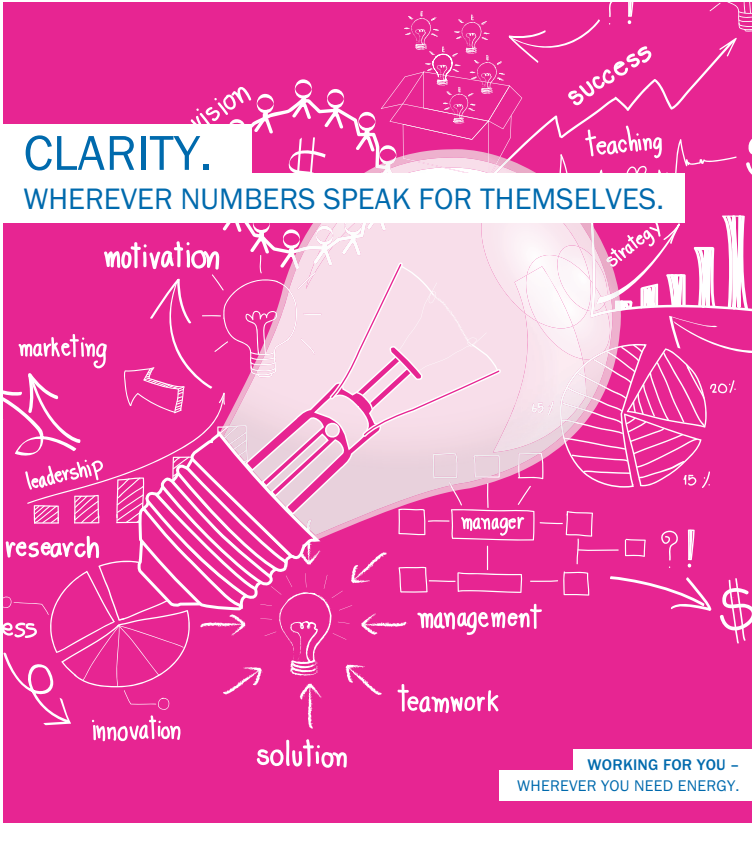
KEY STATISTICS 2015

E-CONTROL



CLARITY.

WHEREVER NUMBERS SPEAK FOR THEMSELVES.

WORKING FOR YOU –
WHEREVER YOU NEED ENERGY.

Table of contents

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.

Walter Boltz
Executive Director
Energie-Control Austria

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Executive Director
Energie-Control Austria

Overview

Economic indicators

Consumer price index, Jan 2000 = 100						
	Total		Electricity		Natural gas	
	Annual average	Change in % (*)	Annual average	Change in % (*)	Annual average	Change in % (*)
2007	106.2	2.1	117.6	8.5	121.8	7.7
2008	109.7	3.1	119.6	1.7	125.3	2.8
2009	110.2	0.5	124.5	3.9	133.7	6.3
2010	112.2	1.8	125.7	1.0	127.7	–4.7
2011	115.8	3.1	125.9	0.1	138.8	8.0
2012	118.7	2.4	126.9	0.8	145.7	4.7
2013	121.1	2.0	132.6	4.3	145.4	–0.2
2014	**123.0**	**1.6**	**132.6**	**0.0**	**145.1**	**–0.2**

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

Gross domestic product		
	m€ (rate of 2005)	Change in % (*)
2007	295 609	3.5
2008	300 183	1.5
2009	288 779	–3.9
2010	294 208	1.8
2011	303 244	3.0
2012	305 924	0.9
2013	306 622	0.2
2014	**307 544**	**0.3**

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

Population, annual average		
	Population numbers	Change in % (*)
2000	8 011 566	0.2
2005	8 225 278	0.5
2010	8 361 069	0.6
2011	8 388 534	0.3
2012	8 426 311	0.5
2013	8 477 230	0.6
2014	**8 543 932**	**0.8**

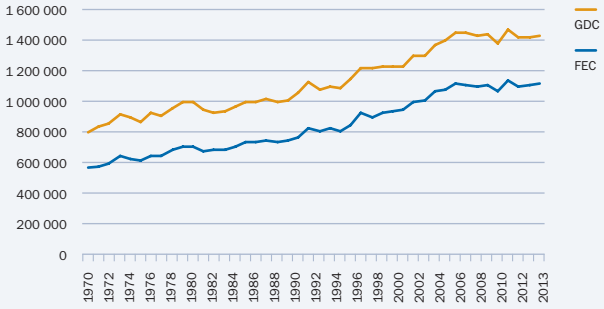
(*) average or annual change rates
Source: Statistics Austria

Households in 1 000				
	Single-person households	Multi-person households	Total	Average household size (persons)
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
2011	1 322	2 331	3 653	2.26
2012	1 345	2 341	3 686	2.25
2013	1 368	2 355	3 722	2.24
2014	**1 395**	**2 374**	**3 769**	**2.23**

Source: Statistics Austria

Energy industry indicators

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



Source: Statistics Austria

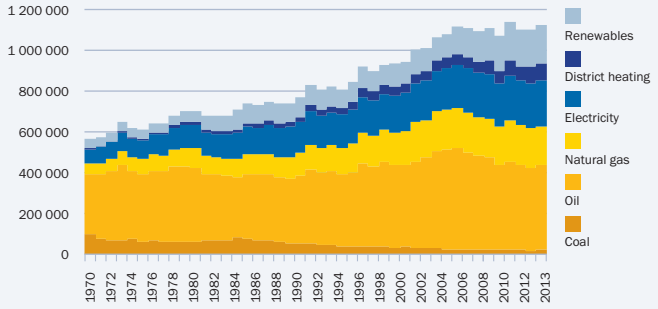
Gross domestic consumption and final energy consumption in TJ

	Gross domestic consumption	Final energy consumption
2000	1 224 477	941 289
2005	1 449 065	1 110 904
2010	1 465 045	1 134 589
2011	1 419 452	1 098 243
2012	1 418 069	1 099 791
2013	**1 424 893**	**1 119 241**

Source: Statistics Austria

ENERGY BALANCE

Energy mix in final energy consumption in TJ



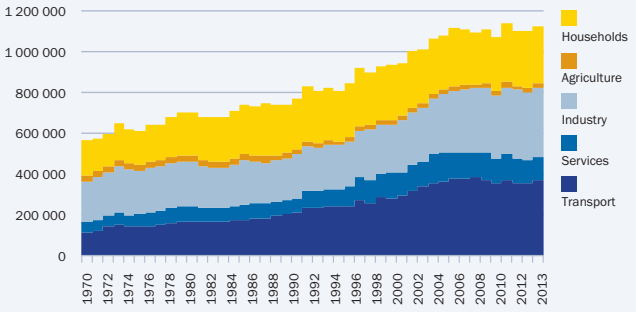
Source: Statistics Austria

Energy mix in final energy consumption in TJ

	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
2000	37 026	401 577	167 475	183 336	42 699	109 176	**941 289**
2005	23 405	496 129	196 521	207 768	54 082	133 000	**1 110 904**
2010	20 444	434 345	200 607	218 916	76 690	183 587	**1 134 589**
2011	20 070	414 428	195 903	218 635	73 279	175 928	**1 098 243**
2012	18 390	406 166	192 856	221 560	77 013	183 805	**1 099 791**
2013	**20 080**	**416 792**	**191 251**	**223 731**	**80 747**	**186 639**	**1 119 241**

Source: Statistics Austria

Final energy consumption by sectors in TJ



Source: Statistics Austria

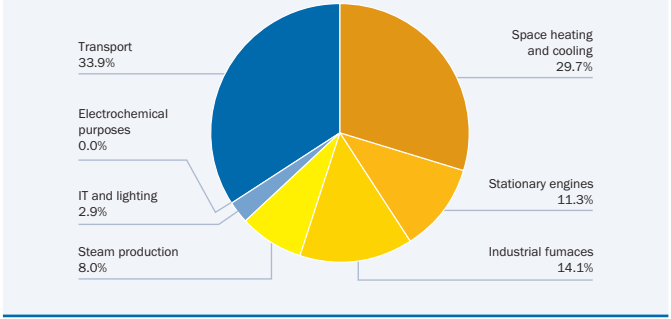
Final energy consumption by sectors in TJ

	Households	Agriculture	Industry	Services	Transport	Total
2000	259 569	22 206	253 629	113 161	292 724	**941 289**
2005	281 017	22 917	302 973	124 746	379 252	**1 110 904**
2010	286 775	23 522	329 448	128 222	366 623	**1 134 589**
2011	266 246	22 168	336 326	115 831	357 672	**1 098 243**
2012	275 815	23 615	333 923	112 559	353 879	**1 099 791**
2013	**278 171**	**23 699**	**335 683**	**111 429**	**370 258**	**1 119 241**

Source: Statistics Austria

USEFUL ENERGY

Useful energy consumption in 2013



Source: Statistics Austria

Useful energy consumption in 2013

	TJ	Share in %
Space heating and cooling	332 176	29.7
Stationary engines	126 453	11.3
Industrial furnaces	157 666	14.1
Steam production	89 927	8.0
IT and lighting	32 828	2.9
Electrochemical purposes	373	0.0
Transport	379 818	33.9
Total	**1 119 241**	**100.0**

Source: Statistics Austria

Natural gas – useful energy consumption in 2013			
	TJ	**Share in %**	**Share in total in %**
Space heating and cooling	79 673	41.7	7.1
Stationary engines	5 898	3.1	0.5
Industrial furnaces	53 379	27.9	4.8
Steam production	40 948	21.4	3.7
IT and lighting	0	0.0	0.0
Electrochemical purposes	0	0.0	0.0
Transport	11 353	5.9	1.0
Total	**191 251**	**100.0**	**17.1**

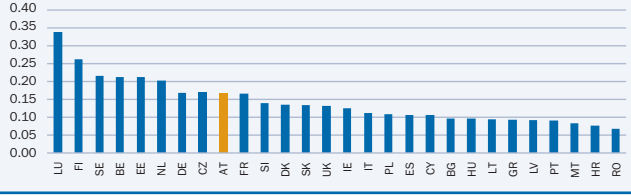
Source: Statistics Austria

Electricity – useful energy consumption in 2013			
	TJ	**Share in %**	**Share in total in %**
Space heating and cooling	26 435	11.8	2.4
Stationary engines	104 150	46.6	9.3
Industrial furnaces	47 883	21.4	4.3
Steam production	909	0.4	0.1
IT and lighting	32 828	14.7	2.9
Electrochemical purposes	373	0.2	0.0
Transport	11 153	5.0	1.0
Total	**223 731**	**100.0**	**20.0**

Source: Statistics Austria

INTERNATIONAL ENERGY INDICATORS

Per capita energy consumption in EU countries in 2013, TJ/inhabitant

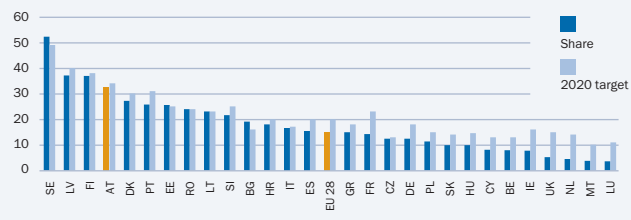


Source: Eurostat

Gross domestic consumption of energy divided by GDP in 2013, TJ/m€

Source: Eurostat

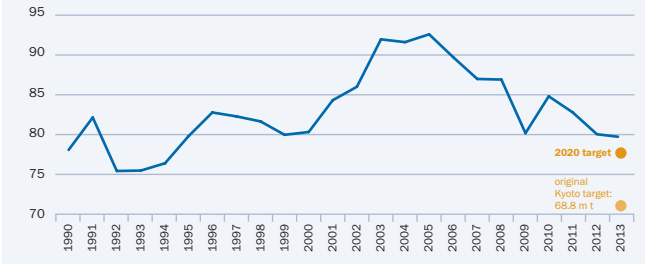
Renewables shares in the EU in 2013 and the 2020 target, %



Source: Eurostat

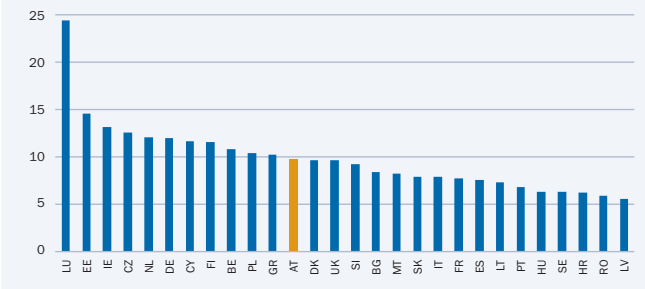
GREENHOUSE GAS EMISSIONS

Emissions in Austria and the 2020 target, 1990–2013, m t CO_2 equivalents



Source: UNFCCC

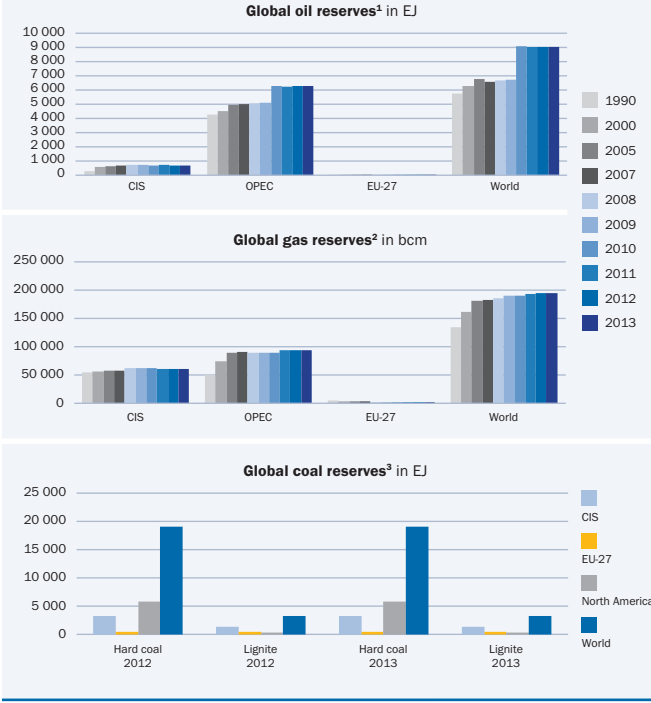
Per capita emissions in EU countries in 2012, t CO_2 equivalents



Source: Eurostat

Energy reserves

Global energy reserves



[1] *Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2013*

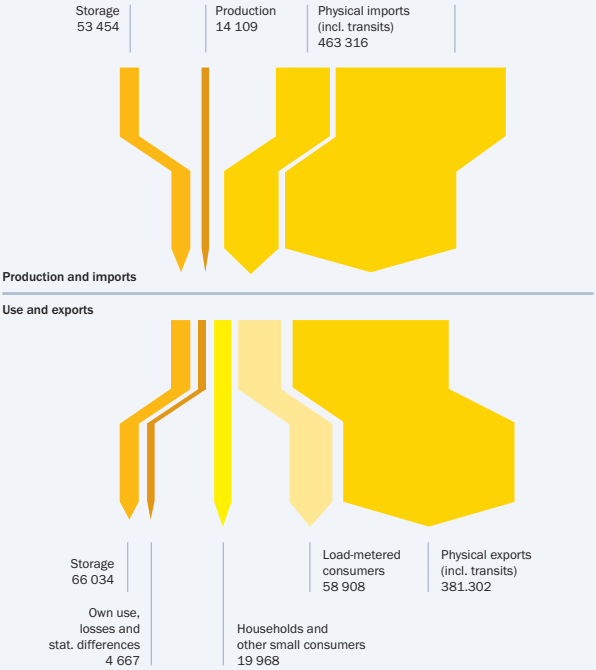
[2] *Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2013*
Please note: 2010 figures include unconventional gas sources.

[3] *Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2013*

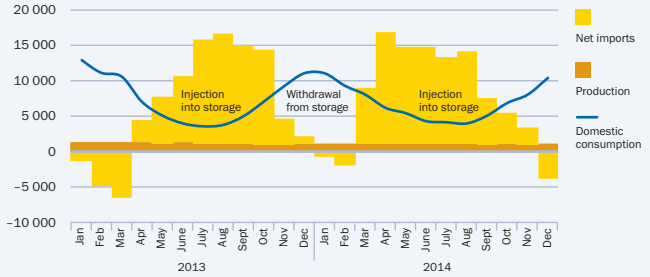
Operational statistics

Natural gas in Austria

Simplified energy flow chart for 2014, in GWh



Natural gas balance in GWh

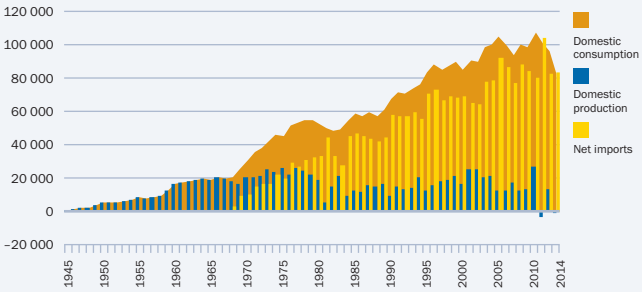


Natural gas balance for 2014

	m Nm³	GWh	Year-on-year change in %
Supply to consumers (a)	**7 032**	**78 763**	**–9.0**
Own use and losses (b) and statistical differences (c)	427	4 780	–
Domestic consumption	**7 459**	**83 543**	**–8.2**
Injection into storage (d)	5 896	66 034	9.1
Exports (d)	34 045	381 302	–15.5
Consumption and exports = production and imports	**47 400**	**530 879**	**–11.9**
Imports (d)	41 368	463 316	–10.8
Production (d)	1 252	14 021	–8.8
Injection of biogas (d)	8	88	64.7
Withdrawal from storage (d)	4 773	53 454	–21.6

(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

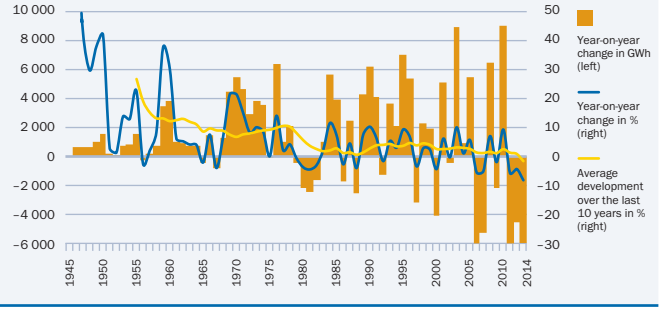


Natural gas balance in GWh

	Net imports	Domestic production (a)	Domestic consumption	Own use and losses (b)	Statistical difference (c)	Supply to consumers (d)
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
2011	95 585	418	3 484	99 487	103 731	–4 245
2012	91 059	215	3 616	94 891	82 822	12 069
2013	86 572	–207	4 665	91 031	67 906	23 125
2014	**78 763**	**262**	**4 518**	**83 543**	**82 015**	**1 528**

(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 %



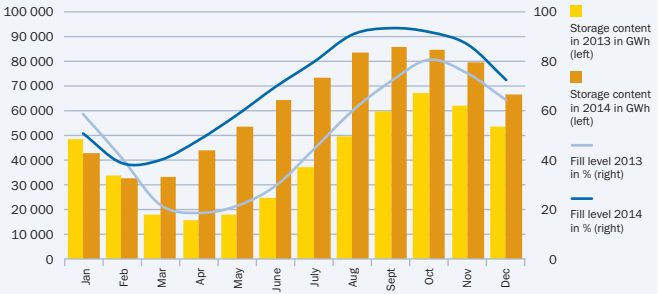
Physical imports and exports of natural gas in 2014

	Imports (*)		Exports (*)	
	in m Nm³	in GWh	in m Nm³	in GWh
Germany	10 291	115 260	2 805	31 418
Switzerland			55	617
Italy			24 518	274 604
Slovenia			1 623	18 182
Hungary			3 906	43 742
Slovakia	31 076	348 056	1 137	12 738
Czech Republic				
Total	**41 368**	**463 316**	**34 045**	**381 302**

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

Natural gas infrastructure in Austria

Natural gas storage at month end (*) in 2014, in GWh and %



(*) Includes all storage facilities on the Austrian territory; excludes facilities in neighbouring countries.

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
2011	83 384	34 354	40 642
2012	83 384	34 354	40 642
2013	82 975	33 134	40 538
2014	**91 983**	**36 148**	**44 684**

(*) Includes all storage facilities on the Austrian territory; excludes facilities in neighbouring countries.

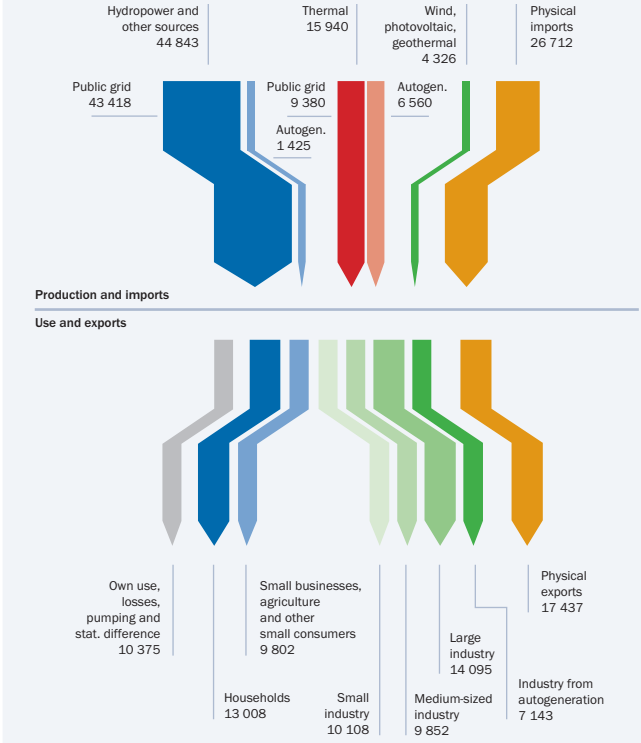
Domestic gas production in 2014		
	Max. production rate in Nm^3 per hour	Max. production rate in MWh per hour
Total	**1 957**	**175**

Network length at year end in km			
	Transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
1995 (*)	2 060	3 032	n.a.
2000 (*)	2 377	3 266	n.a.
2005	2 757	3 425	30 195
2010	3 143	3 685	33 027
2011	3 108	3 685	33 594
2012	3 210	3 674	34 044
2013	3 109	3 990	34 476
2014	**3 129**	**4 041**	**34 758**

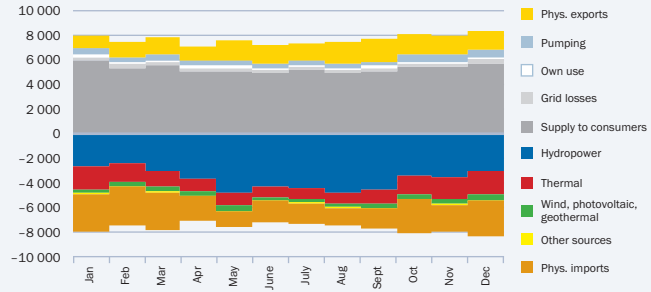
(*) Partly estimated based on year of start of operation

Electricity in Austria (total electricity supply)

Simplified energy flow chart for 2014 in GWh



Electricity balance 2014, in GWh

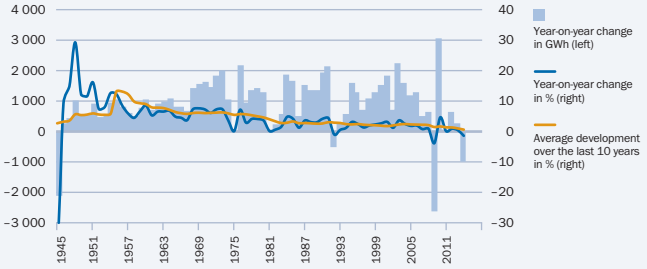


Electricity balance 2014

		2013 in GWh	2014 in GWh	Year-on-year change in GWh	in %
Supply to consumers (1)		64 422	63 603	–818	–1.3
Grid losses		3 541	3 431	–111	–3.1
Own use		1 971	1 884	–87	–4.4
Domestic consumption		**69 934**	**68 918**	**–1 016**	**–1.5**
Pumping		5 374	5 466	93	1.7
Physical exports		17 689	17 437	–252	–1.4
Use and exports = generation and imports		**92 997**	**91 821**	**–1 176**	**–1.3**
Gross generation	Hydro	45 671	44 728	–942	–2.1
	Thermal	18 775	15 940	–2 835	–15.1
	Renewables (2)	3 458	4 326	868	25.1
	Other sources	134	115		
Physical imports		24 960	26 712	1 752	7.0

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

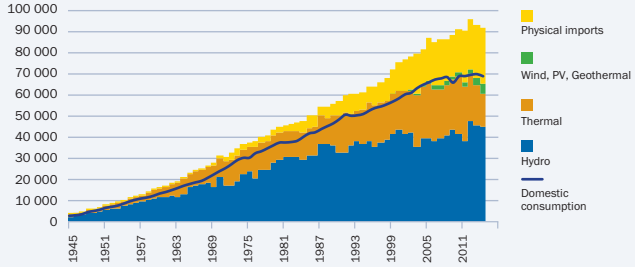
Electricity consumption trends in GWh and %



Electricity balance in GWh

	Supply to consumers	Own use	Grid losses	Domestic consumption	Electricity for pumping	Physical exports	Use and exports = generation and imports
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**
2011	63 454	2 068	3 470	**68 992**	5 061	16 777	**90 831**
2012	63 982	2 120	3 528	**69 630**	5 563	20 627	**95 820**
2013	64 422	1 971	3 541	**69 934**	5 374	17 689	**92 997**
2014	**63 603**	**1 884**	**3 431**	68 918	**5 466**	**17 437**	91 821

Domestic consumption and supply in GWh



Electricity balance in GWh

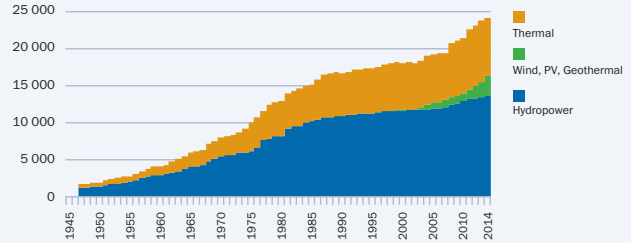
	Gross generation					Physical imports	Generation and imports = use and exports
	Hydro-power	Thermal	Wind, PV, Geothermal	Other sources	Total		
2000	43 461	18 270	67		**61 798**	13 920	**75 718**
2005	39 574	26 126	1 347	–312	**66 735**	20 355	**87 091**
2010	41 575	27 384	2 096	16	**71 070**	19 909	**90 979**
2011	37 745	25 933	1 985	192	**65 854**	24 977	**90 831**
2012	47 618	22 072	2 586	115	**72 390**	23 430	**95 820**
2013	45 671	18 775	3 458	134	**68 037**	24 960	**92 997**
2014	**44 728**	**15 940**	**4 326**	**115**	**65 109**	**26 712**	**91 821**

Gross generation mix in 2013						
Energy source			**GWh**	**Share in %**		
Hydropower	Run of river	over 10 MW	24 204	37.2	54.2	
		up to 10 MW	5 435	8.5	12.4	
	Pumped storage	over 10 MW	14 467	22.2	32.3	
		up to 10 MW	523	0.8	1.2	
	Total hydro		**44 728**	**68.7**	**100.0**	
Thermal	Fossil fuels and derivatives	Hard coal	2 954	4.5		18.5
		Lignite				
		Coal derivatives (1)	1 951	3.0		12.2
		Oil derivatives (1)	605	0.9		3.8
		Natural gas	5 356	8.2		33.6
		Total	10 866	16.7		68.2
	Biofuels	Solid (2)	2 507	3.9		15.7
		Liquid (2)	0	0.0		0.0
		Gaseous (2)	579	0.9		3.6
		Sewage and landfill gases (2)	37	0.1		0.2
		Total (2)	3 124	4.8		19.6
	Other biofuels (3)		1 252	1.9		7.9
	Other fuels		699	1.1		4.4
	Total thermal		**15 937**	**24.5**		**100.0**
	(of which CHP)		(13 360)	(20.5)		(83.8)
Renewables	Wind (4)		3 845	5.9	89.0	
	Photovoltaics (4)		480	0.7	11.0	
	Geothermal (4)		0	0.0	0.0	
	Total renewables (4)		**4 326**	**6.6**	**100.0**	
Other sources (5)			115	0.4		
Total			**65 109**	**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

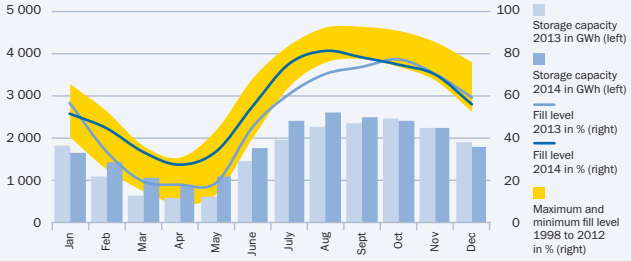
Installed capacity at year end in MW



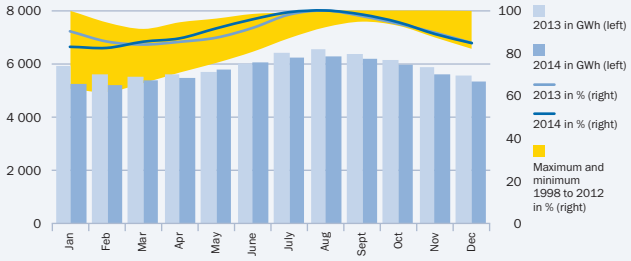
Installed capacity at year end in MW

	Gross maximum capacity						
	Hydropower plants			Wind, PV, Geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
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**
2011	5 444	7 765	13 209	1 179	8 285	**22 673**	**22 044**
2012	5 519	7 844	13 362	1 553	8 261	**23 177**	**22 547**
2013	5 573	7 847	13 420	2 142	8 276	**23 839**	**23 208**
2014	**5 599**	**7 969**	**13 568**	**2 697**	**7 959**	**24 224**	**23 611**

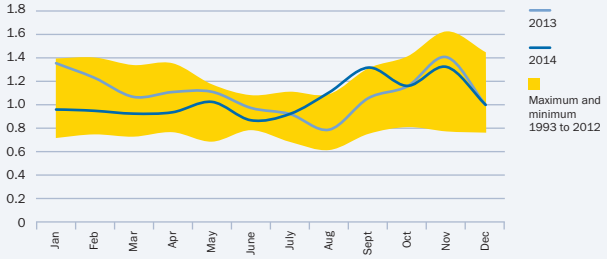
Storage capacity and fill levels at month end – large reservoirs of public generators, in GWh and %



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

2013	2014	1993 to 2012 maximum	1993 to 2012 minimum
1.07	1.03	1.16	0.87

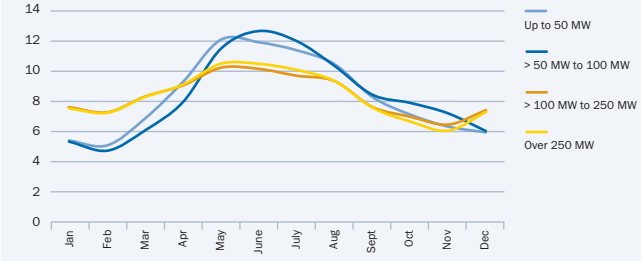
Energy availability – power plants of public generators (*), in %						
	Thermal power plants			Pumped storage power plants		
	Availability factor	Utilisation factor	Outages	Availability factor	Utilisation factor	Outages
2006	86.2	38.0	6.5	91.2	17.5	1.9
2007	83.7	37.0	5.7	92.4	18.5	1.6
2008	82.9	37.5	8.3	94.7	17.4	3.5
2009	83.5	29.4	7.3	88.1	18.1	15.0
2010	84.3	35.9	15.0	84.2	18.7	7.7
2011	84.5	31.9	5.6	92.0	16.2	2.5
2012	84.5	21.7	20.1	85.3	20.9	4.6
2013	81.8	16.5	14.9	85.7	19.7	3.6
2014	**83.0**	**15.5**	**13.5**	**86.2**	**19.6**	**4.8**

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

Firm capacity in 2014 – 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

Share of monthly standard capacity in 2014 annual values – run-of-river plants of public generators (*), in %



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

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
2010	72.7	57.2	40.2	8 680	5 761	1 670
2011	71.2	54.5	39.9	9 342	6 599	1 687
2012	69.4	50.1	39.1	9 262	6 576	1 685
2013	73.0	52.8	38.7	9 210	6 578	1 695
2014	**72.3**	**50.8**	**37.5**	**8 959**	**6 266**	**1 691**

(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

Public grid in Austria

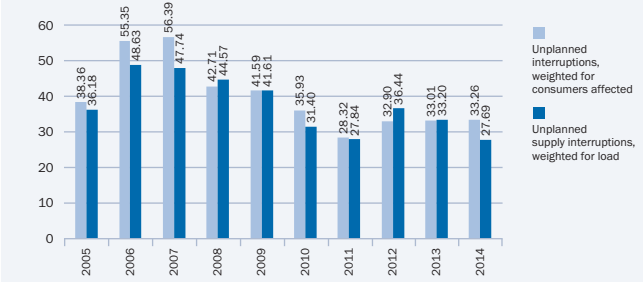
Route length (*) of the public grid at year-end 2014					
	Overhead lines		Cables		Total
Voltage level	km	Share in %	km	Share in %	km
380 kV	1 363	0.6%	55	0.0%	**1 418**
220 kV	1 853	0.8%	3	0.0%	**1 856**
110 kV	5 979	2.5%	610	0.3%	**6 599**
1 kV to 110 kV	26 978	11.4%	38 951	16.4%	**65 928**
Up to 1 kV	34 683	14.6%	127 595	53.6%	**162 277**
Total	**70 865**	**29.8%**	**167 213**	**70.2%**	**238 077**

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

High voltage substations in the public grid at year-end 2014		
Voltage level	Number of transformers	Total capacity in MVA
Primary voltage up to 200 kV	997	41 138
Primary voltage over 200 kV	84	29 455
High voltage to high, medium and low voltage	**1 081**	**70 593**

Medium voltage substations in the public grid at year-end 2014		
Voltage level	Number of transformers	Total capacity in MVA
Medium voltage to medium and low voltage	**77 447**	**30 358**

Interruption of electricity supply, in minutes



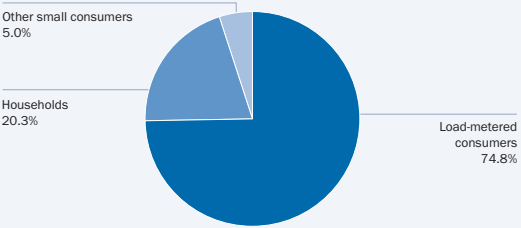
Market statistics

Austrian gas market

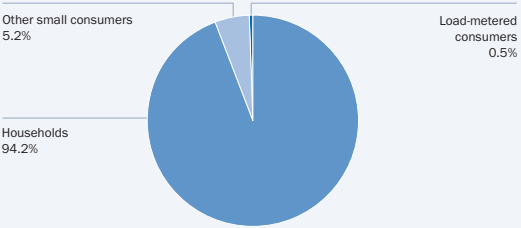
Consumption structure					
		Supply to consumers			
Consumer category	Unit	2013	2014	Average (*)	Share (*)
Households	GWh	18 943	16 383	18 390	20.3%
Other small consumers	GWh	4 480	3 585	4 514	5.0%
Load-metered consumers	GWh	63 117	58 908	67 917	74.8%
Statistical difference	GWh	331	–144	–7	0.0%
Total supply to consumers	**GWh**	**86 572**	**78 763**	**90 815**	**100.0%**
		Number of metering points (MP)			
Consumer category	Unit	2013	2014	Average (*)	Share (*)
Households	1 000	1 272	1 271	1 273	94.2%
Other small consumers	1 000	71	70	70	5.2%
Load-metered consumers	1 000	8	8	7	0.5%
Total number of metering points	**1 000**	**1 350**	**1 349**	**1 350**	**100.0%**
		Average consumption			
Consumer category	Unit	2013	2014	Average (*)	
Households	kWh/MP	14 892	12 891	14 450	
Other small consumers	kWh/MP	63 374	51 100	64 056	
Load-metered consumers	kWh/MP	8 192 729	7 503 207	9 231 421	
Total	**kWh/MP**	**64 108**	**58 392**	**67 247**	

(*) 2010 – 2014 average
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

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



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



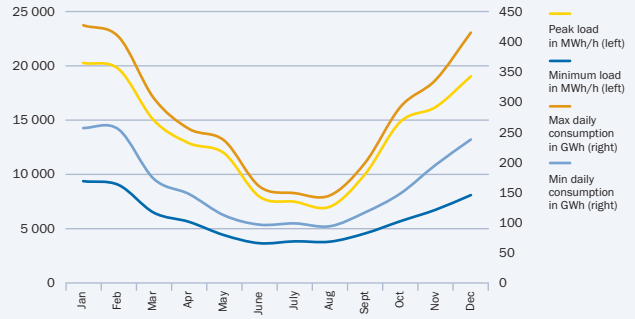
Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2013	2014	Average (*)	Share (*)
Burgenland		2 301	2 150	**2 244**	**2.5%**
Carinthia		2 195	2 121	**2 030**	**2.2%**
Lower Austria		18 128	17 047	**18 571**	**20.4%**
Upper Austria		22 817	21 446	**24 972**	**27.5%**
Salzburg		3 119	2 658	**3 073**	**3.4%**
Styria		12 283	10 956	**12 958**	**14.3%**
Tyrol		3 814	3 572	**3 548**	**3.9%**
Vorarlberg		2 348	2 079	**2 231**	**2.5%**
Vienna		19 535	16 849	**21 195**	**23.3%**
Austria	Statistical difference	33	–113	—	—
	Total supply to consumers	**86 572**	**78 763**	**90 821**	**100.0%**

(*) 2010 – 2014 average
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	2013	2014	Average (*)	Share (*)
Burgenland	50	51	50	**3.7%**
Carinthia	14	14	14	**1.0%**
Lower Austria	293	293	292	**21.6%**
Upper Austria	148	148	149	**11.0%**
Salzburg	36	36	36	**2.6%**
Styria	67	67	67	**4.9%**
Tyrol	45	47	42	**3.1%**
Vorarlberg	34	35	34	**2.5%**
Vienna	663	659	668	**49.5%**
Austria	**1 350**	**1 349**	**1 350**	**100.0%**

(*) 2010 – 2014 average

Load indicators for 2014 in MWh/h and GWh

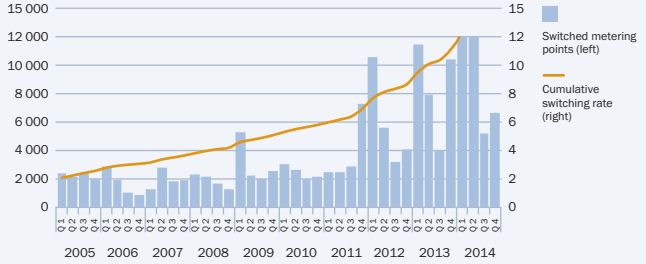


Load indicators

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
2010	25 467	3 798	19 372	542	99	4 006
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	**20 258**	**3 664**	**14 626**	**427**	**94**	**3 888**

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 (*)

	2010	2011	2012	2013	2014
	Number of supplier switches				
Households	8 018	13 041	21 123	31 051	**53 916**
Other small consumers	1 557	1 752	1 813	2 370	**2 444**
Load-metered consumers	224	368	498	428	**417**
Total	**9 799**	**15 161**	**23 434**	**33 849**	**56 777**
	Switching rates in %				
Households	0.6	1.0	1.7	2.4	**4.2**
Other small consumers	2.2	2.5	2.6	3.4	**3.5**
Load-metered consumers	5.4	5.8	6.8	5.6	**5.4**
Total	**0.7**	**1.1**	**1.7**	**2.5**	**4.2**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2010	2011	2012	2013	2014
Burgenland	139	386	636	1 056	**1 332**
Carinthia	28	76	214	213	**524**
Lower Austria	3 142	4 517	7 478	11 003	**16 020**
Upper Austria	1 582	1 894	3 832	6 174	**9 791**
Salzburg	65	91	190	527	**495**
Styria	643	958	1 304	1 851	**4 026**
Tyrol	2	3	12	29	**255**
Vorarlberg	2	56	73	117	**136**
Vienna	4 196	7 180	9 695	12 879	**24 198**
Austria	**9 799**	**15 161**	**23 434**	**33 849**	**56 777**

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2010	2011	2012	2013	2014
Burgenland	0.3	0.8	1.3	2.1	**2.6**
Carinthia	0.2	0.5	1.5	1.5	**3.8**
Lower Austria	1.1	1.5	2.6	3.8	**5.5**
Upper Austria	1.1	1.3	2.6	4.2	**6.6**
Salzburg	0.2	0.3	0.5	1.5	**1.4**
Styria	1.0	1.4	2.0	2.8	**6.0**
Tyrol	0.0	0.0	0.0	0.1	**0.5**
Vorarlberg	0.0	0.2	0.2	0.3	**0.4**
Vienna	0.6	1.1	1.5	1.9	**3.7**
Austria	**0.7**	**1.1**	**1.7**	**2.5**	**4.2**

(*) By number of metering points

Austrian electricity market (public grid)

Consumption structure

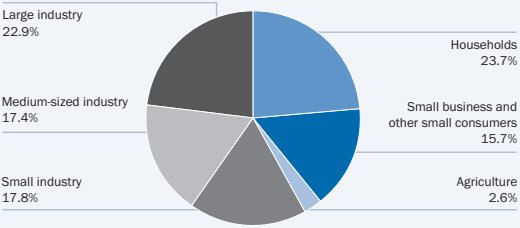
Supply to consumers					
Consumer category	**Unit**	**2013**	**2014**	**Average (*)**	**Share (*)**
Households	GWh	13 422	13 008	13 278	23.7%
Small business and other small consumers	GWh	8 748	8 406	8 814	15.7%
Agriculture	GWh	1 448	1 396	1 442	2.6%
Small industry	GWh	10 241	10 108	9 971	17.8%
Medium-sized industry	GWh	9 898	9 852	9 760	17.4%
Large industry	GWh	13 417	14 095	12 857	22.9%
Statistical difference	GWh	–326	–405	–	–
Total supply to consumers	**GWh**	**56 848**	**56 460**	**56 122**	**100.0%**

Number of metering points (MP)					
Consumer category	**Unit**	**2013**	**2014**	**Average (*)**	**Share (*)**
Households	1 000	4 313	4 357	4 262	71.9%
Small business and other small consumers	1 000	1 425	1 423	1 434	24.2%
Agriculture	1 000	191	191	192	3.2%
Small industry	1 000	35	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**	**5 966**	**6 008**	**5 924**	**100.0%**

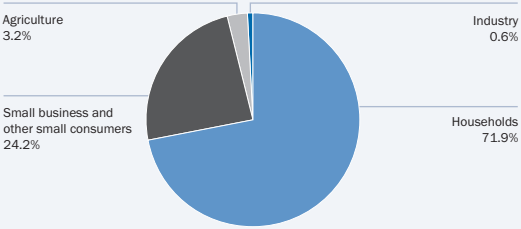
Average consumption					
Consumer category	**Unit**	**2013**	**2014**	**Average (*)**	
Households	kWh/MP	3 112	2 986	3 116	
Small business and other small consumers	kWh/MP	6 137	5 907	6 145	
Agriculture	kWh/MP	7 562	7 326	7 515	
Small industry	kWh/MP	295 956	280 466	294 657	
Medium-sized industry	kWh/MP	5 236 929	4 945 909	5 182 437	
Large industry	kWh/MP	65 449 549	69 432 883	63 840 138	
Total	**kWh/MP**	**9 528**	**9 397**	**9 474**	

(*) 2010 – 2014 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

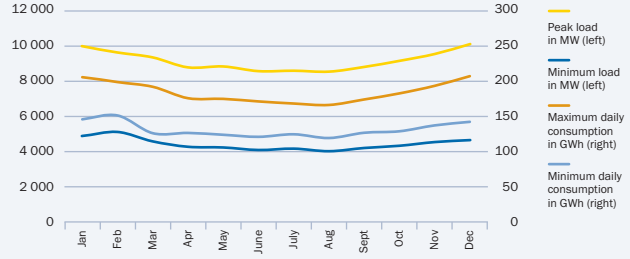
Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone		2013	2014	Average (*)	Share (*)
Burgenland		1 634	1 594	1 604	2.9%
Carinthia		4 153	4 097	4 135	7.4%
Lower Austria		8 025	8 008	7 926	14.1%
Upper Austria		10 801	10 995	10 205	18.2%
Salzburg		3 632	3 483	3 586	6.4%
Styria		8 536	8 573	8 430	15.0%
Tyrol		5 577	5 490	5 555	9.9%
Vorarlberg		2 604	2 552	2 575	4.6%
Vienna		12 212	12 074	12 106	21.6%
Austria	Statistical difference	–326	–405	–	–
	Total supply to consumers	**56 848**	**56 460**	**56 122**	**100.0%**

(*) 2010 – 2014 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	2013	2014	Average (*)	Share (*)
Burgenland	201	202	199	3.4%
Carinthia	386	388	384	6.5%
Lower Austria	840	843	837	14.1%
Upper Austria	998	1 007	987	16.7%
Salzburg	428	430	425	7.2%
Styria	924	929	919	15.5%
Tyrol	467	471	462	7.8%
Vorarlberg	223	226	220	3.7%
Vienna	1 501	1 512	1 491	25.2%
Austria	**5 966**	**6 008**	**5 924**	**100.0%**

(*) 2010 – 2014 average

Load indicators for 2014 in MW and GWh



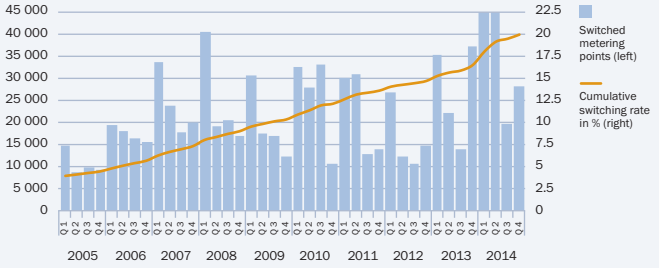
Load indicators

	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	
2010	9 749	3 704	6 951	43 807	6 014	0.69
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	**10 136**	**4 030**	**6 663**	**44 687**	**5 930**	**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]

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 (*)

Consumer category	2010	2011	2012	2013	2014
	Number of supplier switches				
Households	69 781	60 007	40 540	73 525	**160 527**
Other small consumers	31 407	26 292	21 711	31 627	**45 066**
Load-metered consumers	3 214	1 603	2 430	3 560	**1 930**
Total	**104 402**	**87 902**	**64 681**	**108 712**	**207 523**
	Switching rates in %				
Households	1.7	1.4	1.0	1.7	**3.7**
Other small consumers	1.9	1.6	1.3	2.0	**2.8**
Load-metered consumers	9.3	4.6	6.9	9.7	**5.0**
Total	**1.8**	**1.5**	**1.1**	**1.8**	**3.5**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2010	2011	2012	2013	2014
Burgenland	1 402	2 048	1 171	2 926	**4 837**
Carinthia	3 760	2 671	2 585	4 856	**11 912**
Lower Austria	21 580	16 295	12 344	19 691	**30 203**
Upper Austria	20 077	20 345	14 181	25 002	**52 828**
Salzburg	1 476	1 941	1 547	1 651	**2 935**
Styria	26 180	14 271	11 808	21 984	**40 336**
Tyrol	1 706	1 705	1 916	2 394	**4 142**
Vorarlberg	607	961	1 188	1 285	**1 500**
Vienna	27 614	27 665	17 941	28 923	**58 830**
Austria	**104 402**	**87 902**	**64 681**	**108 712**	**207 523**

(*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2010	2011	2012	2013	2014
Burgenland	0.7	1.0	0.6	1.5	**2.4**
Carinthia	1.0	0.7	0.7	1.3	**3.1**
Lower Austria	2.6	2.0	1.5	2.3	**3.6**
Upper Austria	2.1	2.1	1.4	2.5	**5.2**
Salzburg	0.4	0.5	0.4	0.4	**0.7**
Styria	2.9	1.6	1.3	2.4	**4.3**
Tyrol	0.4	0.4	0.4	0.5	**0.9**
Vorarlberg	0.3	0.4	0.5	0.6	**0.7**
Vienna	1.9	1.9	1.2	1.9	**3.9**
Austria	**1.8**	**1.5**	**1.1**	**1.8**	**3.5**

(*) By number of metering points

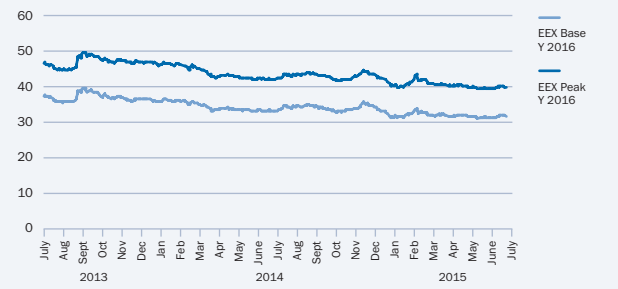
Green electricity injection and support payments
(Austria, 2014 and 2013)

Primary energy source	Injection in GWh	Net support in m €	Supported green electricity share in total supply, in %	Average support in cent/kWh
2014			(1)	
Supported small hydro	**1 703**	**81.4**	**3.0%**	**4.78**
Other renewables	**6 496**	**764.6**	**11.5%**	**11.77**
Wind	3 640	315.5	6.4%	8.67
Wastes with high biog. fraction	1 941	259.7	3.4%	13.38
Biogas (*)	543	95.1	1.0%	17.53
Liquid biomass	0.1	0.01	0.0002%	13.21
Photovoltaics	351	93.3	0.62%	26.56
Sewage and landfill gas	20	0.9	0.04%	4.58
Geothermal	0.38	0.013	0.0007%	3.48
Total small hydro and other renewables	**8 199**	**846.0**	**14.5%**	**10.32**
2013			(2)	
Supported small hydro	**1 371**	**66.6**	**2.4%**	**4.86**
Other renewables	**5 769**	**680.4**	**10.1%**	**11.79**
Wind	2 970	247.6	5.2%	8.34
Wastes with high biog. fraction	2 013	272.8	3.5%	13.55
Biogas (*)	544	96.8	1.0%	17.79
Liquid biomass	0.2	0.02	0.000%	11.83
Photovoltaics	215	61.7	0.38%	28.67
Sewage and landfill gas	26	1.4	0.05%	5.42
Geothermal	0.3	0.01	0.001%	3.85
Total small hydro and other renewables	**7 140**	**747.1**	**12.6%**	**10.46**

(*) incl. operation markups
(1) Relating to the total electricity supplied to consumers from the public grid in 2014, i.e. 56 514 GWh (as of 01/2015)
2) Relating to the total electricity supplied to consumers from the public grid in 2013, i.e. 56 841 GWh (as of 01/2015)
Source: Green power settlement agent OeMAG, E-Control, February 2015 – preliminary values

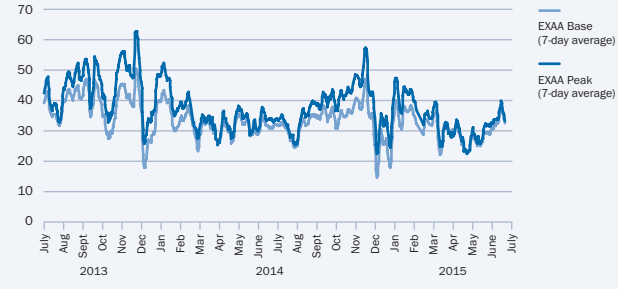
Wholesale markets

Electricity forward prices (€/MWh)



Source: EEX

Electricity spot prices (€/MWh)

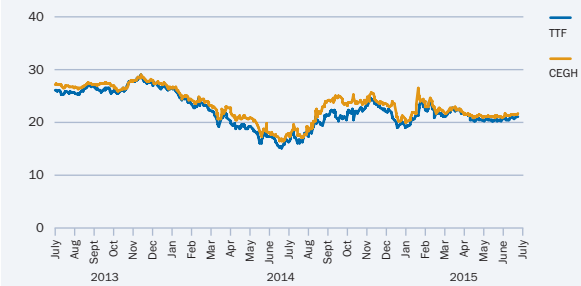


Source: EXAA

Electricity forward and spot prices in €/MWh				
	EEX Peak		EEX Base	
	Day-ahead average	Y 2016 average	Day-ahead average	Y 2016 average
2013	43.13	48.57	37.78	38.60
2014	36.80	43.43	32.76	34.23
January 2014	43.97	46.17	35.87	35.92
February 2014	38.85	45.67	33.59	35.71
March 2014	33.75	44.70	31.04	34.90
April 2014	33.01	42.96	31.58	33.71
May 2014	31.82	42.67	30.63	33.50
June 2014	33.37	42.27	31.52	33.30
July 2014	34.08	42.62	31.88	33.74
August 2014	29.13	43.32	27.93	34.43
September 2014	38.63	43.34	34.79	34.28
October 2014	40.85	42.13	35.24	33.31
November 2014	43.68	43.22	36.37	34.31
December 2014	40.72	43.12	32.89	34.12
January 2015	35.06	40.48	28.72	31.82
February 2015	42.08	41.84	36.72	32.87
March 2015	34.37	41.00	31.32	32.27
April 2015	29.40	40.50	29.72	31.99
May 2015	26.16	39.95	25.36	31.60
June 2015	31.92	39.86	30.07	31.66

Source: EXAA, EEX

Gas spot market prices, in €/MWh



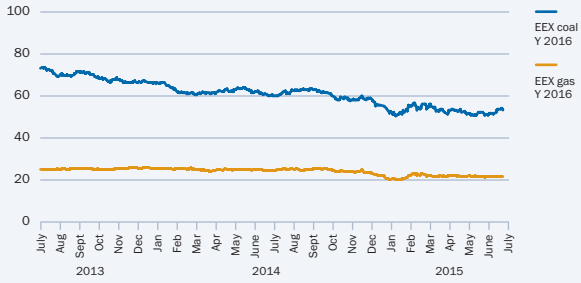
Sources: ICIS Heren, CEGH Exchange

Gas spot market prices, in €/MWh

	TTF (NL) average	CEGH (AT) average		TTF (NL) average	CEGH (AT) average
2013	26.42	26.67	September 2014	20.85	23.01
2014	26.99	27.16	October 2014	21.36	24.24
January 2014	26.28	26.72	November 2014	22.95	24.11
February 2014	23.85	24.52	December 2014	22.66	23.72
March 2014	22.79	23.71	January 2015	19.74	21.01
April 2014	20.38	21.84	February 2015	22.51	23.60
May 2014	19.05	20.80	March 2015	21.79	22.45
June 2014	17.38	18.42	April 2015	21.97	22.17
July 2014	16.42	17.58	May 2015	20.55	21.17
August 2014	17.39	18.35	June 2015	20.50	21.17

Sources: ICIS Heren, CEGH Exchange

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



Sources: EEX, OeNB, E-Control calculations

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

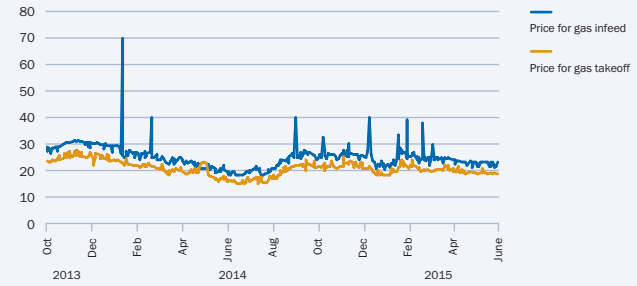
	Y 2016				
	Gas average	Coal average		Gas average	Coal average
January 2014	25.57	65.68	October 2014	24.54	59.57
February 2014	25.36	61.92	November 2014	24.08	58.57
March 2014	25.01	61.18	December 2014	22.90	57.12
April 2014	24.78	61.95	January 2015	20.42	51.99
May 2014	24.98	63.15	February 2015	22.43	54.79
June 2014	24.91	61.56	March 2015	21.97	54.45
July 2014	24.86	60.64	April 2015	21.99	52.79
August 2014	25.08	62.49	May 2015	21.82	51.58
September 2014	25.31	62.49	June 2015	21.66	52.12

Sources: EEX, OeNB, E-Control calculations

Gas import price					
	2002 = 100	Change in %		2002 = 100	Change in %
2003	103.82		2011	218.01	16.3
2004	102.00	–1.8	2012	240.63	9.4
2005	135.12	24.5	2013	241.84	0.5
2006	174.62	22.6	2014	200.64	–20.5
2007	160.87	–8.5	January 2015	192.13	–8.2
2008	226.46	29.0	February 2015	191.04	–0.6
2009	164.19	–37.9	March 2015	197.87	3.5
2010	182.52	10.0	April 2015	193.12	–2.5

Sources: Statistics Austria, E-Control calculations

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



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 2014	78.73	107.14	
February 2014	79.51	108.61	1.0
March 2014	78.13	107.89	–1.8
April 2014	78.15	107.94	0.0
May 2014	79.49	109.14	1.7
June 2014	82.43	112.04	3.6
July 2014	80.08	108.43	–2.9
August 2014	77.71	103.45	–3.1
September 2014	76.66	98.90	–1.4
October 2014	69.70	88.32	–10.0
November 2014	64.17	80.03	–8.6
December 2014	52.56	65.00	–22.1
January 2015	42.47	49.26	–23.8
February 2015	51.13	58.08	16.9
March 2015	52.17	56.79	2.0
April 2015	56.49	60.90	7.6
May 2015	58.93	65.68	4.1
June 2015	56.93	63.83	–3.5

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

CO_2 emissions forward prices in €/t

Source: EEX

CO_2 emissions forward prices in €/t

	EEX CO2 Y15 (MidDec)		EEX CO2 Y15 (MidDec)
2013	4.89	September 2014	6.16
2014	6.17	October 2014	6.21
January 2014	5.26	November 2014	6.97
February 2014	6.91	December 2014	7.00
March 2014	6.42	January 2015	7.06
April 2014	5.46	February 2015	7.33
May 2014	5.33	March 2015	6.84
June 2014	5.81	April 2015	7.14
July 2014	6.16	May 2015	7.48
August 2014	6.44	June 2015	7.50

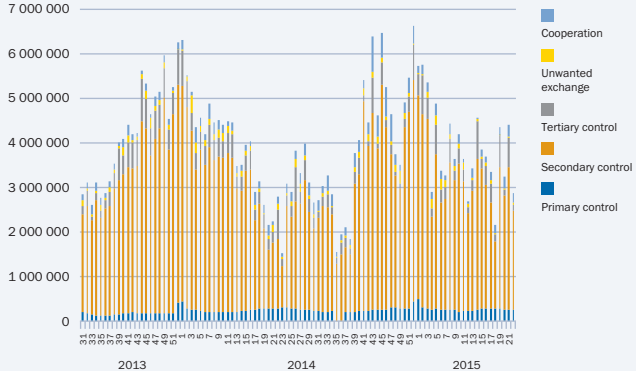
Source: EEX

Pellet price index (*)

	2008	2009	2010	2011	2012	2013	2014
Index 2000 = 100	84	92	92	100	96	104	**96**
Year-on-year change in %	–9.5	8.7	0.0	8.0	–4.2	7.7	**–8.3**

(*) Based on average annual values, corrected for inflation
Source: proPellets Austria

Costs of control energy market, in €

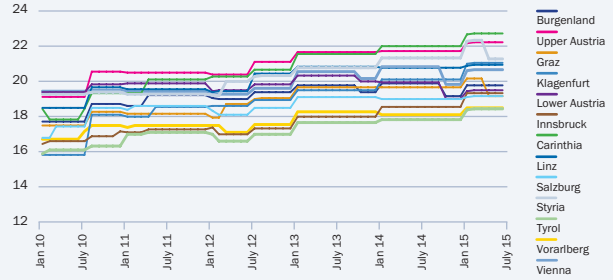


Source: APG

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

Retail markets

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

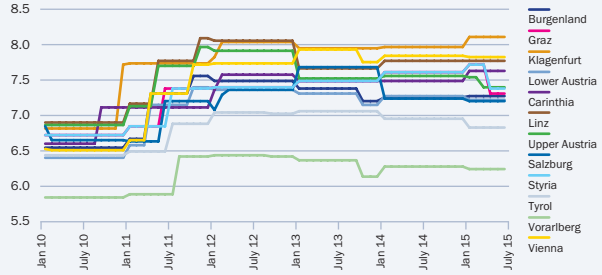


Source: E-Control, tariff calculator

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

	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2010	6.23	8.86	7.98	4.13	10.55	7.41
July 2010	6.23	8.86	8.03	4.13	10.81	7.46
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

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

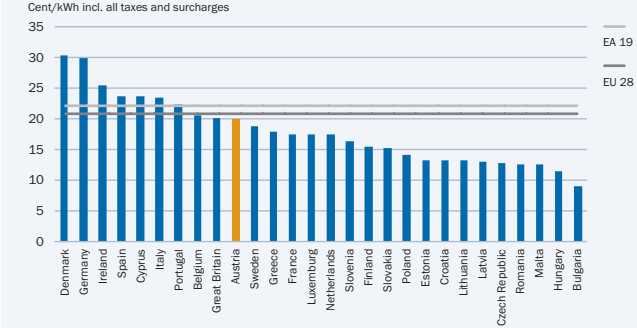


Source: E-Control, tariff calculator

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

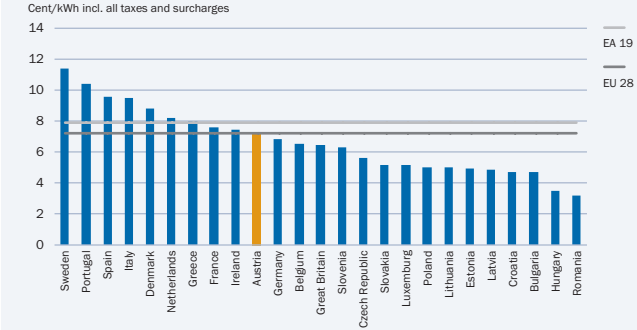
	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2010	2.44	3.22	2.99	2.43	3.91	3.09
July 2010	2.47	3.21	2.98	2.40	3.80	3.06
Jan 2011	2.51	3.44	3.18	2.30	3.98	3.07
July 2011	2.86	3.85	3.65	2.39	4.34	3.31
Jan 2012	3.03	4.01	3.79	2.48	4.56	3.62
July 2012	3.03	4.01	3.79	2.48	4.56	3.73
Jan 2013	3.25	4.02	3.81	2.76	4.34	3.55
July 2013	3.25	4.02	3.76	2.72	4.34	3.69
Jan 2014	3.09	4.01	3.69	2.72	3.93	3.60
July 2014	3.09	4.01	3.69	2.50	3.96	3.60
Jan 2015	2.99	4.01	3.66	–	–	–

Household electricity prices in Europe, H2 2014 (2 500 – 5 000 kWh)



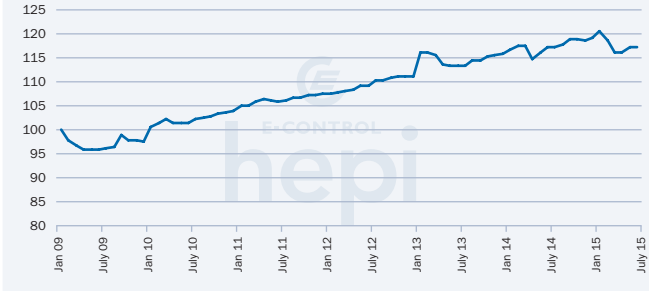
Source: Eurostat, as of 7 May 2015

Household gas prices in Europe, H2 2014 (5 555.6 – 55 556 kWh)



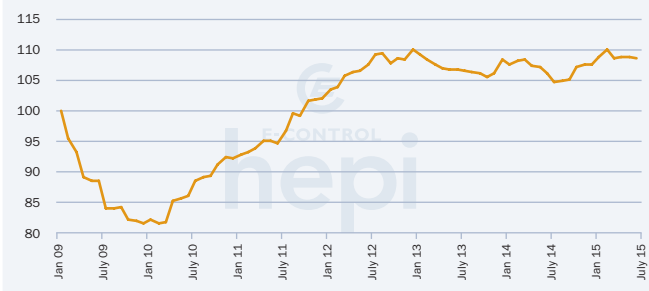
Source: Eurostat, as of 4 May 2015

Household Energy Price Index for Europe (HEPI) – electricity



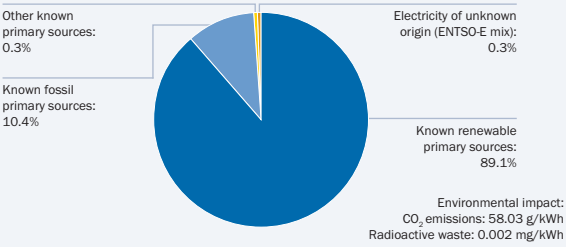
Sources: E-Control, MEKH and VaasaETT Ltd.

Household Energy Price Index for Europe (HEPI) – gas



Sources: E-Control, MEKH and VaasaETT

Electricity labelling in Austria in 2014



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): 11.190

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	=	3.6×10^{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
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: / From:	US gal	UK gal	bbl	ft3	l	m^3
	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
m^3 Cubic metre	264.2	220	6.289	35.3147	1 000	**1**

Source: IEA

Calorific values in different energy balances

Statistics Austria, arithmetic means			
Energy source	**Gigajoule / ...**	**Gross domestic consumption**	**Final energy consumption**
Hard coal	t	28.69	30.53
Lignite	t	20.91	20.91
Coke oven coke	t	29.00	29.00
Crude oil	t	42.72	–
Petrol	t	43.29	43.16
Other kerosene	t	43.30	43.30
Diesel	t	42.80	42.80
Gas oil	t	42.80	42.80
Fuel oil	t	39.63	41.40
Lubricants	t	7.79	31.36
Natural gas	1 000 cu m	36.36	36.52
Solid and liquid waste	t	11.64	15.39
Fuelwood	t	14.31	14.31
Biofuels	t	10.46	11.05
Geothermal energy etc.	MWh	3.59	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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