

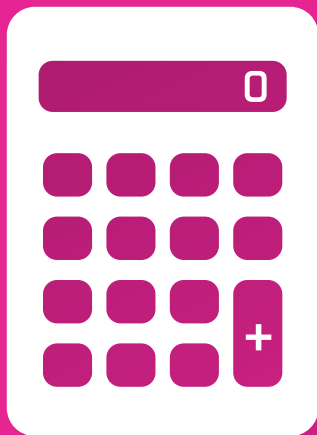


KEY STATISTICS 2016

E-CONTROL

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WHEREVER THE NUMBERS DO THE TALKING.



WORKING FOR YOU –
WHEREVER YOU NEED ENERGY.

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Preface

Energie-Control Austria (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.



Andreas Eigenbauer
Executive Director
Energie-Control Austria



Wolfgang Urbantschitsch
Executive Director
Energie-Control Austria

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 Science, Research and Economy. 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 Austria.

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 focuses 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 at energetic use in chemical processes).

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

The economic situation in 2015

The Austrian economy expanded by 0.9% in real terms in 2015. Consumer prices rose by 0.9% also. In this, electricity and gas prices had a dampening effect.

Consumption trends in 2015

Both electricity and gas consumption were up in 2015. Natural gas use increased by 7.0% to reach 84.4 TWh or 7.5 billion (bn) normal cubic metres (n cu m). This meant a break in the contracting consumption trend that had been ongoing since 2011 and an approximate return to 2002 consumption levels. Electricity consumption edged up by 1.5% and stood at 70.0 TWh, i.e. the upwards tendency of the last 20 years (only reversed in 2009 and 2014) continued.

Electricity consumption among small consumers increased by 1.1% on average and was much lower than the 2.5% increase observed for medium-sized and large industrial enterprises. This trend was reversed for natural gas, where small consumers used 9.2% more and large ones 6.9% than previously. For the most part, this is due to more space heating, both at consumers' homes and in district heating facilities.

Energy inputs in 2015

Natural gas inputs were influenced by three main factors in 2015: domestic production continued to contract, though slightly (by 4.4%); net storage movements were negative (but had been positive the previous year), i.e. more gas was withdrawn from storage than injected; and physical net imports fell drastically (by 21.9%).

Domestic electricity production went sideways (with a minus of 0.3%), resulting from a 4.2 TWh or 9.5% decrease in hydro, a 2.9 TWh or 19.2% increase in thermal and a 1.1 TWh or 25.3% rise in wind power production. As consumption had upped by approximately 1.0 TWh, 0.8 TWh or 8.4% more net imports were needed to cover demand.

Storage situation at year-end 2015

Overall, gas storage facilities with a capacity of 92.7 TWh or 8.3 bn n cu m are located on Austrian territory. The hourly withdrawal capacity is 44.9 GWh or 4 million (m) n cu m.

Austrian natural gas storage held 55.6 TWh or 5.0 bn n cu m at year-end 2015, making for a 60.4% fill level. This corresponds to a year-on-year decrease by about 10 percentage points but still covers close to two-thirds (65.8%, to be precise) of domestic gas consumption in 2015.

Austrian electricity storage has an overall capacity of 3.2 TWh and installed capacity is about 8 GW.

Fill levels at year-end 2015 corresponded to 1.6 TWh or 51.4%. While this is a 15-year low at year-end, it is explained by less natural water inputs due to decreased precipitation during the last months of the year.

Market structures and consumer behaviour in 2015

About 94% of the 1.3 m customers (metering points) on the Austrian natural gas market are households, but they only account for just over one-fifth (about 21%) of consumption. Load-metered consumers (including gas-fired power plant) make for 75% of the natural gas consumed.

A little over 46,000 natural gas consumers (metering points) switched suppliers in 2015, which results in a 3.4% switching rate. Most switchers were households, but a switching rate of 5.0% among load-metered consumers confirms that this group is more dynamic.

There are just over 6 m electricity metering points in Austria (but many consumers have more than one meter). More than 70% of these are households and about one-quarter are small businesses and agriculture. Industry accounts for less than 1% of metering points. Looking at domestic consumption, the picture is reversed: industrial enterprises account for about 60%, households just over 20% and other enterprises a little less than 20%.

Overall, about 153,000 electricity consumers (metering points) switched suppliers in 2015, i.e. the overall switching rate was 2.5%. As in gas, large (load-metered) consumers were the most dynamic group, with a rate of 7.1%.

Retail and wholesale price developments in 2015

Electricity and gas wholesale prices were down in 2015. Base day ahead prices retracted by just over 1 €/MWh, peak prices by 1.7 €/MWh. Gas prices at CEGH were 1.6 €/MWh lower than in 2014. Retail prices offered by local players (leaving grid charges and taxes aside) were down by 4 €/MWh for electricity and by 3 €/MWh for gas.

Overview

Economic indicators

Consumer price index, Jan 2005 = 100						
	Total		Electricity		Natural gas	
	Annual average	Change in % (*)	Annual average	Change in % (*)	Annual average	Change in % (*)
1995	84.4		71.4		70.8	
2000	90.4	1.4	80.5	2.6	79.9	2.6
2005	100.0	2.1	100.0	4.8	100.0	5.0
2010	109.5	1.8	120.9	1.0	120.6	-4.5
2013	118.2	2.0	127.4	4.4	137.3	-0.2
2014	120.1	1.6	127.4	0.0	137.0	-0.2
2015	121.2	0.9	128.3	0.7	136.3	-0.5

(*) average or annual change rates

Source: Statistics Austria

Gross domestic product		
	m€ (rate of 2010)	Change in % (*)
1995	218 615	
2000	253 713	3.2
2005	276 290	1.8
2010	294 627	1.9
2013	305 539	0.1
2014	307 509	0.6
2015	310 470	1.0

(*) average or annual change rates

Source: Statistics Austria, WIFO, OeNB

The economic context for the electricity and gas statistics

Population, annual average		
	Population numbers	Change in % (*)
1990	7 677 850	0.3
1995	7 948 278	0.7
2000	8 011 566	0.2
2005	8 225 278	0.5
2010	8 361 069	0.3
2013	8 477 230	0.6
2014	8 543 932	0.8
2015	8 629 519	1.0

(*) average or annual change rates

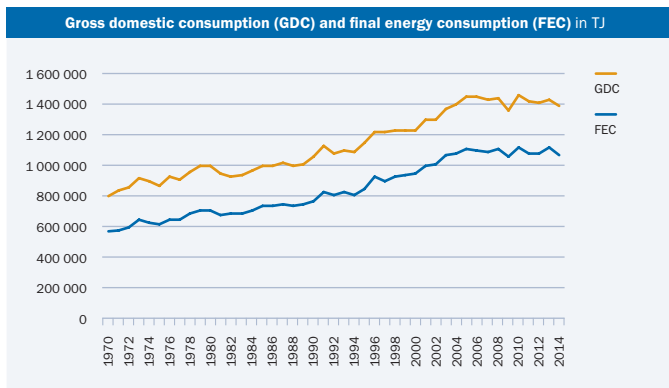
Source: Statistics Austria

Households in 1 000				
	Single-person households	Multi-person households	Total	Average household size (persons)
1990	814	2 099	2 913	2.61
1995	893	2 201	3 093	2.54
2000	977	2 260	3 237	2.45
2005	1 198	2 277	3 475	2.34
2010	1 300	2 324	3 624	2.28
2013	1 368	2 355	3 722	2.24
2014	1 395	2 374	3 769	2.23
2015	1 418	2 398	3 817	2.22

Source: Statistics Austria

Relevant Austrian population indicators

Energy industry indicators



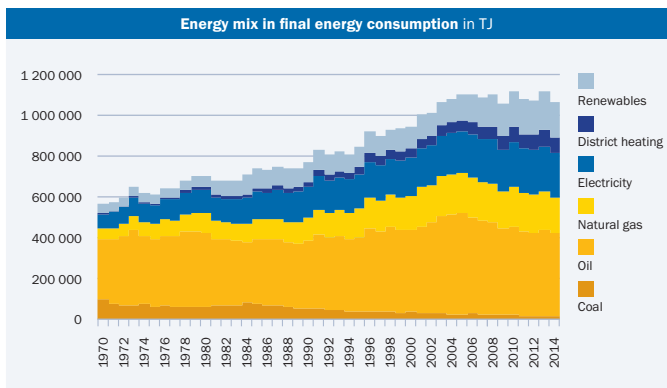
Source: Statistics Austria

Gross domestic consumption and final energy consumption in TJ		
	Gross domestic consumption	Final energy consumption
1990	1 052 191	766 506
1995	1 139 768	844 822
2000	1 224 477	941 289
2005	1 446 110	1 102 661
2010	1 457 387	1 116 011
2012	1 400 856	1 072 742
2013	1 426 333	1 110 683
2014	1 380 811	1 063 181

Source: Statistics Austria

Main economic and energy consumption indicators

ENERGY BALANCE

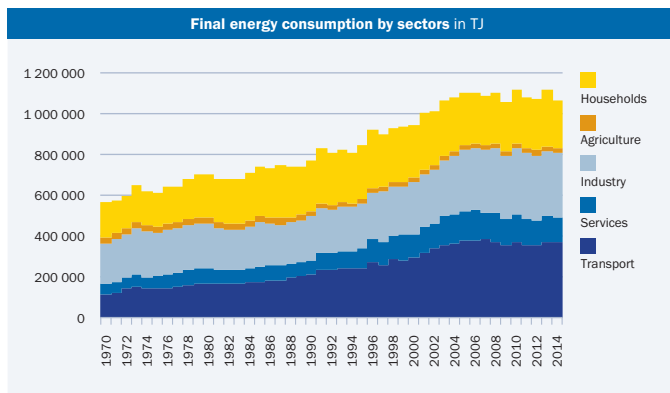


Source: Statistics Austria

	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
1990	53 338	327 576	114 375	152 452	25 636	93 130	766 506
1995	35 619	364 906	144 612	166 123	35 515	98 047	844 822
2000	37 030	401 577	167 475	183 336	42 699	109 172	941 289
2005	25 097	496 129	194 265	205 418	53 754	127 997	1 102 661
2010	19 917	434 229	194 524	215 063	77 127	175 150	1 116 011
2012	18 409	406 133	183 418	217 701	77 206	169 875	1 072 742
2013	18 586	415 419	191 014	219 645	79 892	186 127	1 110 683
2014	18 401	402 588	175 884	215 102	72 950	178 256	1 063 181

Source: Statistics Austria

The input side of the Austrian energy balance



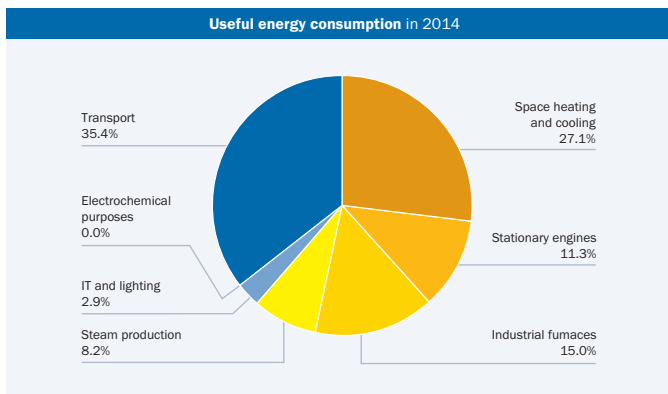
Source: Statistics Austria

Final energy consumption by sectors in TJ						
	Households	Agriculture	Industry	Services	Transport	Total
1990	243 488	24 492	216 559	73 130	208 836	766 505
1995	262 860	22 492	218 395	96 385	244 688	844 820
2000	259 569	22 206	253 627	113 161	292 726	941 289
2005	258 094	22 917	300 047	142 350	379 252	1 102 661
2010	266 298	23 487	320 151	139 358	366 717	1 116 011
2012	255 146	23 554	315 509	124 556	353 976	1 072 742
2013	272 903	23 631	318 838	123 868	371 442	1 110 683
2014	237 537	22 536	315 459	121 136	366 513	1 063 181

Source: Statistics Austria

The output side of the Austrian energy balance

USEFUL ENERGY



Source: Statistics Austria

Useful energy consumption in 2014		
	TJ	Share in %
Space heating and cooling	288 241	27.1
Stationary engines (a)	119 843	11.3
Industrial furnaces (b)	159 722	15.0
Steam production	87 615	8.2
IT and lighting	31 350	2.9
Electrochemical purposes	373	0.0
Transport	376 036	35.4
Total	1 063 181	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

Natural gas – useful energy consumption in 2014			
	TJ	Share in %	Share in total in %
Space heating and cooling	70 410	40.0	24.4
Steam production	40 299	22.9	46.0
Industrial furnaces (a)	50 600	28.8	31.7
Stationary engines (b)	4 794	2.7	4.0
Transport	9 781	5.6	2.6
IT and lighting	0	0.0	0.0
Electrochemical purposes	0	0.0	0.0
Total	175 884	100.0	16.5

(a) Warm water and cooking

(b) Cooling and freezing, electrical appliances

Source: Statistics Austria

Electricity – useful energy consumption in 2014			
	TJ	Share in %	Share in total in %
Space heating and cooling	24 960	11.6	8.7
Steam production	886	0.4	1.0
Industrial furnaces (a)	47 983	22.3	30.0
Stationary engines (b)	98 684	45.9	82.3
Transport	10 865	5.1	2.9
IT and lighting	31 350	14.6	100.0
Electrochemical purposes	373	0.2	100.0
Total	215 102	100.0	20.2

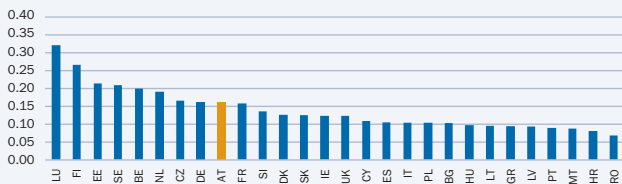
(a) Warm water and cooking

(b) Cooling and freezing, electrical appliances

Source: Statistics Austria

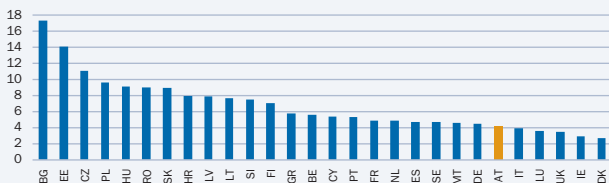
INTERNATIONAL ENERGY INDICATORS

Per capita energy consumption in EU countries in 2014, TJ/inhabitant



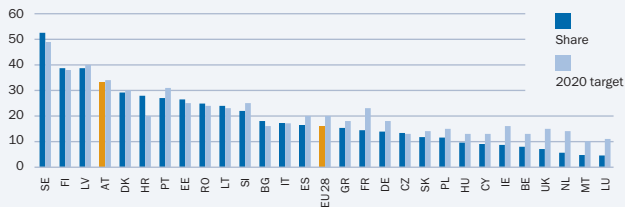
Source: Eurostat

Gross domestic consumption of energy divided by GDP in 2014, TJ/m€



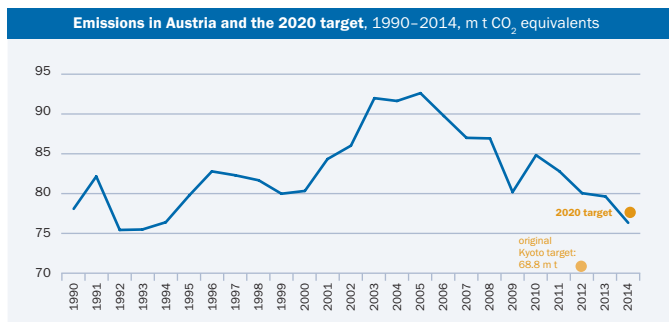
Source: Eurostat

Renewables shares in the EU in 2014 and the 2020 target, %

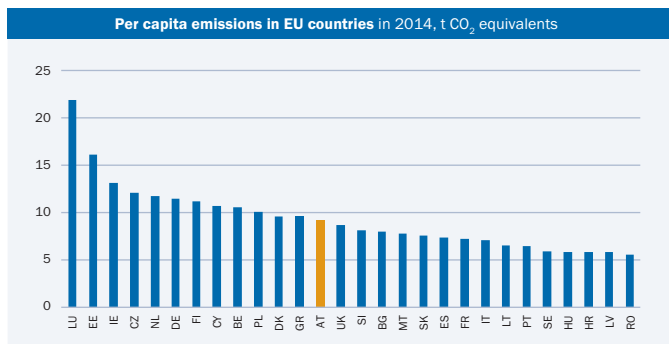


Source: Eurostat

GREENHOUSE GAS EMISSIONS



Source: UNFCCC

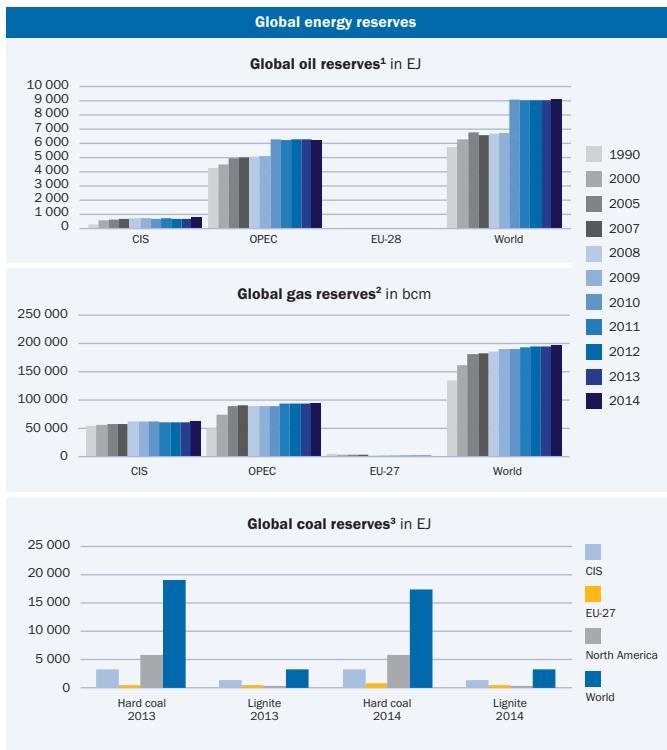


Source: Eurostat

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

Primary sources of energy across the globe (right)

Energy reserves



¹ Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2015

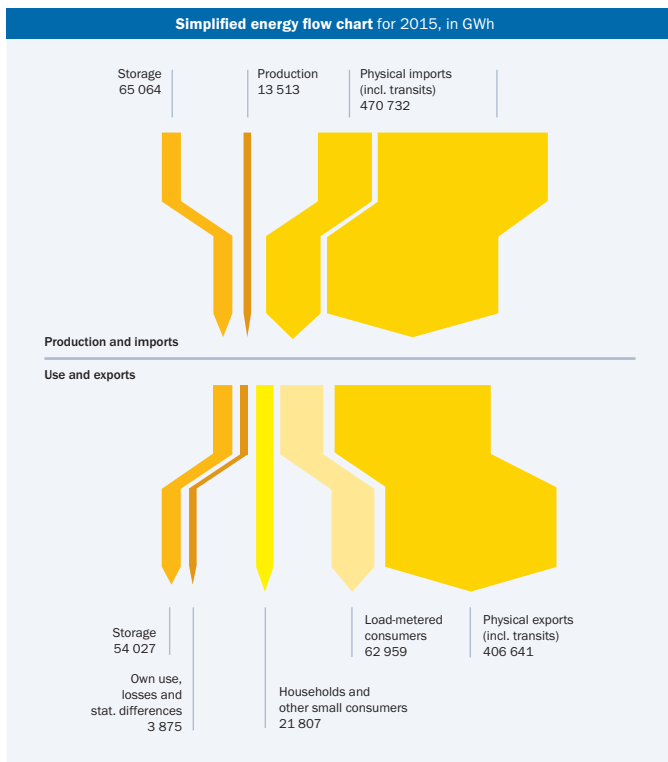
² Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2015

Please note: 2010 figures include unconventional gas sources.

³ Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2015

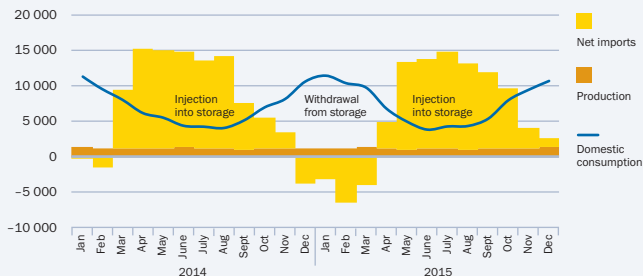
Operational statistics

Natural gas in Austria



Flow chart for natural gas in Austria

Natural gas balance in GWh



Natural gas balance for 2015

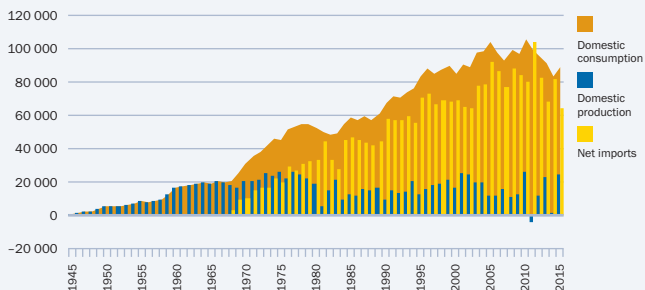
	m Nm ³	GWh	Year-on-year change in %
Supply to consumers (a)	7 535	84 394	7.0
Own use and losses (b) and statistical differences (c)	379	4 246	—
Domestic consumption	7 914	88 641	6.1
Injection into storage (d)	4 824	54 027	-18.2
Exports (d)	36 307	406 641	6.6
Consumption and exports = production and imports	49 045	549 309	3.5
Imports (d)	42 030	470 732	1.6
Production (d)	1 197	13 406	-4.4
Injection of biogas (d)	9	106	21.0
Withdrawal from storage (d)	5 809	65 064	21.7

(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**

	Net imports	Domestic production (a)	Domestic consumption	Own use and losses (b)	Statistical difference (c)	Supply to consumers (d)
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
2013	86 572	-207	4 665	91 031	67 906	23 125
2014	78 907	188	4 448	83 543	82 015	1 528
2015	84 394	-227	4 473	88 641	64 091	24 550

(a) Production and net storage movements

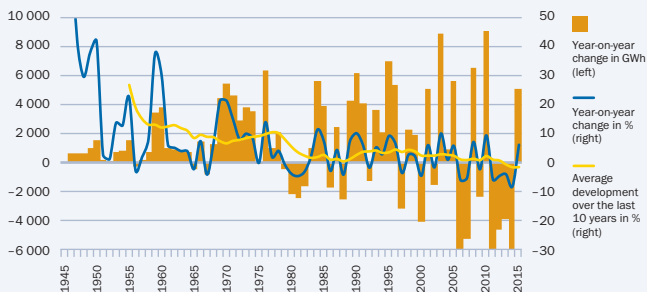
(b) For production, storage and transports (including transits)

(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 %



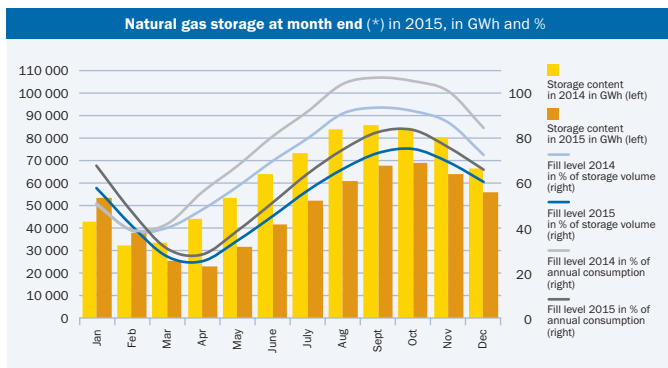
Physical imports and exports of natural gas in 2015

	Imports (*)		Exports (*)	
	in m Nm ³	in GWh	in m Nm ³	in GWh
Germany	9 008	100 888	3 110	34 836
Switzerland			61	687
Italy			27 913	312 620
Slovenia			1 741	19 501
Hungary			2 642	29 588
Slovakia	33 022	369 843	840	9 409
Czech Republic				
Total	42 030	470 732	36 307	406 641

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

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

Natural gas infrastructure in Austria



(*) 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
2013	83 384	33 134	40 538
2014	91 983	36 148	44 684
2015	92 685	36 272	44 817

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

Domestic gas production in 2015		
	Max. production rate in MWh per hour	Max. production rate in Nm ³ per hour
2005	n.a.	n.a.
2010	2 319	207
2013	2 589	231
2014	1 957	175
2015	1 982	177

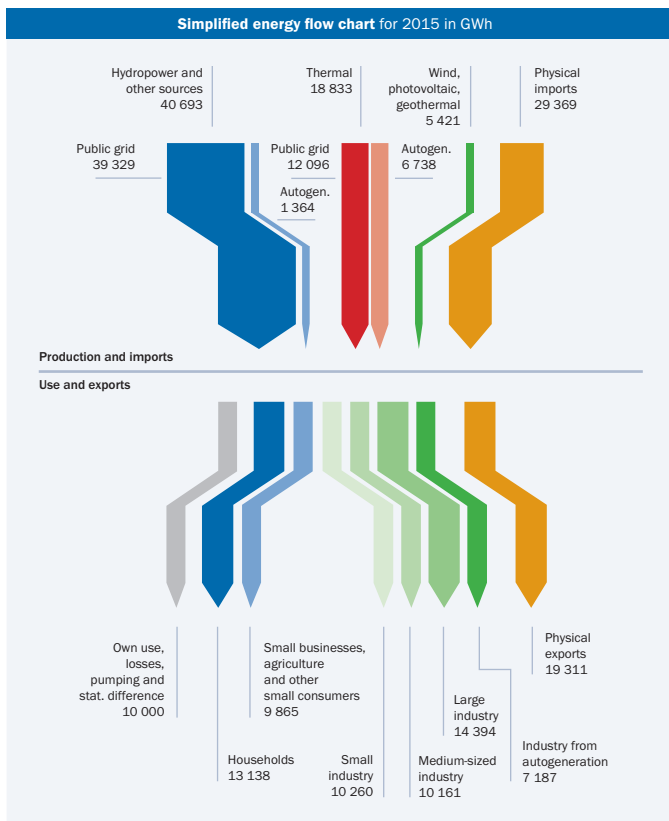
Network length at year end in km			
	Grid level 1, including transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
2000 (*)	2 377	3 266	n.a.
2005	2 757	3 425	30 195
2010	3 143	3 685	33 027
2013	3 109	3 990	34 476
2014	3 129	4 041	34 758
2015	3 089	4 096	35 115

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

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

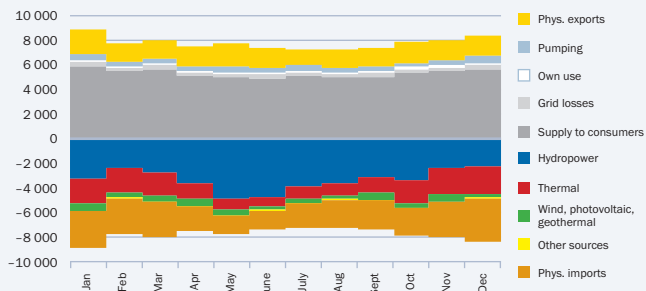
Electricity in Austria

(total electricity supply)



Electricity flow chart for Austria

Electricity balance 2015, in GWh

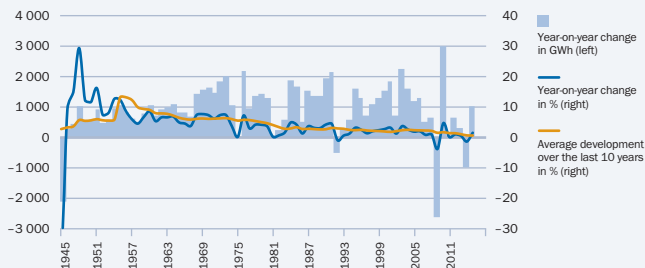


Electricity balance 2015

		2014 in GWh	2015 in GWh	Year-on-year change in GWh in %	
Supply to consumers (1)		63 658	64 604	945	1.5
Grid losses		3 410	3 467	57	1.7
Own use		1 874	1 883	9	0.5
Domestic consumption		68 942	69 954	1 011	1.5
Pumping		5 466	5 051	-415	-7.6
Physical exports		17 437	19 311	1 874	10.7
Use and exports = generation and imports		91 846	94 316	2 470	2.7
Gross generation	Hydro	44 730	40 488	-4 241	-9.5
	Thermal	15 932	18 833	2 902	18.2
	Renewables (2)	4 326	5 421	1 095	25.3
	Other sources	147	205		
Physical imports		26 712	29 369	2 657	9.9

(1) Includes final energy consumption and the electricity consumption of the non-electricity energy sector

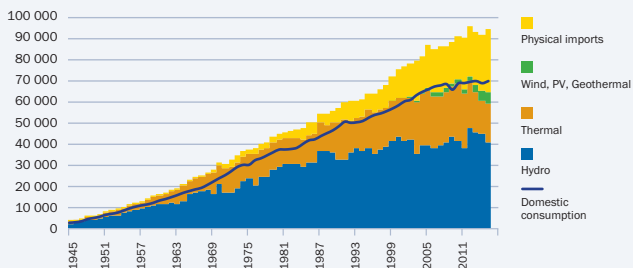
(2) Photovoltaics, wind and geothermal

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
2013	64 422	1 971	3 541	69 934	5 374	17 689	92 997
2014	63 658	1 874	3 410	68 942	5 466	17 437	91 846
2015	64 604	1 883	3 467	69 954	5 051	19 311	94 316

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
2013	45 671	18 775	3 458	134	68 037	24 960	92 997
2014	44 730	15 932	4 326	147	65 134	26 712	91 846
2015	40 488	18 833	5 421	205	64 947	29 369	94 316

Gross generation mix in 2015							
Energy source			GWh	Share in %			
Hydropower	Run of river	over 10 MW	21 904	33.7	54.1		
		up to 10 MW	4 841	7.5	12.0		
	Pumped storage	over 10 MW	13 227	20.4	32.7		
		up to 10 MW	516	0.8	1.3		
	Total hydro			40 488	62.3	100.0	
Thermal	Fossil fuels and derivatives	Hard coal	2 973	4.6		15.8	
		Lignite	—	—	—	—	
		Coal derivatives (1)	2 101	3.2		11.2	
		Oil derivatives (1)	858	1.3		4.6	
		Natural gas	7 738	11.9		41.1	
		Total	13 671	21.0		72.6	
	Biofuels	Solid (2)	2 573	4.0		13.7	
		Liquid (2)	0	0.0		0.0	
		Gaseous (2)	589	0.9		3.1	
		Sewage and landfill gases (2)	35	0.1		0.2	
		Total (2)	3 197	4.9		17.0	
	Other biofuels (3)		1 149	1.8		6.1	
	Other fuels		817	1.3		4.3	
	Total thermal (of which CHP)		18 833 (15 929)	29.0 (24.5)		100.0 (84.6)	
	Renewables	Wind (4)		4 836	7.4	89.2	
		Photovoltaics (4)		585	0.9	10.8	
Geothermal (4)		0	0.0	0.0			
Total renewables (4)		5 421	8.3	100.0			
Other sources (5)			205	0.3			
Total			64 947	100.0			

(1) Coal and oil derivatives used for electricity generation

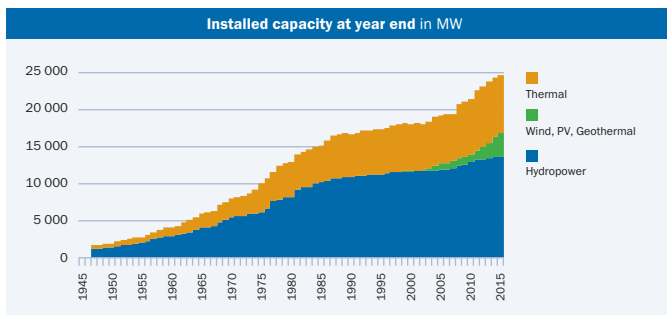
(2) Only biofuels as defined by Austrian law

(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

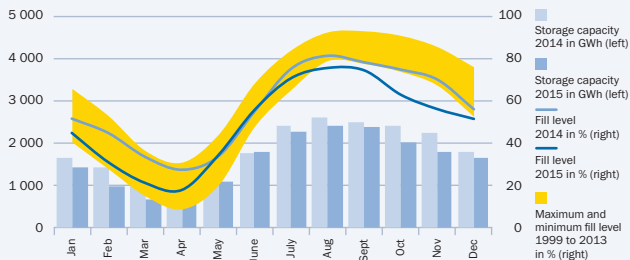
Power plants in Austria



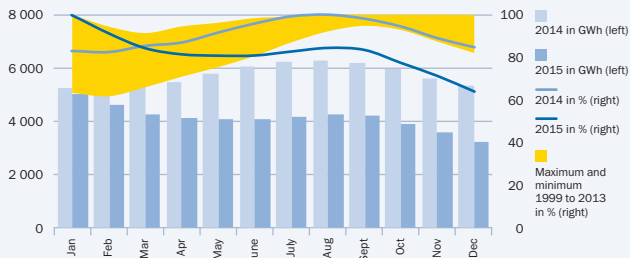
Installed capacity at year end in MW							
Gross maximum capacity							
	Hydropower plants			Wind, PV, Geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
1990	—	—	10 947	—	5 740	16 687	16 233
1995	—	—	11 306	—	6 134	17 440	16 959
2000	5 256	6 407	11 664	49	6 315	18 028	17 532
2005	5 318	6 519	11 837	849	6 527	19 213	18 703
2010	5 396	7 524	12 919	1 054	7 431	21 404	20 829
2013	5 573	7 847	13 420	2 142	8 276	23 839	23 208
2014	5 618	7 963	13 581	2 697	7 977	24 256	23 641
2015	5 662	7 994	13 657	3 212	7 768	24 637	24 035

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

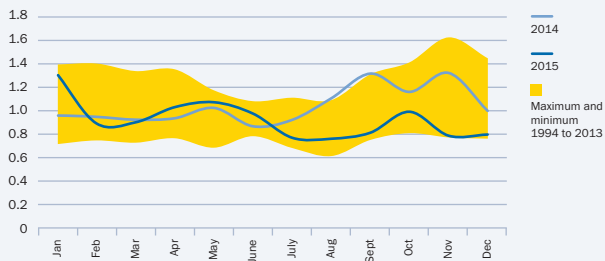
Storage capacity and fill levels at month end – large reservoirs of public generators, in GWh and %



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

2014	2015	1994 to 2013 maximum	1994 to 2013 minimum
1.03	0.92	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
2013	81.8	16.5	14.9	85.5	19.7	3.6
2014	83.0	15.5	13.5	86.2	19.6	5.0
2015	80.4	12.1	13.7	92.7	17.9	2.3

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

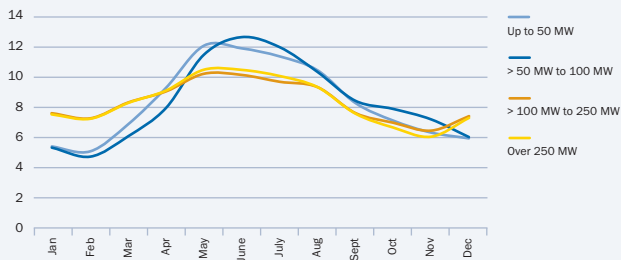
Combined heat and power (CHP)						
	Efficiency of thermal power plants in %			Capacity of thermal power plants in MW		
	With CHP		Without CHP	With CHP		Without CHP
	Overall efficiency (1)	Effective electric efficiency (2)	Efficiency (3)	Thermal capacity	Maximum capacity	Maximum capacity
2000	68.9	49.5	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
2013	72.8	52.6	38.7	9 210	6 582	1 694
2014	72.6	51.2	37.5	8 960	6 285	1 692
2015	71.9	52.3	37.8	8 980	6 075	1 693

(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

Share of monthly standard capacity in 2015 annual values – run-of-river plants of public generators (*), in %



(*) Power plants with at least 10 MW maximum capacity

Firm capacity in 2015 – 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	204	250	—	—	454
Run-of-river plants without pondage	126	83	444	310	963
Total	330	333	444	310	1 418
Share in maximum capacity in %					
Run-of-river plants with pondage	51.9	46.3	—	—	48.6
Run-of-river plants without pondage	34.1	53.6	38.5	34.1	37.3
Total	43.3	47.8	38.5	34.1	40.3

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

Public grid in Austria

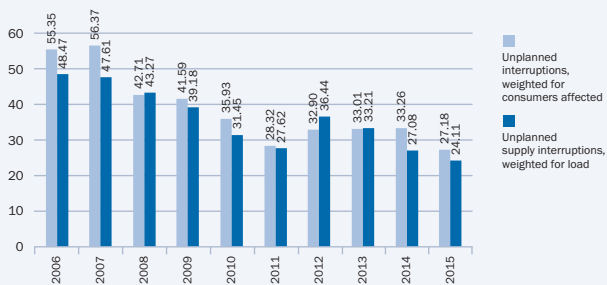
Route length (*) of the public grid at year-end 2015					
Voltage level	Overhead lines		Cables		Total
	km	Share in %	km	Share in %	km
380 kV	1 366	0.6	55	0.0	1 421
220 kV	1 856	0.8	7	0.0	1 862
110 kV	6 021	2.5	615	0.3	6 636
1 kV to 110 kV	26 367	11.0	39 965	16.7	66 333
Up to 1 kV	33 738	14.1	129 166	54.0	162 904
Total	69 348	29.0	169 808	71.0	239 156

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

High voltage substations in the public grid at year-end 2015		
Voltage level	Number of transformers	Total capacity in MVA
Primary voltage up to 200 kV	1 005	41 989
Primary voltage over 200 kV	84	29 885
High voltage to high, medium and low voltage	1 089	71 874

Medium voltage substations in the public grid at year-end 2015		
Voltage level	Number of transformers	Total capacity in MVA
Medium voltage to medium and low voltage	77 872	31 087

Interruption of electricity supply, in minutes



Quality of electricity supply in Austria

Market statistics

Austrian gas market

Consumption structure					
Supply to consumers					
Consumer category	Unit	2014	2015	Average (*)	Share (*)
Households	GWh	16 360	17 819	17 707	21.2%
Other small consumers	GWh	3 609	3 988	4 025	4.8%
Load-metered consumers	GWh	58 908	62 959	61 661	73.9%
Statistical difference	GWh	31	-372		
Total supply to consumers	GWh	78 907	84 394	83 394	100.0%
Number of metering points (MP)					
Consumer category	Unit	2014	2015	Average (*)	Share (*)
Households	1 000	1 271	1 268	1 270	94.2%
Other small consumers	1 000	70	70	70	5.2%
Load-metered consumers	1 000	8	8	8	0.6%
Total number of metering points	1 000	1 349	1 346	1 349	100.0%
Average consumption					
Consumer category	Unit	2014	2015	Average (*)	
Households	kWh/MP	12 873	14 048	13 938	
Other small consumers	kWh/MP	51 436	56 972	57 276	
Load-metered consumers	kWh/MP	7 503 207	7 978 569	7 889 762	
Total	kWh/MP	58 476	62 684	61 840	

(*) 3-year average (2013 – 2015)

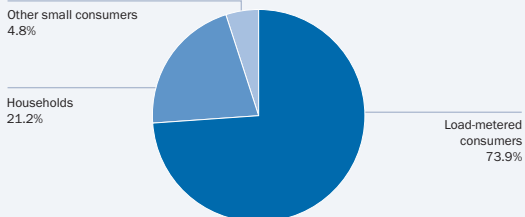
Households: Consumers with a standardised load profile marked HE, HM, PK or PW

Other small consumers: Consumers with a standardised load profile marked HG or PG

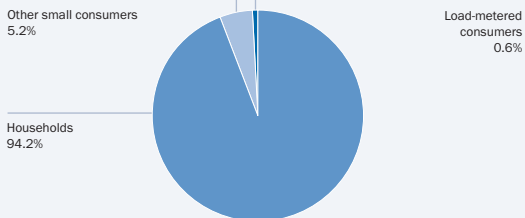
Statistical difference: Difference between total metered consumption and individual reporting per consumer category

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

Consumption structure – supply to consumers (5-year average)



Consumption structure – number of metering points (5-year average)



Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2014	2015	Average (*)	Share (*)
Burgenland		2 150	2 229	2 226	2.7%
Carinthia		2 121	2 201	2 172	2.6%
Lower Austria		17 047	18 621	17 932	21.5%
Upper Austria		21 446	21 283	21 849	26.2%
Salzburg		2 658	2 867	2 881	3.5%
Styria		10 956	12 753	11 997	14.4%
Tyrol		3 572	3 918	3 768	4.5%
Vorarlberg		2 079	2 280	2 236	2.7%
Vienna		16 849	18 613	18 332	22.0%
Austria	Statistical difference	31	-372	—	—
	Total supply to consumers	78 907	84 394	83 394	100.0%

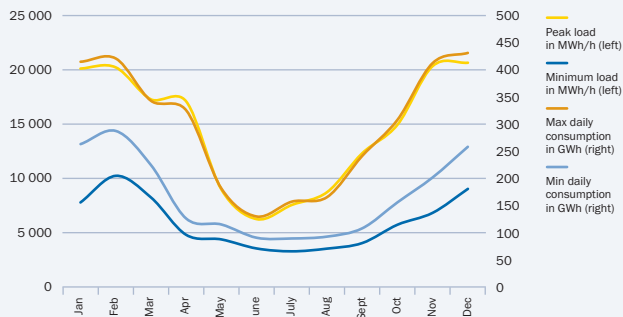
(*) 3-year average (2013 – 2015)

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		2014	2015	Average (*)	Share (*)
Burgenland		51	51	51	3.8%
Carinthia		14	14	14	1.0%
Lower Austria		293	293	293	21.7%
Upper Austria		148	146	147	10.9%
Salzburg		36	36	36	2.7%
Styria		67	67	67	5.0%
Tyrol		47	48	46	3.4%
Vorarlberg		35	35	35	2.6%
Vienna		659	656	660	48.9%
Austria		1 349	1 346	1 349	100.0%

(*) 3-year average (2013 – 2015)

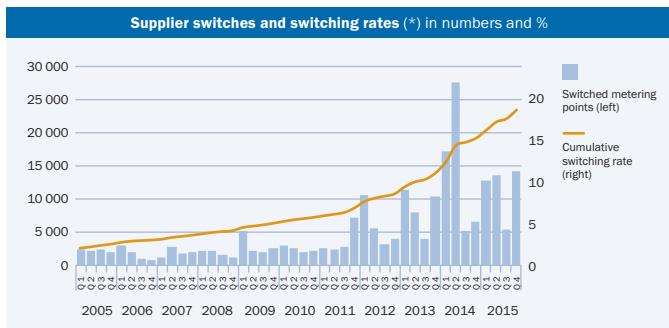
Load indicators for 2015 in MWh/h and GWh



Load indicators

	Annual peak load	Annual minimum load	Maximum daily minimum load	Maximum daily consumption	Minimum daily consumption	Peak load utilisation period
Year	MWh/h	MWh/h	MWh/h	GWh	GWh	h
2011	24 688	3 834	18 756	523	102	3 874
2012	28 280	3 945	22 296	615	100	3 225
2013	23 871	3 153	16 033	489	80	3 640
2014	20 291	3 674	14 679	428	94	3 889
2015	20 684	3 310	14 180	432	90	4 080

Load indicators of natural gas supply in Austria

THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES

(*) By number of metering points

Supplier switches and switching rates (*)					
	2005	2010	2013	2014	2015
Number of supplier switches					
Households	8 058	8 018	31 051	53 916	42 662
Other small consumers	754	1 557	2 370	2 444	3 002
Load-metered consumers	83	224	428	417	395
Total	8 895	9 799	33 849	56 777	46 059
Switching rates in %					
Households	0.6	0.6	2.4	4.2	3.4
Other small consumers	1.1	2.2	3.4	3.5	4.3
Load-metered consumers	3.1	3.6	5.6	5.3	5.0
Total	0.7	0.7	2.5	4.2	3.4

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2010	2013	2014	2015
Burgenland	50	139	1 056	1 332	1 160
Carinthia	37	28	213	524	585
Lower Austria	2 180	3 142	11 003	16 020	12 557
Upper Austria	1 273	1 582	6 174	9 791	7 972
Salzburg	78	65	527	495	568
Styria	158	643	1 851	4 026	3 172
Tyrol	—	2	29	255	400
Vorarlberg	—	2	117	136	304
Vienna	5 119	4 196	12 879	24 198	19 341
Austria	8 855	9 799	33 849	56 777	46 059

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2010	2013	2014	2015
Burgenland	0.1	0.3	2.1	2.6	2.3
Carinthia	0.3	0.2	1.5	3.8	4.2
Lower Austria	0.8	1.1	3.8	5.5	4.3
Upper Austria	0.9	1.1	4.2	6.6	5.5
Salzburg	0.3	0.2	1.5	1.4	1.6
Styria	0.3	1.0	2.8	6.0	4.7
Tyrol	0.0	0.0	0.1	0.5	0.8
Vorarlberg	0.0	0.0	0.3	0.4	0.9
Vienna	0.7	0.6	1.9	3.7	2.9
Austria	0.7	0.7	2.5	4.2	3.4

(*) By number of metering points

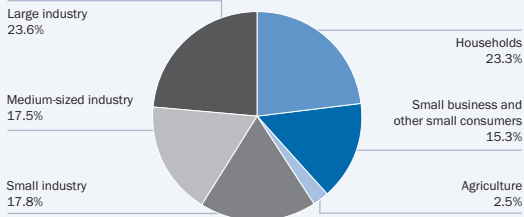
Gas switching rates (pages 40 – 41)

Austrian electricity market (public grid)

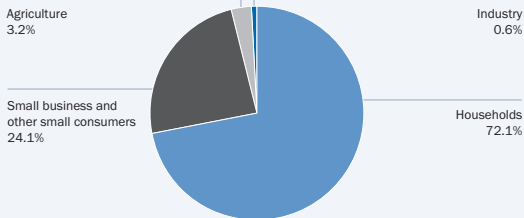
Consumption structure					
Supply to consumers					
Consumer category	Unit	2014	2015	Average (*)	Share (*)
Households	GWh	13 008	13 138	13 218	23.3%
Small business and other small consumers	GWh	8 406	8 458	8 658	15.3%
Agriculture	GWh	1 396	1 407	1 428	2.5%
Small industry	GWh	10 106	10 260	10 070	17.8%
Medium-sized industry	GWh	9 898	10 161	9 922	17.5%
Large industry	GWh	14 052	14 394	13 342	23.6%
Statistical difference	GWh	-399	-401	—	—
Total supply to consumers	GWh	56 466	57 417	56 638	100.0%
Number of metering points (MP)					
Consumer category	Unit	2014	2015	Average (*)	Share (*)
Households	1 000	4 356	4 369	4 302	72.1%
Small business and other small consumers	1 000	1 424	1 444	1 434	24.1%
Agriculture	1 000	191	188	191	3.2%
Small industry	1 000	36	36	34	0.6%
Medium-sized industry	1 000	2	2	2	0.0%
Large industry	1 000	0	0	0	0.0%
Total number of metering points	1 000	6 008	6 039	5 963	100.0%
Average consumption					
Consumer category	Unit	2014	2015	Average (*)	
Households	kWh/MP	2 986	3 007	3 073	
Small business and other small consumers	kWh/MP	5 903	5 858	6 036	
Agriculture	kWh/MP	7 323	7 494	7 483	
Small industry	kWh/MP	284 235	283 379	292 285	
Medium-sized industry	kWh/MP	5 228 700	5 116 334	5 237 835	
Large industry	kWh/MP	70 610 777	68 870 617	65 786 544	
Total	kWh/MP	9 398	9 508	9 498	

(*) 2011 – 2015 average

Consumption structure – supply to consumers (5-year average)



Consumption structure – number of metering points (5-year average)



Households: Consumers with a standardised load profile marked H

Small business and other small consumers: Consumers with a standardised load profile marked G or U

Agriculture: Consumers with a standardised load profile marked L

Small industry: Load-metered consumers with an annual withdrawal from the public grid of up to 2 GWh

Medium-sized industry: Load-metered consumers with an annual withdrawal from the public grid between 2 GWh and 20 GWh

Large industry: Load-metered consumers with an annual withdrawal from the public grid of more than 20 GWh

Statistical difference: Difference between metered consumption and individual reporting. Negative values may result from discrepancies between the settlement period and calendar year

Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2014	2015	Average (*)	Share (*)
Burgenland		1 594	1 624	1 605	2.8%
Carinthia		4 097	4 199	4 144	7.3%
Lower Austria		8 008	8 245	8 025	14.2%
Upper Austria		10 995	10 953	10 496	18.5%
Salzburg		3 483	3 548	3 571	6.3%
Styria		8 573	8 690	8 511	15.0%
Tyrol		5 490	5 606	5 557	9.8%
Vorarlberg		2 552	2 593	2 577	4.5%
Vienna		12 074	12 359	12 152	21.5%
Austria	Statistical difference	-399	-401	—	—
	Total supply to consumers	56 466	57 417	56 638	100.0%

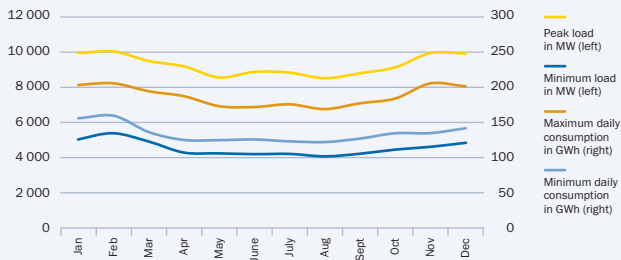
(*) 2011 – 2015 average

Statistical difference: Difference between metered consumption and individual reporting per consumer category.
Negative values may result from discrepancies between the settlement period and calendar year.

Consumption structure – number of metering points by grid zone in 1 000				
Federal province / grid zone	2014	2015	Average (*)	Share (*)
Burgenland	202	202	200	3.4%
Carinthia	388	389	386	6.5%
Lower Austria	843	847	840	14.1%
Upper Austria	1 007	1 014	996	16.7%
Salzburg	430	432	427	7.2%
Styria	929	932	924	15.5%
Tyrol	471	474	466	7.8%
Vorarlberg	226	229	223	3.7%
Vienna	1 512	1 519	1 500	25.2%
Austria	6 008	6 039	5 963	100.0%

(*) 2011 – 2015 average

Load indicators for 2015 in MW and GWh



Load indicators

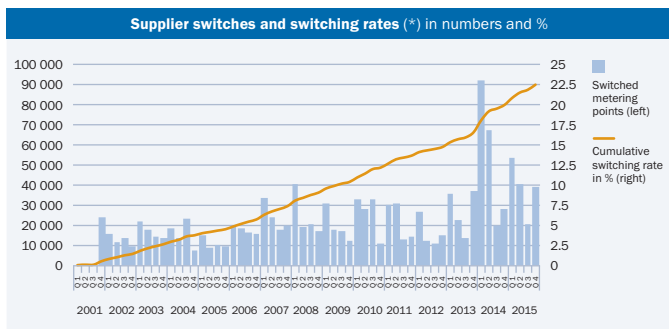
	Annual peak load	Annual minimum load	Maximum daily min. load	Daily baseload supply	Peak load utilisation time	Load factor (M)
	MW	MW	MW	GWh	h	
2011	9 716	3 754	6 451	43 729	6 039	0.69
2012	10 113	3 894	6 785	44 189	5 873	0.67
2013	10 092	3 887	6 724	45 341	6 005	0.69
2014	10 132	4 030	6 661	44 685	5 932	0.68
2015	10 062	4 079	6 559	46 007	6 079	0.69

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

(*) By number of metering points

Supplier switches and switching rates (*)					
Consumer category	2005	2010	2013	2014	2015
Number of supplier switches					
Households	22 768	69 781	73 525	159 747	102 571
Other small consumers	17 883	31 407	31 627	44 947	47 506
Load-metered consumers	1 988	3 214	3 560	1 930	2 731
Total	42 639	104 402	108 712	206 624	152 808
Switching rates in %					
Households	0.6	1.7	1.7	3.7	2.3
Other small consumers	1.1	1.9	2.0	2.8	2.9
Load-metered consumers	7.0	9.3	9.7	5.1	7.1
Total	0.8	1.8	1.8	3.4	2.5

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2010	2013	2014	2015
Burgenland	335	1 402	2 926	4 837	3 826
Carinthia	5 078	3 760	4 856	11 912	13 795
Lower Austria	6 322	21 580	19 691	30 203	17 570
Upper Austria	11 952	20 077	25 002	52 828	36 731
Salzburg	1 057	1 476	1 651	2 935	3 757
Styria	3 502	26 180	21 984	40 385	32 533
Tyrol	2 028	1 706	2 394	3 194	4 140
Vorarlberg	240	607	1 285	1 500	2 221
Vienna	12 125	27 614	28 923	58 830	38 235
Austria	42 639	104 402	108 712	206 624	152 808

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2010	2013	2014	2015
Burgenland	0.2	0.7	1.5	2.4	1.9
Carinthia	1.4	1.0	1.3	3.1	3.5
Lower Austria	0.8	2.6	2.3	3.6	2.1
Upper Austria	1.3	2.1	2.5	5.2	3.6
Salzburg	0.3	0.4	0.4	0.7	0.9
Styria	0.4	2.9	2.4	4.3	3.5
Tyrol	0.5	0.4	0.5	0.7	0.9
Vorarlberg	0.1	0.3	0.6	0.7	1.0
Vienna	0.8	1.9	1.9	3.9	2.5
Austria	0.8	1.8	1.8	3.4	2.5

(*) By number of metering points

Electricity switching rates (pages 46 – 47)

Green electricity injection and support payments
 (Austria, 2015 and 2014)

Primary energy source	Injection in GWh	Net support in m €	Supported green electricity share in total supply, in %	Average support in cent/kWh
2015	(1)			
Supported small hydro	1 519.0	74.5	2.6%	4.90
Other renewables	7 649.3	883.3	13.3%	11.55
Wind	4 591.8	404.5	8.0%	8.81
Wastes with high biog. fraction	2 043.3	270.4	3.6%	13.23
Biogas (*)	558.9	98.4	1.0%	17.60
Liquid biomass	0.1	0.0	0.0001%	13.72
Photovoltaics	436.6	109.3	0.76%	25.03
Sewage and landfill gas	18.6	0.8	0.03%	4.30
Geothermal	0.1	0.0	0.0001%	3.13
Total small hydro and other renewables	9 168.3	957.8	15.9%	10.45
2014	(2)			
Supported small hydro	1 703.1	81.4	3.0%	4.78
Other renewables	6 496.0	764.6	11.5%	11.77
Wind	3 639.9	315.5	6.4%	8.67
Wastes with high biog. fraction	1 941.2	259.7	3.4%	13.38
Biogas (*)	542.7	95.1	1.0%	17.53
Liquid biomass	0.1	0.0	0.0002%	13.21
Photovoltaics	351.4	93.3	0.62%	26.56
Sewage and landfill gas	20.4	0.9	0.04%	4.58
Geothermal	0.4	0.0	0.0007%	3.48
Total small hydro and other renewables	8 199.0	846.0	14.5%	10.32

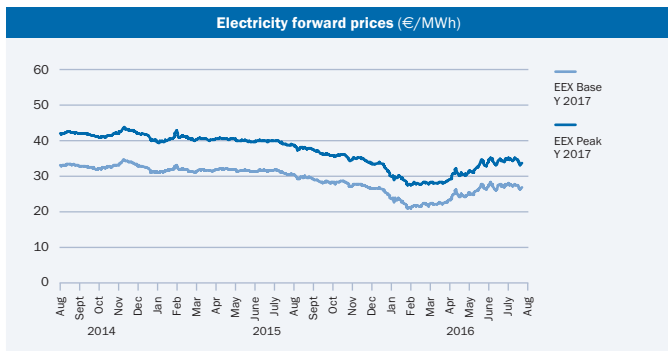
(*) incl. operation markups

(1) Relating to the total electricity supplied to consumers from the public grid in 2015, i.e. 57 501 GWh (as of 02/2016)

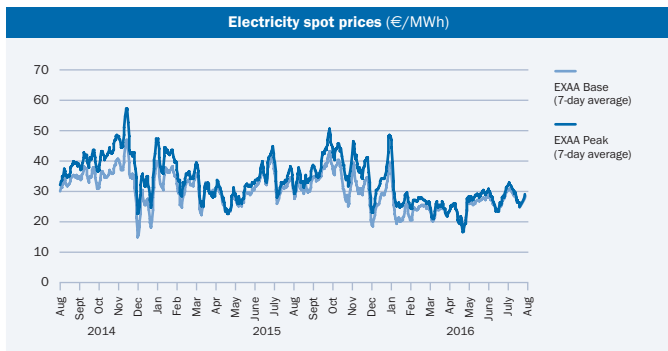
(2) Relating to the total electricity supplied to consumers from the public grid in 2014, i.e. 56 460 GWh (as of 02/2016)

Source: Green power settlement agent OeMAG, E-Control, February 2016 – preliminary values

Wholesale markets



Source: EEX



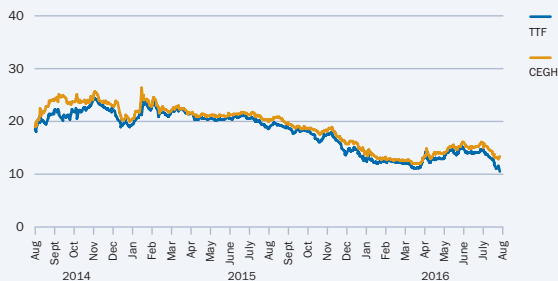
Source: EXAA

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

Electricity forward and spot prices in €/MWh				
	EEX Peak		EEX Base	
	Day-ahead average	Y 2017 average	Day-ahead average	Y 2017 average
2014	36.80	42.55	32.76	33.36
2015	35.06	38.47	31.63	30.25
January 2015	35.06	39.89	28.72	31.22
February 2015	42.08	40.96	36.72	32.01
March 2015	34.37	40.43	31.32	31.47
April 2015	29.40	40.27	29.72	31.70
May 2015	26.16	40.17	25.36	31.73
June 2015	31.92	39.75	30.07	31.45
July 2015	36.88	39.69	35.00	31.44
August 2015	33.48	38.35	31.61	30.11
September 2015	34.55	37.31	31.88	29.14
October 2015	44.69	35.83	39.37	28.25
November 2015	38.86	35.06	32.39	27.75
December 2015	33.81	33.98	27.78	26.83
January 2016	35.32	30.73	29.04	24.28
February 2016	26.01	28.16	21.99	21.70
March 2016	25.72	27.97	24.29	21.99
April 2016	24.58	29.36	24.21	23.50
May 2016	22.34	30.99	22.54	24.87
June 2016	29.37	33.73	27.69	26.88

Source: EXAA, EEX

Gas spot market prices, in €/MWh

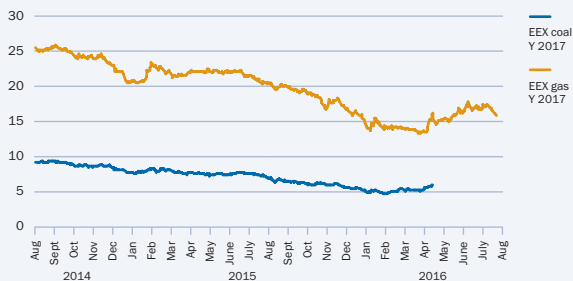


Sources: ICIS Heren, CEGH Exchange

Gas spot market prices, in €/MWh

	TTF (NL) average	CEGH (AT) average		TTF (NL) average	CEGH (AT) average
2014	20.95	22.26	September 2015	19.18	20.25
2015	19.80	20.65	October 2015	18.22	18.87
January 2015	19.74	21.01	November 2015	17.09	18.22
February 2015	22.51	23.60	December 2015	15.77	16.99
March 2015	21.79	22.45	January 2016	13.76	15.05
April 2015	21.97	22.17	February 2016	12.39	13.22
May 2015	20.55	21.17	March 2016	12.28	12.72
June 2015	20.50	21.17	April 2016	12.05	12.66
July 2015	20.88	21.52	May 2016	13.01	13.91
August 2015	19.58	20.65	June 2016	14.44	15.38

Sources: ICIS Heren, CEGH Exchange

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

Source: EEX

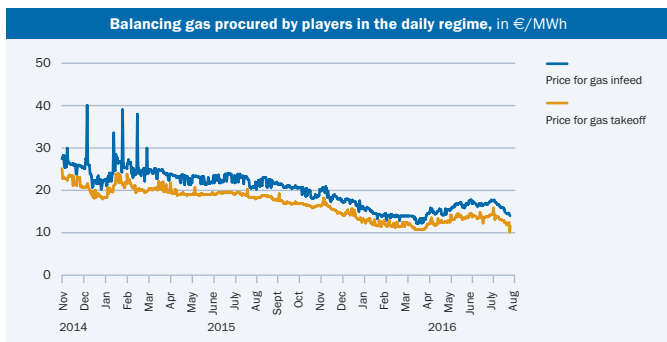
Gas and coal forward prices in €/MWh, €/t

Y 2017					
	Gas average	Coal average		Gas average	Coal average
January 2015	20.62	54.20	October 2015	18.98	42.88
February 2015	22.42	56.34	November 2015	17.69	42.54
March 2015	21.74	55.55	December 2015	16.88	39.76
April 2015	21.97	53.40	January 2016	14.85	36.09
May 2015	22.08	52.34	February 2016	14.26	34.25
June 2015	22.03	52.51	March 2016	13.97	36.79
July 2015	21.39	53.04	April 2016	14.18	38.33
August 2015	20.20	48.42	May 2016	15.23	—
September 2015	19.77	45.40	June 2016	16.65	—

Source: EEX

Gas import price					
	2002 = 100	Change in %		2002 = 100	Change in %
2004	102.00		2012	240.63	0.1
2005	135.12	0.3	2013	241.84	0.0
2006	174.62	0.3	2014	200.64	-0.2
2007	160.87	-0.1	2015	178.90	-0.1
2008	226.46	0.4	January 2016	147.97	-0.1
2009	164.19	-0.3	February 2016	136.20	-0.1
2010	182.52	0.1	March 2016	125.00	-0.1
2011	218.01	0.2	April 2016	121.61	0.0

Source: Statistics Austria



Source: Austrian Gas Clearing and Settlement (AGCS)

Brent oil spot price in USD/barrel

Source: Erdöl-Vereinigung (Union Pétrolière)

Brent oil spot price

	€/barrel	USD/barrel	Month-on-month change of € in %
January 2015	42.47	49.26	
February 2015	51.13	58.08	18
March 2015	52.17	56.79	-2
April 2015	56.49	60.90	7
May 2015	58.93	65.68	8
June 2015	56.93	63.83	-3
July 2015	51.97	57.15	-10
August 2015	43.20	48.07	-16
September 2015	43.37	48.66	1
October 2015	44.01	49.45	2
November 2015	43.14	46.33	-6
December 2015	36.64	39.78	-14
January 2016	29.89	32.45	-18
February 2016	30.29	33.58	4
March 2016	35.62	39.54	18
April 2016	37.78	42.84	8
May 2016	42.15	47.63	11
June 2016	44.33	49.78	5

Source: Erdöl-Vereinigung (Union Pétrolière), Oesterreichische Nationalbank (OeNB)

CO₂ emissions forward prices in €/t



Source: EEX

CO₂ emissions forward prices in €/t

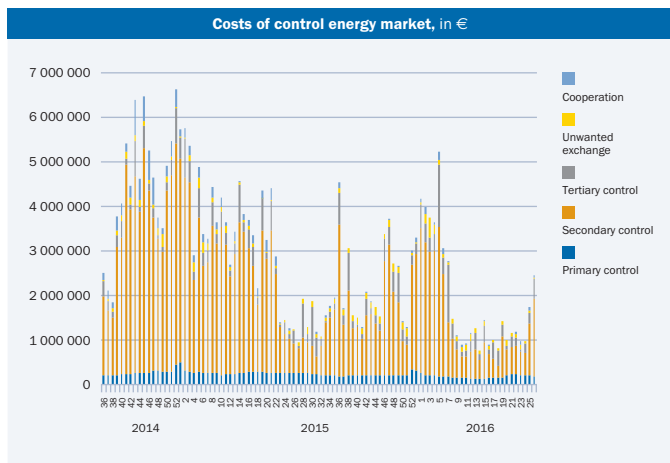
	EEX CO ₂ Y16 (MidDec)		EEX CO ₂ Y16 (MidDec)
2014	6.38	September 2015	8.20
2015	7.80	October 2015	8.46
January 2015	7.19	November 2015	8.59
February 2015	7.46	December 2015	8.37
March 2015	6.93	January 2016	6.86
April 2015	7.21	February 2016	5.17
May 2015	7.57	March 2016	4.95
June 2015	7.58	April 2016	5.71
July 2015	7.85	May 2016	5.98
August 2015	8.20	June 2016	5.63

Source: EEX

Pellet price index (*)										
	2000	2005	2008	2009	2010	2011	2012	2013	2014	2015
Index 2000 = 100	100	80	84	92	92	100	96	104	100	96
Year-on-year change in %		-4.00	1.67	9.52	0.00	8.70	-4.00	8.33	-3.85	-4.00

(*) Based on average annual values, corrected for inflation

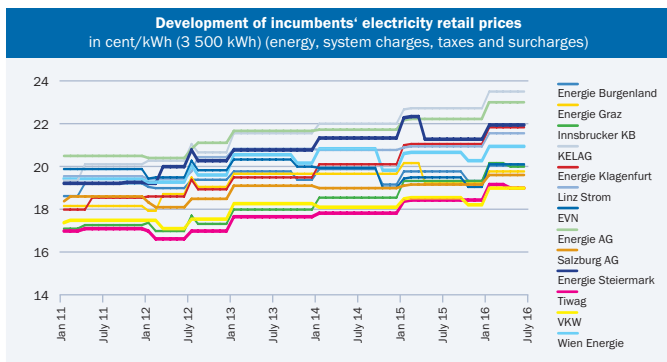
Sources: proPellets Austria, E-Control calculations



Source: APG

Please note that costs/revenues resulting from international cooperation are estimated in some cases.

Retail markets

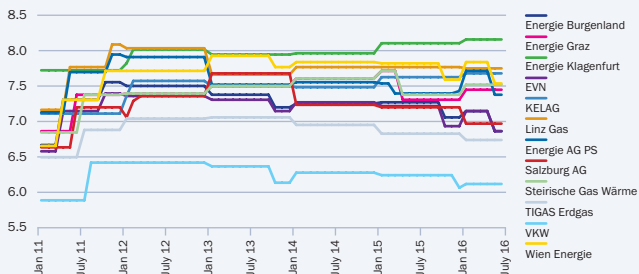


Source: E-Control, tariff calculator

Development of electricity retail prices in cent/kWh (3 500 kWh)						
	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2011	6.70	8.86	8.10	4.13	10.81	7.60
July 2011	6.73	8.86	8.15	4.13	10.61	7.71
Jan 2012	6.47	8.80	8.01	4.33	11.06	7.85
July 2012	6.12	8.75	7.76	4.15	10.65	7.68
Jan 2013	6.12	8.75	7.73	4.03	10.15	7.59
July 2013	6.12	8.75	7.67	4.03	10.50	7.45
Jan 2014	6.12	8.75	7.58	3.82	9.88	7.36
July 2014	6.12	8.75	7.41	3.82	9.14	7.25
Jan 2015	6.09	8.75	7.16	3.75	9.84	7.01
July 2015	5.97	8.75	7.03	3.75	9.77	6.89
Jan 2016	5.74	8.75	6.90	2.40	9.79	6.66

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)



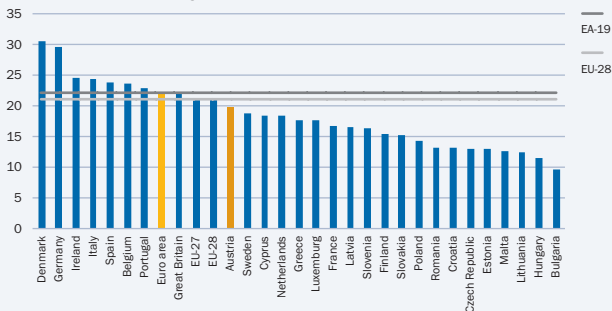
Source: E-Control, tariff calculator

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

	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2011	2.51	3.44	3.18	2.40	3.80	3.06
July 2011	2.86	3.85	3.65	2.30	3.98	3.07
Jan 2012	3.03	4.01	3.79	2.39	4.34	3.32
July 2012	3.03	4.01	3.79	2.48	4.56	3.63
Jan 2013	3.25	4.02	3.81	2.48	4.98	3.74
July 2013	3.25	4.02	3.76	2.76	4.34	3.55
Jan 2014	3.09	4.01	3.69	2.72	4.34	3.69
July 2014	3.09	4.01	3.69	2.72	3.93	3.60
Jan 2015	2.99	4.01	3.66	2.50	3.96	3.60
July 2015	2.99	4.01	3.36	2.26	3.95	3.52
Jan 2016	2.69	3.83	3.44	2.32	3.99	3.47

Household electricity prices in Europe, H2 2015 (2 500 – 5 000 kWh)

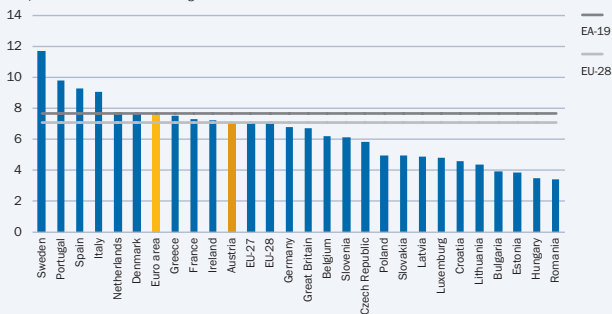
Cent/kWh incl. all taxes and surcharges



Source: Eurostat, as of 9/6/2016

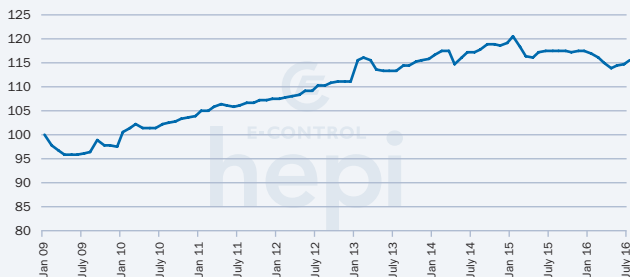
Household gas prices in Europe, H2 2015 (5 555.6 – 55 556 kWh)

Cent/kWh inkl. aller Steuern und Abgaben



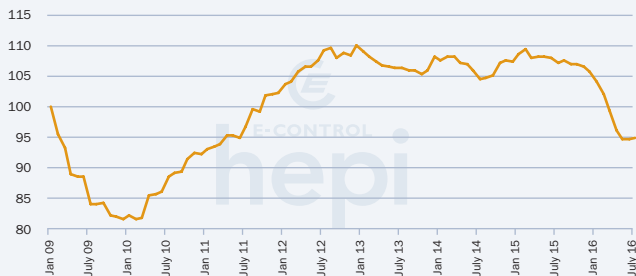
Source: Eurostat, as of 9/6/2016

Household Energy Price Index for Europe (HEPI) – electricity



Sources: E-Control, MEKH and VaasaETT Ltd.

Household Energy Price Index for Europe (HEPI) – gas



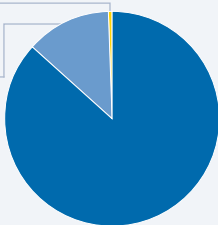
Sources: E-Control, MEKH and VaasaETT

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

Electricity labelling in Austria in 2015

Other known
primary sources:
0.4%

Known fossil
primary sources:
12.9%



Known renewable
primary sources:
86.7%

Environmental impact:
CO₂ emissions: 67 g/kWh
Radioactive waste: 0 mg/kWh

Austrian electricity labelling in 2015

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 of Science, Research and Economy.

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 Order 2007 (issued by the then Ministry for Economics and Labour, Federal Law Gazette II no 284/2007) and the Natural Gas Statistics Order 2005 (as amended by the Natural Gas Statistics [Amendment] Order 2008, issued by E-Control).

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
<hr/>		
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
<hr/>		
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. Pumpspeicherung	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
Inlandsstromverbrauch	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	ft3	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
ft3 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
m³ Cubic metre	264.2	220	6.289	35.3147	1 000	1

Source: IEA

Calorific values in different energy balances

Statistics Austria, arithmetic means over the past five years			
Energy source	Gigajoule / ...	Gross domestic consumption	Final energy consumption
Hard coal	t	28.34	27.71
Lignite	t	19.11	19.11
Brown coal briquettes	t	19.50	19.50
Peat	t	8.80	8.80
Coke oven coke	t	29.06	29.04
Crude oil	t	42.60	—
Petrol	t	41.59	41.82
Diesel	t	42.54	42.54
Gas oil	t	42.86	42.86
Fuel oil	t	40.76	41.17
Other fuel oil products	t	25.09	33.79
Natural gas	1 000 cu m	36.27	36.26
Solid and liquid waste	t	13.82	15.72
Fuelwood	t	14.31	14.31
Biofuels	t	11.68	12.90
Geothermal energy	MWh	3.60	3.60
District heat	MWh	—	3.60
Hydropower	MWh	3.60	—
Wind and photovoltaics	MWh	3.60	—
Electric energy	MWh	3.60	3.60

Source: Statistics Austria

Eurostat, calorific values (2008)				
Energy source	Gigajoule / ...	From (1) ...	Standard values	To (1) ...
Hard coal	t	17.200		30.700
Lignite	t	5.600		10.500
Brown coal briquettes	t		20.000	
Peat	t	7.800		13.800
Coke oven coke	t		28.500	
Crude oil	t	41.600		42.800
Petrol	t		44.000	
Gas/diesel oil	t		42.600	
Fuel oil	t		40.000	
Lubricants	t		42.000	
Hydropower	MWh		3 600	
Wind and photovoltaics	MWh		3 600	
Electric energy	MWh		3 600	

Data on gaseous fuels, geothermal energy and district heat are collected in TJ directly. Source: Eurostat statistics

International Energy Agency, OECD Europe conversion factors (2008)				
Energy source	Gigajoule / ...	From ...	Average / standard values	To ...
Steam coal (1), (a)	t (*)		22.944	
Crude oil (1)	t (*)		n/a	
Motor gasoline	t (*)	43.585		44.003
Gasoline type jet fuel	t (*)		42.998	
Gas/diesel oil	t (*)		42.580	
Residual fuel oil	t (*)		39.984	
Liquefied petroleum gases	t (*)		46.013	
Refinery gas	t (*)		49.488	
Lubricants	t (*)	31.987		41.994
Natural gas (1), (b)	1 000 cu m		39.668	

(1) For the ten largest producers (a) for Europe: Poland; (b) for Europe: Norway (*) Converted from tons of oil equivalent (tOE) with a standard calorific value of 41,868 kJ/kg Source: IEA and own calculations

Editorial

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Energie-Control Austria
Rudolfsplatz 13a, A-1010 Vienna
phone: +43 1 24 7 24-0
fax: +43 1 24 7 24-900
e-mail: office@e-control.at
www.e-control.at
twitter: www.twitter.com/energiecontrol
facebook: www.facebook.com/energie.control

Editorial responsibility:

Andreas Eigenbauer and Wolfgang Urbantschitsch,
Executive Directors, Energie-Control Austria

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