (2)	GWh	7 565	8 074	508	6.7
Large industry (3)	GWh	52 745	60 664	7 919	15.0
Statistical difference	GWh	–282	5		
Total supply to consumers	**GWh**	**87 961**	**95 195**	**6 928**	**8.3**

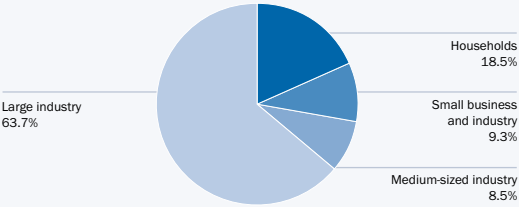
		Number of metering points (MP)		Number of Consumer (Cs)	
Consumer category	**Unit**	**2016**	**2017**	**2016**	**2017**
Households	1 000	1 269.7	1 245.1	—	1 178.0
Small business and industry (1)	1 000	75.7	91.9	—	70.8
Medium-sized industry (2)	1 000	0.9	8.1	—	1.0
Large industry (3)	1 000	0.2	2.6	—	0.2
Total number of metering points	**1 000**	**1 346.5**	**1 347.7**	**—**	**1 250.0**

		Average consumption (per MP)		Average consumption (per Cs)	
Consumer category	**Unit**	**2016**	**2017**	**2016**	**2017**
Households	kWh/..	14 696	14 132	—	14 921
Small business and industry (1)	kWh/..	122 452	96 367	—	125 135
Medium-sized industry (2)	MWh/..	8 519.6	993.9	—	8 349.3
Large industry (3)	MWh/..	257 292.0	23 225.2	—	304 845.8
Total	**MWh/..**	**905.8**	**756.2**	**—**	**1 078.6**
Total	**kWh/..**	**65 264**	**70 636**	**—**	**77 159**

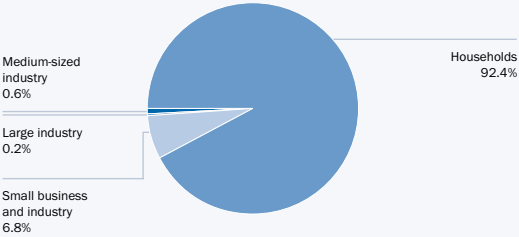
(1) annual withdrawal up to 2.8 GWh
(2) annual withdrawal from 2.8 GWh/a to 28 GWh
(3) annual withdrawal exceeding 28 GWh
Statistical difference: Difference between metered consumption and individual reporting. Negative values may result from discrepancies between the settlement period and calendar year

Structure of the Austrian natural gas market in terms of consumer groups and areas within Austria (pages 36 – 38)

Consumption structure – supply to consumers 2017



Consumption structure – number of metering points 2017

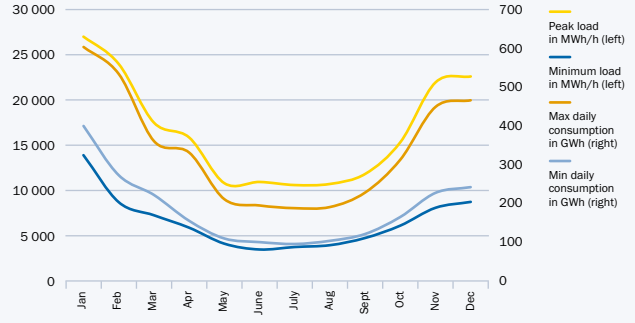


Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2016	2017	Change absolute	Change in %
Burgenland		2 330	2 403	73	3.2
Carinthia		2 222	2 175	–46	–2.1
Lower Austria		19 723	21 026	1 303	6.6
Upper Austria		22 650	23 780	1 129	5.0
Salzburg		3 191	3 291	100	3.1
Styria		12 658	15 033	2 375	18.8
Tyrol		3 963	4 225	263	6.6
Vorarlberg		2 329	2 436	107	4.6
Vienna		19 179	20 821	1 643	8.6
Austria	Statistical difference	–282	5	–	–
	Total supply to consumers	**87 961**	**95 195**	**6 947**	**8.2**

Statistical difference: Difference between metered consumption and individual reporting per consumer category

Consumption structure – number of metering points by grid zone in 1 000				
Federal province / grid zone	2016	2017	Change absolute	Change in %
Burgenland	51.9	53.2	1.3	2.4
Carinthia	13.8	13.8	0.0	–0.1
Lower Austria	293.5	294.1	0.5	0.2
Upper Austria	144.8	144.6	–0.2	–0.1
Salzburg	36.5	36.6	0.1	0.2
Styria	67.0	67.3	0.3	0.4
Tyrol	49.4	51.7	2.3	4.6
Vorarlberg	35.6	36.0	0.4	1.2
Vienna	654.0	650.5	–3.5	–0.5
Austria	**1 346.5**	**1 347.7**	**1.1**	**8.2**

Load indicators for 2017 in MWh/h and GWh



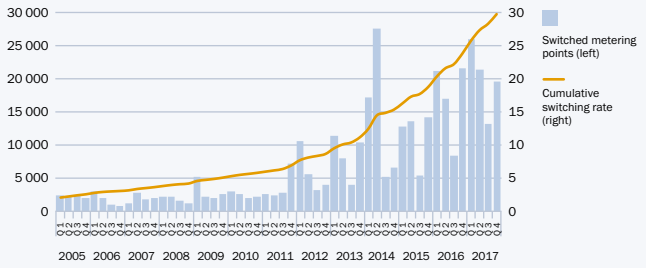
Load indicators

Year	Annual peak load MWh/h	Annual minimum load MWh/h	Maximum daily minimum load MWh/h	Maximum daily consumption GWh	Minimum daily consumption GWh	Peak load utilisation period h
2013	23 556	3 192	16 400	489	80	3 675
2014	20 291	3 674	14 679	428	94	3 889
2015	20 673	3 286	14 234	432	90	4 092
2016	24 591	3 584	18 228	525	90	3 577
2017	**27 110**	**3 508**	**22 282**	**604**	**96**	**3 511**

Load indicators of natural gas supply in Austria

THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES

Supplier switches and switching rates (*) in numbers and %



(*) By number of metering points

Supplier switches and switching rates (*)

	2005	2010	2015	2016	2017
			Number of supplier switches		
Households	8 058	8 018	42 662	62 854	**74 593**
Small business and industry			3 330	5 266	**5 684**
Medium-sized industry	837	1 781	58	92	**121**
Large industry			9	34	**20**
Total	**8 895**	**9 799**	**46 059**	**68 246**	**80 418**
			Switching rates in %		
Households	0.6	0.6	3.4	5.0	**6.0**
Small business and industry			4.3	7.0	**6.2**
Medium-sized industry	1.2	1.2	6.9	10.4	**1.5**
Large industry			4.6	16.6	**0.8**
Total	**0.7**	**0.7**	**3.4**	**5.1**	**6.0**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2010	2015	2016	2017
Burgenland	50	139	1 160	1 761	**2 155**
Carinthia	37	28	585	893	**1 193**
Lower Austria	2 180	3 142	12 557	15 426	**18 844**
Upper Austria	1 273	1 582	7 972	11 611	**13 261**
Salzburg	78	65	568	989	**1 183**
Styria	158	643	3 172	4 968	**4 790**
Tyrol	–	2	400	1 140	**1 672**
Vorarlberg	–	2	304	562	**790**
Vienna	5 119	4 196	19 341	30 896	**36 530**
Austria	**8 895**	**9 799**	**46 059**	**68 246**	**80 418**

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2010	2015	2016	2017
Burgenland	0.1	0.3	2.3	3.4	**4.1**
Carinthia	0.3	0.2	4.2	6.4	**8.6**
Lower Austria	0.8	1.1	4.3	5.3	**6.4**
Upper Austria	0.9	1.1	5.5	8.0	**9.2**
Salzburg	0.3	0.2	1.6	2.7	**3.2**
Styria	0.3	1.0	4.7	7.4	**7.1**
Tyrol	–	0.0	0.8	2.3	**3.2**
Vorarlberg	–	0.0	0.9	1.6	**2.2**
Vienna	0.8	0.6	2.9	4.7	**5.6**
Austria	**0.7**	**0.7**	**3.4**	**5.1**	**6.0**

(*) By number of metering points

Gas switching rates (pages 40 – 41)

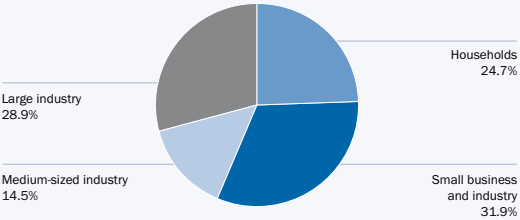
Austrian electricity market (public grid)

Consumption structure					
		Supply to consumers			
Consumer category	Unit	2016	2017	Change	
Households	GWh	14 327	14 634	306	2.1%
Small business and industry	GWh	18 763	18 856	93	0.5%
Medium-sized industry	GWh	8 508	8 610	103	1.2%
Large industry	GWh	16 999	17 094	95	0.6%
Own use from the public grid	GWh	–435	–487		
Statistical difference	GWh	42	97		
Total supply to consumers	**GWh**	**58 203**	**58 804**	**600**	**1.0%**
		Number of metering points		... of consumer	
Consumer category	Unit	2016	2017	2016	2017
Households	1 000	4 954.9	4 980.5	3 969.7	3 993.8
Small business and industry	1 000	1 056.0	1 073.0	602.5	608.3
Medium-sized industry	1 000	34.4	36.0	1.1	1.1
Large industry	1 000	31.3	32.0	0.2	0.2
Total number of metering points	**1 000**	**6 076.6**	**6 121.5**	**4 573.5**	**4 603.3**
		Average consumption per metering point		... per consumer	
Consumer category	Unit	2016	2017	2016	2017
Households	kWh/...	2 892	2 938	3 609	3 664
Small business and industry	kWh/...	17 768	17 573	31 141	30 999
Medium-sized industry	kWh/...	247 415	239 058	8 094 769	8 145 837
Large industry	kWh/...	543 786	533 444	74 230 313	73 679 698
Total	**kWh/...**	**9 578**	**9 606**	**12 726**	**12 774**

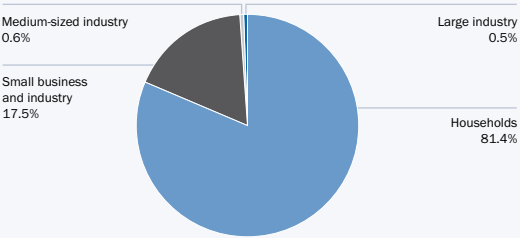
Households: residential sector
Small business and other small consumers: Consumers with an annual withdrawal from the public grid of less than 4 GWh
Medium-sized industry: Consumers with an annual withdrawal from the public grid between 4 GWh and 20 GWh
Large industry: Consumers with an annual withdrawal from the public grid of more than 20 GWh
Own use from the public grid is no final consumption (no further breakdown)
Statistical difference: Difference between metered consumption and individual reporting.

Remarks:
The breakdown by the two consumer categories households and non-households starts only with the reporting year 2016. An assignement to these two consumer categories before this date can only be modelled.
Consumer (Sites) are to be reported from 2016 onwards.

Consumption structure – supply to consumers 2017



Consumption structure – number of metering points 2017

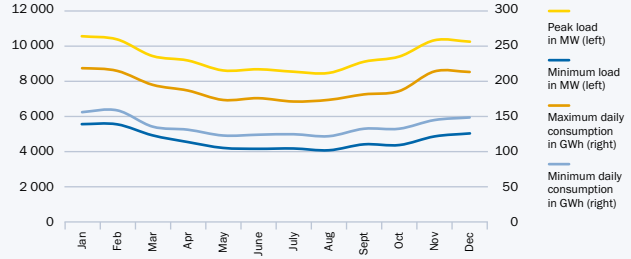


Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2016	2017	Change	
Burgenland		1 644	1 681	37	2.2%
Carinthia		4 211	4 294	83	2.0%
Lower Austria		8 282	8 494	211	2.6%
Upper Austria		11 278	11 178	–99	–0.9%
Salzburg		3 665	3 691	26	0.7%
Styria		8 716	8 875	160	1.8%
Tyrol		5 726	5 750	24	0.4%
Vorarlberg		2 622	2 660	39	1.5%
Vienna		12 452	12 570	117	0.9%
Austria	Own use from the public grid	–435	–487	–	–
	Statistical difference	42	97	–	–
	Total supply to consumers	**58 203**	**58 804**	**600**	**1.0%**

Own use from the public grid is no final consumption (no further breakdown)
Statistical difference: Difference between metered consumption and individual reporting.

Consumption structure – number of metering points and consumer by grid zone in 1 000				
	Number of metering points		Number of consumer	
Federal province / grid zone	2016	2017	2016	2017
Burgenland	206.8	213.0	166.9	168.5
Carinthia	390.5	391.6	277.4	278.9
Lower Austria	849.3	853.8	652.9	652.5
Upper Austria	1 021.1	1 027.8	742.9	748.5
Salzburg	430.9	437.8	276.8	279.8
Styria	938.8	942.0	666.3	675.2
Tyrol	478.7	483.1	374.3	373.3
Vorarlberg	233.3	237.0	185.0	188.7
Vienna	1 527.2	1 535.3	1 231.0	1 238.0
Austria	**6 076.6**	**6 121.5**	**4 573.5**	**4 603.3**

Load indicators for 2017 in MW and GWh



Load indicators

	Annual peak load	Annual minimum load	Maximum daily min. load	Daily baseload supply	Peak load utilisation time	Load factor (M)
	MW	MW	MW	GWh	h	
2013	10 086	3 381	6 716	45 252	6 009	0.69
2014	10 126	4 023	6 653	44 623	5 935	0.68
2015	10 066	4 075	6 554	45 958	6 071	0.69
2016	10 397	4 084	6 969	46 777	5 947	0.68
2017	**10 578**	**4 084**	**7 171**	**47 670**	**5 919**	**0.68**

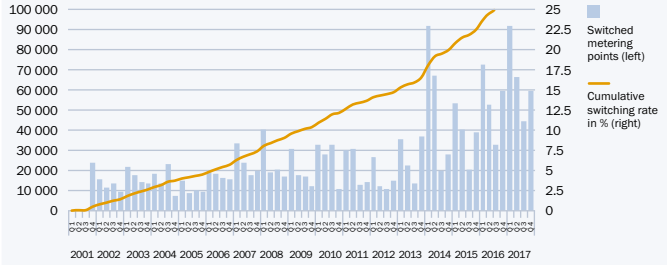
Peak load utilisation time = consumption / peak load [during reference period]
Load factor = peak load utilisation time / number of hours [in the reference period]

Structure of the Austrian electricity market in terms of consumer groups and areas within Austria (pages 42 – 44)

Load indicators of electricity supply in Austria (this page)

THE EFFECTS OF LIBERALISATION: ELECTRICITY SWITCHING RATES

Supplier switches and switching rates (*) in numbers and %



(*) By number of metering points

Supplier switches and switching rates (*)

	2005	2010	2015	2016	2017
	Number of supplier switches				
Households	22 768	69 781	102 571	173 981	**215 373**
Small business and industry	19 686	34 387	50 039	42 716	**45 066**
Medium-sized industry	164	224	163	1 094	**1 372**
Large industry	21	10	35	300	**847**
Total	**42 639**	**104 402**	**152 808**	**218 091**	**262 658**
	Switching rates in %				
Households	0.6	1.7	2.3	3.5	**4.3**
Small business and industry	1.2	2.1	3.0	4.0	**4.2**
Medium-sized industry	6.3	12.2	8.2	3.2	**3.8**
Large industry	11.0	5.2	16.7	1.0	**2.6**
Total	**0.8**	**1.8**	**2.5**	**3.6**	**4.3**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	**2005**	**2010**	**2015**	**2016**	**2017**
Burgenland	335	1 402	3 826	5 292	**6 352**
Carinthia	5 078	3 760	13 795	16 920	**21 177**
Lower Austria	6 322	21 580	17 570	23 369	**30 402**
Upper Austria	11 952	20 077	36 731	58 472	**65 163**
Salzburg	1 057	1 476	3 757	3 909	**6 812**
Styria	3 502	26 180	32 533	41 910	**41 235**
Tyrol	2 028	1 706	4 140	6 711	**10 930**
Vorarlberg	240	607	2 221	2 535	**3 517**
Vienna	12 125	27 614	38 235	58 973	**77 070**
Austria	**42 639**	**104 402**	**152 808**	**218 091**	**262 506**

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	**2005**	**2010**	**2015**	**2016**	**2017**
Burgenland	0.2	0.7	1.9	2.6	**3.0**
Carinthia	1.4	1.0	3.5	4.3	**5.4**
Lower Austria	0.8	2.6	2.1	2.8	**3.6**
Upper Austria	1.3	2.1	3.6	5.7	**6.3**
Salzburg	0.3	0.4	0.9	0.9	**1.6**
Styria	0.4	2.9	3.5	4.5	**4.4**
Tyrol	0.5	0.4	0.9	1.4	**2.3**
Vorarlberg	0.1	0.3	1.0	1.1	**1.5**
Vienna	0.8	1.9	2.5	3.9	**5.0**
Austria	**0.8**	**1.8**	**2.5**	**3.6**	**4.3**

(*) By number of metering points

Electricity switching rates (pages 46 – 47)

Green electricity injection and support payments
(Austria, 2017 and 2016)

Primary energy source	Injection in GWh	Net support in m €	Supported green electricity share in total supply, in %	Average support in cent/kWh
2017			(1)	
Supported small hydro	**1 624.6**	**82.9**	**2.8**	**5.10**
Other renewables	**8 903.0**	**1 025.9**	**15.1**	**11.52**
Wind	5 745.9	524.7	9.8	9.13
Wastes with high biog. fraction	1 999.4	263.2	3.4	13.16
Biogas (*)	565.2	94.4	1.0	16.71
Liquid biomass	0.1	0.0	0.0002	7.87
Photovoltaics	574.3	142.8	0.98	24.86
Sewage and landfill gas	18.0	0.7	0.03	4.11
Geothermal	0.1	0.0	0.0001	3.36
Total small hydro and other renewables	**10 527.7**	**1 108.8**	**17.9**	**10.53**
2016			(2)	
Supported small hydro	**1 772.2**	**86.2**	**3.0**	**4.78**
Other renewables	**7 997.9**	**924.3**	**13.7**	**11.56**
Wind	4 931.8	440.3	8.5	8.67
Wastes with high biog. fraction	1 981.6	262.7	3.4	13.38
Biogas (*)	564.5	97.7	1.0	17.53
Liquid biomass	0.2	0.0	0.0003	13.21
Photovoltaics	500.5	122.9	0.86	26.56
Sewage and landfill gas	19.2	0.7	0.03	4.58
Geothermal	0.0	0.0	0.0000	3.48
Total small hydro and other renewables	**9 770.1**	**1 010.5**	**16.8**	**10.34**

(*) incl. operation markups
(1) Relating to the total electricity supplied to consumers from the public grid in 2017, i.e. 58 872 GWh (as of 06/2018)
2) Relating to the total electricity supplied to consumers from the public grid in 2016, i.e. 58 184 GWh (as of 06/2018)
Source: Green power settlement agent OeMAG, E-Control, June 2018 – preliminary values

Wholesale markets

Electricity forward prices (€/MWh)

Source: EEX

Electricity spot prices (€/MWh)

Source: EXAA

Price developments in a variety of relevant wholesale markets (pages 49 – 55)

Electricity forward and spot prices in €/MWh				
	EEX Base		EEX Peak	
	Day-ahead average	Y 2019 average	Day-ahead average	Y 2019 average
2016	32.28	26.37	35.82	33.77
2017	34.49	30.29	38.40	38.46
2018	35.88	37.67	38.71	46.75
January 2017	51.37	27.45	62.82	35.41
February 2017	40.56	27.88	47.41	35.89
March 2017	31.47	27.51	33.74	35.49
April 2017	29.00	28.01	28.67	36.02
May 2017	31.66	27.78	32.59	35.62
June 2017	30.23	28.32	30.68	36.13
July 2017	33.50	29.15	34.55	36.90
August 2017	30.77	29.88	31.77	37.80
September 2017	34.71	32.38	37.73	40.45
October 2017	30.13	33.69	34.82	42.15
November 2017	40.11	35.59	48.34	44.72
December 2017	30.78	36.20	38.27	45.40
January 2018	29.78	35.79	37.39	44.82
February 2018	40.15	34.11	44.24	42.70
March 2018	39.04	34.98	42.52	43.35
April 2018	31.94	37.89	31.87	46.58
May 2018	32.52	41.21	33.01	50.62
June 2018	42.69	41.82	44.09	52.14

Source: EXAA, EEX

Gas spot market prices, in €/MWh					
	TTF (NL) average	CEGH (AT) average		TTF (NL) average	CEGH (AT) average
2016	19.80	20.65	September 2017	17.23	17.49
2017	17.32	18.09	October 2017	17.10	18.20
2018	21.01	20.85	November 2017	19.51	19.64
January 2017	20.09	20.35	December 2017	20.87	20.76
February 2017	19.77	20.24	January 2018	18.62	18.66
March 2017	15.82	16.94	February 2018	21.02	19.68
April 2017	16.17	17.04	March 2018	23.22	23.28
May 2017	15.67	16.96	April 2018	19.58	19.81
June 2017	15.08	16.66	May 2018	21.64	21.84
July 2017	15.05	16.29	June 2018	21.94	22.39
August 2017	15.93	16.58			

Sources: ICIS Heren, CEGH

Gas spot market prices, in €/MWh

Sources: ICIS Heren, CEGH

Gas and coal forward prices in €/MWh, €/t					
	Y 2019				
	Gas average	Coal average		Gas average	Coal average
December 2016	17.66	55.86	October 2017	17.13	64.94
January 2017	17.98	59.41	November 2017	17.87	68.47
February 2017	17.64	60.35	December 2017	17.91	70.04
March 2017	16.68	58.01	January 2018	17.90	70.10
April 2017	16.81	59.00	February 2018	17.01	65.36
May 2017	16.50	56.37	March 2018	17.29	61.58
June 2017	16.27	57.50	April 2018	18.33	66.20
July 2017	16.42	59.02	May 2018	20.56	73.70
August 2017	16.46	60.77	June 2018	20.17	74.73
September 2017	16.98	63.00			

Source: EEX, ICE

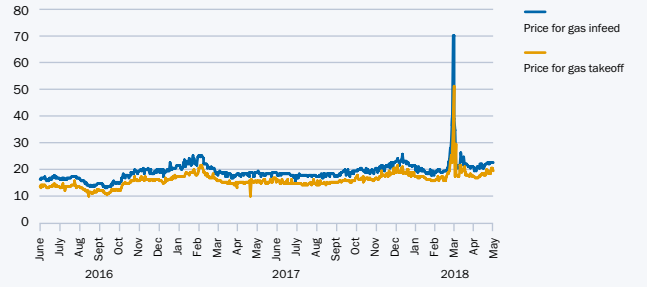
Gas and coal forward prices in €/MWh, €/t

Source: EEX, ICE

Gas import price (2002 = 100)					
	Import index	Change in %		Import index	Change in %
2002	100.00		2013	241.84	0.50
2003	103.82	3.82	2014	200.64	–17.03
2004	102.00	–1.75	2015	178.90	–10.83
2005	135.12	32.47	2016	127.52	–28.72
2006	174.62	29.23	2017	143.96	12.89
2007	160.87	–7.87	January 2018	165.74	29.97
2008	226.46	40.77	February 2018	156.85	–5.36
2009	164.19	–27.50	March 2018	157.50	0.41
2010	182.52	11.16	April 2018	157.97	–4.69
2011	218.01	19.44	May 2018	161.83	2.45
2012	240.63	10.38			

Source: Statistics Austria

Balancing gas procured by players in the daily regime, in €/MWh



Source: Austrian Gas Clearing and Settlement (AGCS)

Brent oil forward market (next month) in €/barrel and $/barrel			
	€/ barrel	USD/ barrel	Month-on-month change of € in %
December 2016	52.01	54.82	
January 2017	52.30	55.51	0.56
February 2017	52.68	56.07	0.73
March 2017	49.23	52.58	–6.56
April 2017	50.15	53.84	1.86
May 2017	46.51	51.44	–7.25
June 2017	42.40	47.61	–8.85
July 2017	42.69	49.15	0.70
August 2017	43.93	51.87	2.91
September 2017	46.57	55.48	6.00
October 2017	49.02	57.62	5.25
November 2017	53.49	62.78	9.12
December 2017	54.02	64.09	0.99
January 2018	56.59	69.04	4.77
February 2018	53.18	65.66	–6.04
March 2018	54.06	66.70	1.66
April 2018	58.61	71.74	8.42
May 2018	65.37	77.02	11.52
June 2018	65.81	76.79	0.68

Source: ICE, Oesterreichische Nationalbank (OeNB)

Brent oil forward market in €/barrel

Source: ICE, Oesterreichische Nationalbank (OeNB)

CO_2 emissions forward prices in €/t			
	EEX CO_2 Y18 (MidDec)		EEX CO_2 Y18 (MidDec)
2017	5.95	September 2017	6.92
2018	11.66	October 2017	7.40
January 2017	5.33	November 2017	7.71
February 2017	5.25	December 2017	7.64
March 2017	5.21	January 2018	8.43
April 2017	4.88	February 2018	9.56
May 2017	4.82	March 2018	11.73
June 2017	5.10	April 2018	13.52
July 2017	5.40	May 2018	15.00
August 2017	5.79	June 2018	15.47

Source: EEX

CO_2 emissions forward prices in €/t

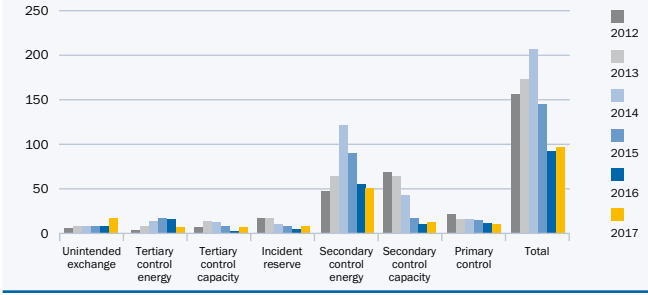
Source: EEX

Pellet price index (*)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Index Jan 2006 = 100	122	112	102	115	116	128	129	143	140	132	128	130
Year-on-year change in %		–8.46	–9.09	13.37	0.55	10.71	0.47	10.45	–1.89	–5.78	–3.15	1.79

(*) Based on average annual values (PPI 06)
Sources: proPellets Austria, E-Control calculations

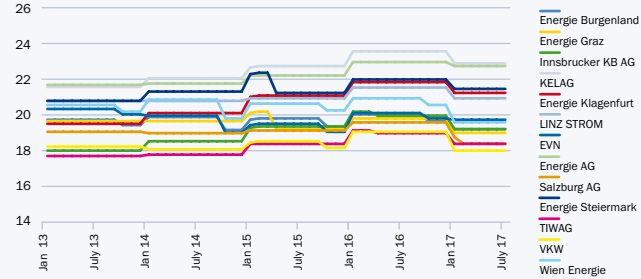
Cost of balancing services in m€



Sources: 2015 and 2016: APG (1 January to 31 December), 2012 to 2014 and 2017: E-Control (some preliminary data; information as of 31 January 2018)

Retail markets

Development of incumbents' electricity retail prices
in cent/kWh (3 500 kWh) (energy, system charges, taxes and surcharges)



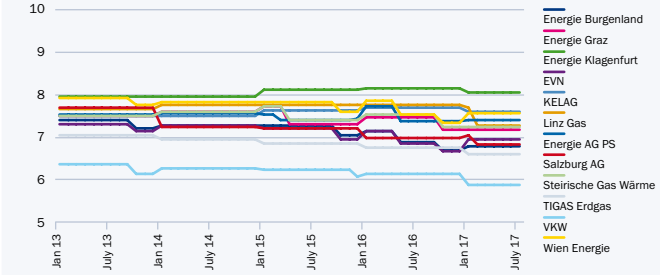
Source: E-Control, tariff calculator

Development of electricity retail prices in cent/kWh (3 500 kWh)

	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers		
	Minimum	Maximum	Average	1st quartile	Median	3rd quartile
H1 2013	6.121	8.750	7.730	6.550	7.574	8.043
H2 2013	6.120	8.750	7.670	6.430	7.574	8.043
H1 2014	6.120	8.750	7.577	6.405	7.146	7.781
H2 2014	6.120	8.750	7.405	6.020	6.638	7.330
H1 2015	6.093	8.750	7.155	6.053	6.488	7.314
H2 2015	5.966	8.750	7.025	5.870	6.211	6.958
H1 2016	5.740	8.750	6.895	5.470	5.490	7.105
H2 2016	5.669	8.750	6.825	4.695	5.408	5.968
H1 2017	5.668	8.750	6.730	5.145	5.597	6.250
H2 2017	5.669	8.750	6.730	5.054	5.544	6.139
H1 2018	5.669	8.750	6.760	–	–	–

Retail price developments for electricity and gas (pages 57 – 58)

Development of incumbents' gas retail prices
in cent/kWh (15 000 kWh) (energy, system charges, taxes and surcharges)

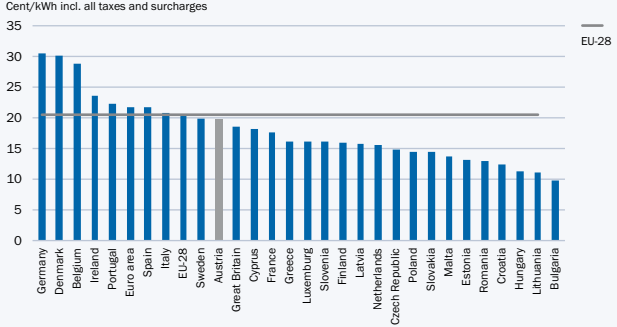


Source: E-Control, tariff calculator

Development of gas retail prices in cent/kWh (15 000 kWh)

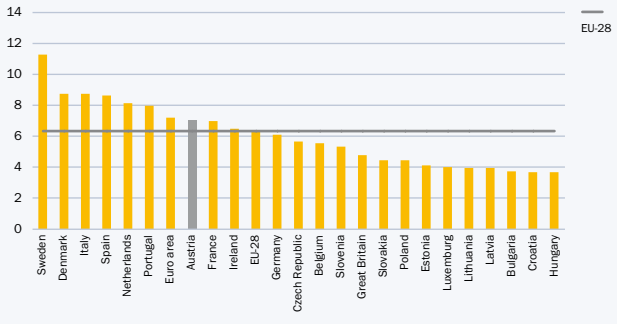
	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers		
	Minimum	Maximum	Average	1st quartile	Median	3rd quartile
H1 2013	3.250	4.020	3.809	3.381	3.590	3.754
H2 2013	3.250	4.017	3.762	3.304	3.588	3.753
H1 2014	3.090	4.007	3.685	3.175	3.445	3.632
H2 2014	3.090	4.007	3.686	3.192	3.427	3.589
H1 2015	2.990	4.007	3.664	3.150	3.330	3.526
H2 2015	2.990	4.010	3.359	3.097	3.270	3.512
H1 2016	2.690	3.830	3.442	2.792	3.117	3.363
H2 2016	2.690	3.832	3.344	2.639	3.009	3.182
H1 2017	2.690	3.700	3.155	2.599	3.007	3.187
H2 2017	2.690	3.670	3.160	2.650	2.984	3.167
H1 2018	2.690	3.670	3.150	–	–	–

Household electricity prices in Europe, H2 2017 (2 500 – 5 000 kWh)



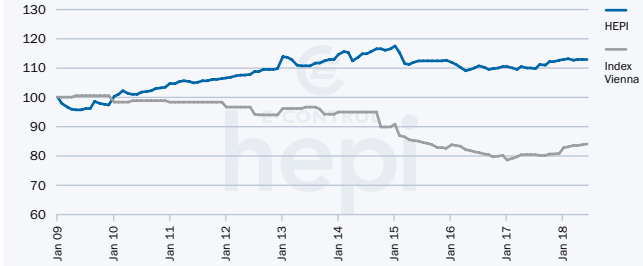
Source: Eurostat, as of 1 July 2018

Household gas prices in Europe, H2 2017 (5 555.6 – 55 556 kWh)



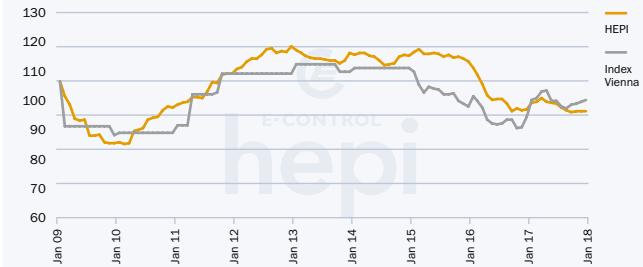
Source: Eurostat, as of 1 July 2018

Household Energy Price Index for Europe (HEPI) – electricity



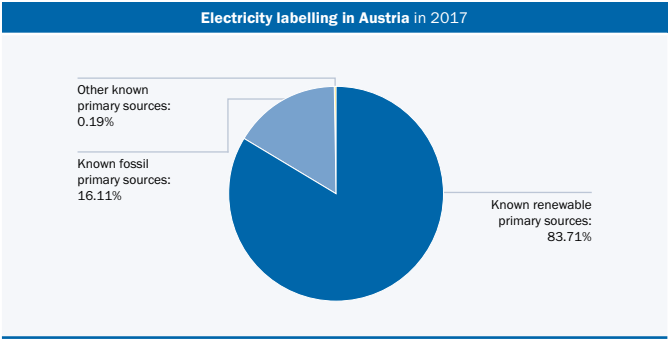
Sources: E-Control, MEKH and VaasaETT Ltd.

Household Energy Price Index for Europe (HEPI) – gas



Sources: E-Control, MEKH and VaasaETT

International electricity and gas price comparisons (pages 59 – 60)



Austrian electricity labelling in 2017

Terms and definitions

When using material from this brochure, please quote E-Control as your source of information.

Austrian electricity, natural gas and renewables statistics

The responsibility for statistical data collection on fossil fuels and electricity lies with the Austrian Federal Minister for Sustainability and Tourism.
Statistical work on electricity and gaseous energy carriers is conducted by E-Control (section 52 Electricity Act and section 59 Natural Gas Act). The details and scope of this statistical work and regulations on the publication of the results are contained in the Electricity Statistics Ordinance 2016 (issued by the Ministry of Science, Research and Economy, FLG II no 17/2016) and the Gas Statistics Ordinance 2017 (issued by E-Control's Executive Board, FLG II no 417/2017).
The results of data collection and analyses are published on our website at www.e-control.at/en/statistics.

Glossary

Final energy consumption in energy statistics is the consumption of energy for any purpose other than transformation into other forms of energy. Final energy is the useful energy available to a consumer (e.g. for heating, lighting, mechanical uses). Neither transformation losses nor transport losses or natural gas supplied to gas-fired power stations are part of final energy consumption.

Supply to consumers in gas and electricity statistics is the energy withdrawn from the grid or autogenerated by consumers (final customers) and consumed by them. The concept embraces both gas supplied to gas-fired power plants and electricity supplied to refineries. This also holds for the electricity generated by refineries in their own power plants and used to process oil.

Gross domestic consumption in energy statistics is the energy needed to cover all domestic energy demand. Apart from final energy consumption and final non-energy consumption, it includes transformation losses, own use of the energy sector and non-energetic uses of fossil fuels (e.g. the use of coal for making electrodes).
Please note that breakdown according to individual energy sources or regional breakdown of the gross domestic consumption might yield negative values where export rates are high.

Useful energy consumption in energy statistics is the final energy consumption minus consumption losses (depending on the equipment's efficiency e.g. in lighting, heating or cooling devices). Useful energy can normally be broken down into space heating and cooling, process heat (steam production and industrial furnaces), mechanical uses (stationary engines), transport, IT and lighting, and electrochemical uses.

Electricity and natural gas balances in electricity and natural gas statistics cover the respective markets and rely solely on physical flow data. Please note that the electricity balance includes the total gross electricity production at the generator terminals (i.e. also electricity produced in pumped storage plants) but also energy consumption for pumping. The natural gas balance includes all imports and exports metered at Austria's borders, and all storage movements, regardless of whether the gas is destined for domestic or foreign consumption.

Natural gas conditions

All volumes in Nm^3 refer to natural gas in normal state, i.e.

- temperature: 0 °C
- humidity: 0 percent
- absolute pressure: 1 013.25 mbar

Latest valid calorific value (kWh/Nm^3): 11.200

Public grid means the grid in the Austrian control areas APG, TIRAG (up to 2010) and VKW (incl. VIW) as well as the Austrian supply areas connected to foreign control areas.

Fossil fuels are fuels from natural resources formed from biomass through natural processes over time. The term is also used to refer to secondary fuels produced from primary fossil fuels (e.g. coke or gasoline).

Renewable energy is generated from geothermal energy, solar power or gravity, i.e. from non-finite energy sources, or from biomass as a finite energy source.
Please note that electricity statistics differentiate between (i) hydropower, (ii) wind, solar and geothermal energy, and (iii) biofuels; renewables shares are itemised according to generation types.

Biofuels as used in the Austrian Green Electricity Act are in particular the following renewable, non-fossil energy sources: biomass, wastes containing a high biogenous fractions, landfill and sewage gas, biogas, meat and bone meal, black liquor, and sewage sludge.

Units of mass and volume are physical units for the purpose of metering mass or volume in different states of matter (solid, liquid, gaseous), such as litres or cubic metres.

Energy units quantify a fuel's or energy source's energy content. Electric energy and hydropower are measured in kilowatt hours (kWh), the heat of thermal energy in calories or joule. In the interest of comparability, solid, liquid and gaseous fuels may also be measured in energy units; converting physical into energy units is achieved by means of conversion factors that relate one unit of a fuel to the heat produced from it (see the calorific values in different energy balances).

Units of measurement

1 V	=	1 volt				
1 A	=	1 ampere				
1 W	=	1 watt				
1 Hz	=	1 hertz	=	1 oscillation/sec		
1 J	=	1 joule	=	1 watt second (Ws)	=	$0.27778 \cdot 10^{-3}$ Wh
1 Wh	=	1 watt hour	=	$3.6 \cdot 10^{3}$ joule		

Most common multiple and sub-multiple prefixes

Multiple	Sub-multiple
10^{1} deca (da)	10^{-1} deci (d)
10^{2} hecto (h)	10^{-2} centi (c)
10^{3} kilo (k)	10^{-3} milli (m)
10^{6} mega (M)	10^{-6} micro (µ)
10^{9} giga (G)	10^{-9} nano (n)
10^{12} tera (T)	10^{-12} pico (p)
10^{15} peta (P)	10^{-15} femto (f)
10^{18} exa (E)	10^{-18} atto (a)

Units used

1 kV	=	1 kilovolt	=	1 000 V
1 kW	=	1 kilowatt	=	1 000 W
1 MW	=	1 megawatt	=	1 000 kW
1 GW	=	1 gigawatt	=	1 000 MW
1 TW	=	1 terawatt	=	1 000 GW

1 kWh	=	1 kilowatt hour	=	1 000 Wh
1 MWh	=	1 megawatt hour	=	1 000 kWh
1 GWh	=	1 gigawatt hour	=	1 000 MWh
1 TWh	=	1 terawatt hour	=	1 000 GWh

1 kJ	=	1 kilojoule	=	1 000 J
1 MJ	=	1 megajoule	=	1 000 kJ
1 GJ	=	1 gigajoule	=	1 000 MJ
1 TJ	=	1 terajoule	=	1 000 GJ

Multilingual terms

Deutsch	English	Français
Laufkraftwerk	run-of-river power plant	centrale gravitaire
Speicherkraftwerk	storage power plant	station de pompage-turbinage
Wasserkraftwerk	hydropower plant	centrale hydroélectrique
Steinkohle	hard coal	houille
Braunkohle	lignite	lignite
Derivate	derivative	dérivés
Erdgas	natural gas	gaz naturel
Fossile Brennstoffe	fossil fuels	combustibles fossiles
Biogene Brennstoffe	biofuels	biocombustibles
Wärmekraftwerk	thermal power plant	centrale thermique
Windkraftwerk	wind power plant	centrale éolienne
Photovoltaikanlage	solar/photovoltaic power plant	centrale photovoltaïque
Geothermie	geothermal energy	géothermie
Speicherentnahme	storage withdrawal	prélèvement
Speichereinpressung	storage injection	stockage
Eigenverbrauch	own use/consumption	usage propre
Verlust / Netzverlust	(grid) losses	pertes en ligne
Pumpstromaufwand / Verbrauch f. Pump-speicherung	consumption for pumped storage / pumping	consommation des pompes
Haushalte	households	secteur résidentiel
Sonstige Kleinkunden	other small consumers	autres clients profilés
Lastganggemessene Kunden	load-metered consumers	clients mesurés
Inlandstromverbrauch	domestic electricity consumption	consommation intérieure
Abgabe an Endkunden	supply to consumers	livraison aux consommateurs
Energetischer Endverbrauch	final energy consumption	consommation finale d'énergie
Nutzenergie(verbrauch)	useful energy (consumption)	énergie utile (consommation)
Heizwert	net calorific value	pouvoir calorifique inférieur
Brennwert	gross calorific value	pouvoir calorifique supérieur

International conversion factors

Units of mass					
To:	kg	t	lt	st	lb
From:	Multiply by:				
kg Kilogramme	**1**	0.001	9.84×10^{-4}	1.102×10^{-3}	2.2046
t Ton	1 000	**1**	0.984	1.1023	2 204.6
lg Long ton	1 016	1.016	**1**	1.120	2 240
st Short ton	907.2	0.9072	0.893	**1**	2 000
lb Pound	0.454	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}	**1**

Source: IEA

Units of energy					
To:	TJ	Gcal	Mtoe	MBtu	GWh
From:	Multiply by:				
TJ Terajoule	**1**	238.8	2.388×10^{-5}	947.8	0.2778
Gcal Gigacalorie	4.1868×10^{-3}	**1**	10^{-7}	3.968	1.163×10^{-3}
Mtoe Million tons of oil equivalent	4.1868×10^{4}	10^{07}	**1**	3.967×10^{7}	11 630
MBtu Million British thermal units	1.0551×10^{-3}	0.252	2.52×10^{-8}	**1**	2.931×10^{-4}
GWh Gigawatt hour	3.60	860	8.6×10^{-5}	3412	**1**

Source: Eurostat, IEA

Units of volume						
To:	US gal	UK gal	bbl	ft^3	l	m^3
From:	Multiply by:					
US gal US gallon	**1**	0.8327	0.02381	0.1337	3.785	0.0038
UK gal UK gallon	1.201	**1**	0.02859	0.1605	4.546	0.0045
bbl Barrel	42.0	34.97	**1**	5.615	159	0.159
ft^3 Cubic foot	7.48	6.229	0.1781	**1**	28.3	0.0283
l Litre	0.2642	0.22	0.0063	0.0353	**1**	0.001
m^3 Cubic metre	264.2	220	6.289	35.3147	1 000	**1**

Source: IEA

Calorific values in the Austrian energy balance

Statistics Austria, arithmetic means over the past five years

Energy source	Gigajoule / ...	Gross domestic consumption	Final energy consumption
Hard coal	t	28.49	27.711
Lignite	t	20.26	20.259
Brown coal briquettes	t	19.70	19.700
Coke oven coke	t	28.80	28.802
Crude oil	t	42.50	–
Petrol	t	41.34	41.450
Diesel	t	42.44	42.444
Gas oil	t	42.85	42.852
Fuel oil	t	40.76	41.477
Natural gas	1 000 cu m	36.28	36.278
Industrial waste	t	13.14	15.226
Fuelwood	t	14.31	14.311
Biofuels	t	11.90	13.233
Geothermal energy	MWh	3.60	3.600
District heat	MWh	–	3.600
Hydropower	MWh	3.60	–
Wind and photovoltaics	MWh	3.60	–
Electric energy	MWh	3.60	3.600

Source: Statistics Austria

Notes

Editorial

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