

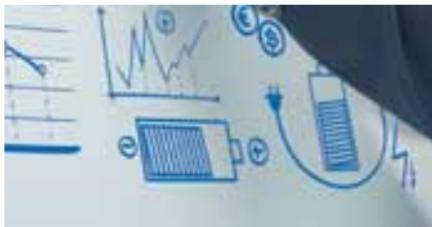


KEY STATISTICS 2014

E-CONTROL



A BETTER DEAL: TRANSFORMING  
NUMBERS INTO ANSWERS.



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](http://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



Martin Graf  
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 % (*)
2006	143.8	1.4	124.6	3.4	159.0	5.8
2007	146.9	2.1	136.2	8.5	172.3	7.7
2008	151.6	3.1	138.5	1.7	177.2	2.8
2009	152.4	0.5	144.1	3.9	189.1	6.3
2010	155.2	1.8	145.6	1.0	180.6	-4.7
2011	160.2	3.1	145.7	0.1	196.3	8.0
2012	164.2	2.4	146.9	0.8	206.0	4.7
2013	167.5	2.0	153.5	4.3	205.6	-0.2

(\*) average or annual change rates

Source: Statistics Austria

Gross domestic product		
	m€ (rate of 2005)	Change in % (*)
2006	254 243	3.7
2007	263 665	3.7
2008	267 452	1.4
2009	257 231	-3.8
2010	261 781	1.8
2011	269 201	2.8
2012	271 545	0.9
<b>2013</b>	<b>272 411</b>	<b>0.3</b>

(\*) average or annual change rates

Source: Oesterreichische Nationalbank (OeNB)

Population, annual average		
	Population numbers	Change in % (*)
1995	7 948 278	0.7
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
<b>2013</b>	<b>8 477 230</b>	<b>0.6</b>

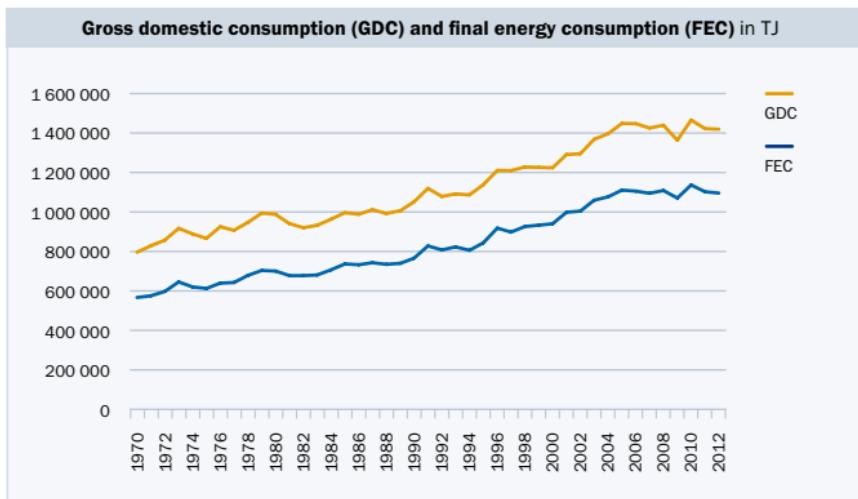
(\*) average or annual change rates

Source: Statistics Austria

Households in 1 000				
	Single-person households	Multi-person households	Total	Average household size (persons)
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	1 305	2 320	3 624	2.29
2011	1 324	2 326	3 650	2.28
2012	1 341	2 337	3 678	2.27
<b>2013</b>	<b>1 359</b>	<b>2 346</b>	<b>3 705</b>	<b>2.26</b>

Source: Statistics Austria

## Energy industry indicators

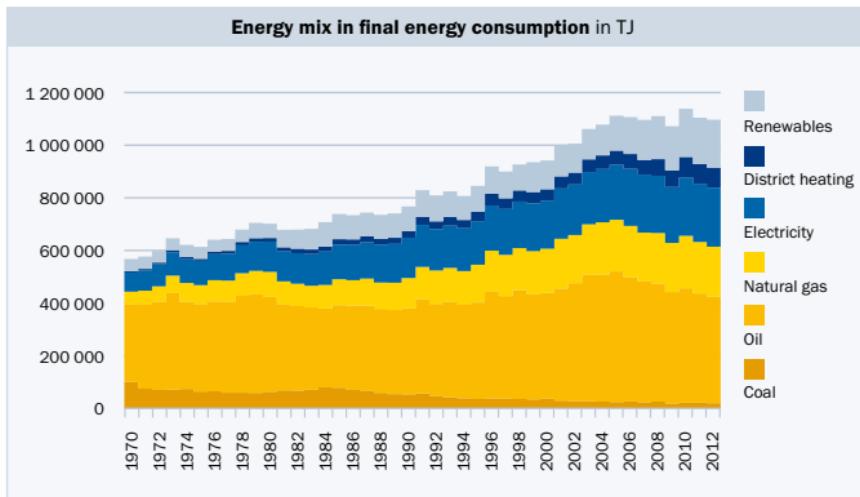


Source: Statistics Austria

Gross domestic consumption and final energy consumption in TJ		
	Gross domestic consumption	Final energy consumption
1995	1 139 773	844 827
2000	1 224 477	941 289
2005	1 449 592	1 111 432
2010	1 466 502	1 137 766
2011	1 423 123	1 103 364
<b>2012</b>	<b>1 420 785</b>	<b>1 096 188</b>

Source: Statistics Austria

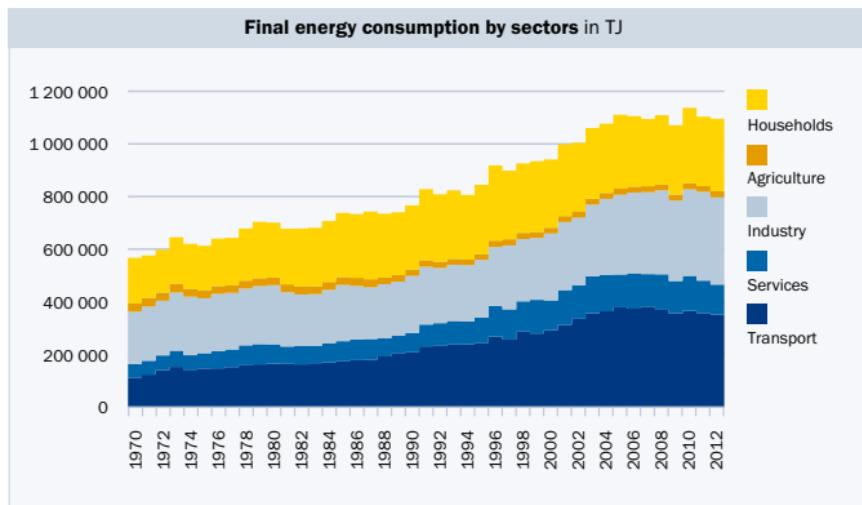
## ENERGY BALANCE



Source: Statistics Austria

Energy mix in final energy consumption in TJ							
	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
1995	35 615	364 910	144 612	166 123	35 515	98 052	<b>844 827</b>
2000	37 026	401 577	167 475	183 336	42 699	109 176	<b>941 289</b>
2005	23 933	496 129	196 521	207 768	54 082	133 000	<b>1 111 432</b>
2010	21 818	434 056	199 498	221 525	77 826	183 043	<b>1 137 766</b>
2011	21 833	414 418	195 823	221 442	74 004	175 844	<b>1 103 364</b>
<b>2012</b>	<b>19 896</b>	<b>404 249</b>	<b>189 875</b>	<b>224 142</b>	<b>76 119</b>	<b>181 908</b>	<b>1 096 188</b>

Source: Statistics Austria

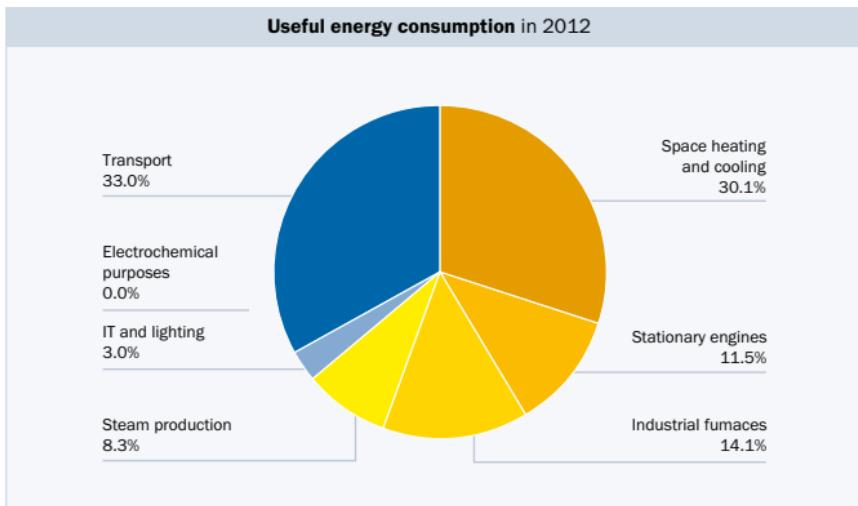


Source: Statistics Austria

Final energy consumption by sectors in TJ						
	Households	Agriculture	Industry	Services	Transport	Total
1995	262 859	22 492	218 402	96 385	244 689	<b>844 827</b>
2000	259 569	22 206	253 629	113 161	292 724	<b>941 289</b>
2005	281 017	22 917	303 500	124 746	379 252	<b>1 111 432</b>
2010	286 782	23 551	328 867	132 072	366 494	<b>1 137 766</b>
2011	262 894	22 065	337 488	123 493	357 424	<b>1 103 364</b>
<b>2012</b>	<b>275 141</b>	<b>23 642</b>	<b>331 797</b>	<b>113 733</b>	<b>351 874</b>	<b>1 096 188</b>

Source: Statistics Austria

## USEFUL ENERGY



Source: Statistics Austria

Useful energy consumption in 2012		
	TJ	Share in %
Space heating and cooling	329 748	30.1
Stationary engines	126 057	11.5
Industrial furnaces	154 681	14.1
Steam production	90 682	8.3
IT and lighting	33 099	3.0
Electrochemical purposes	407	0.0
Transport	361 514	33.0
<b>Total</b>	<b>1 096 188</b>	<b>100.0</b>

Source: Statistics Austria

## INTERNATIONAL ENERGY INDICATORS

**Per capita energy consumption in EU countries** in 2012, TJ/inhabitant



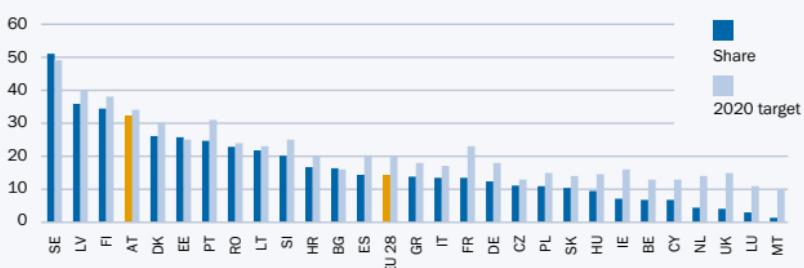
Source: Eurostat

**Gross domestic consumption of energy divided by GDP** in 2012, TJ/m€



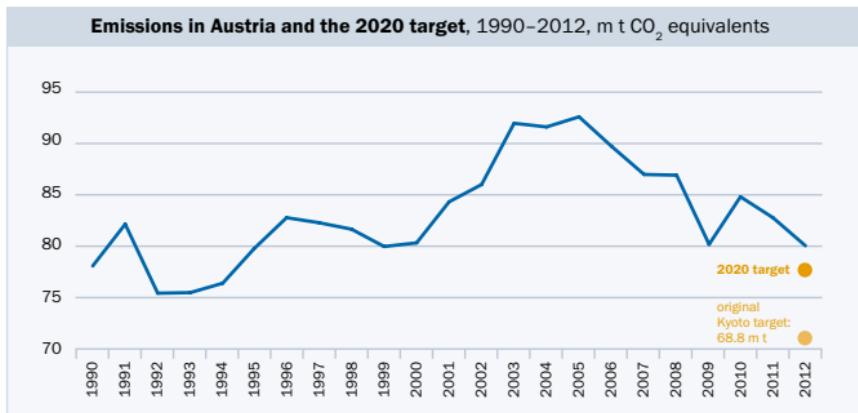
Source: Eurostat

**Renewables shares in the EU** in 2012 and the 2020 target, %

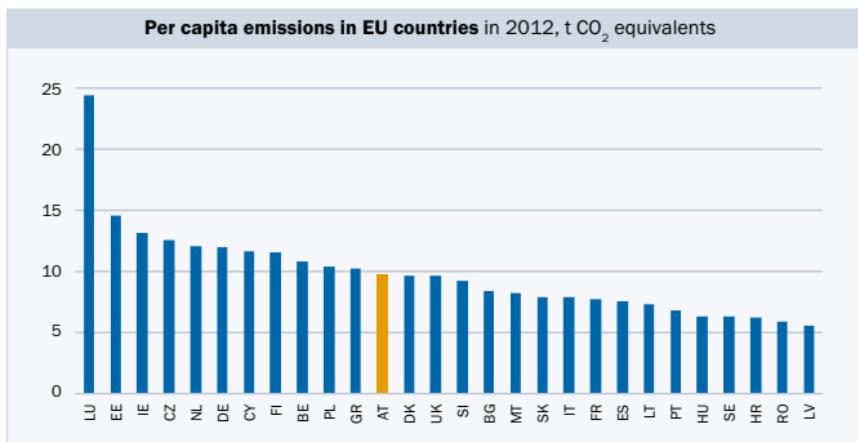


Source: Eurostat

## GREENHOUSE GAS EMISSIONS

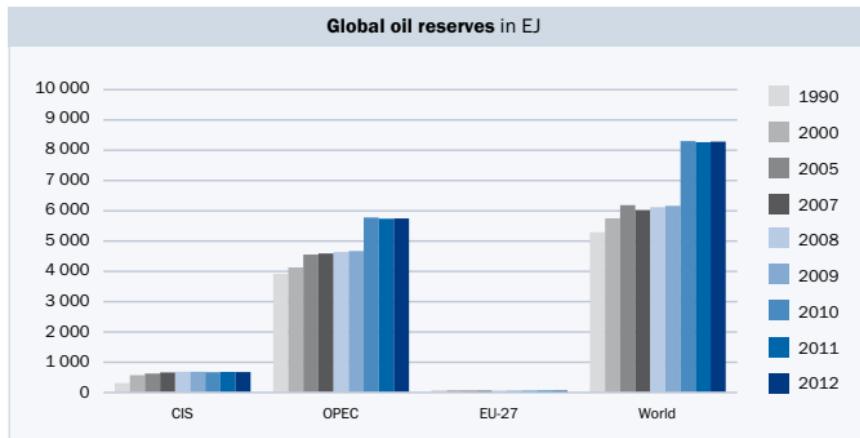


Source: UNFCCC

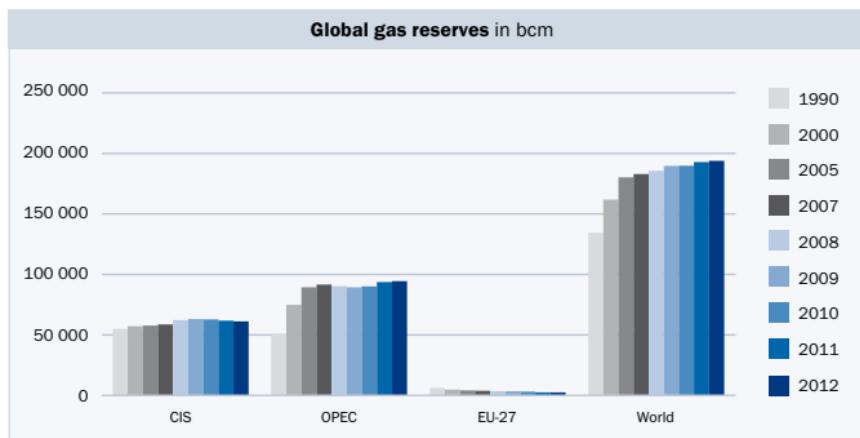


Source: Eurostat

## Energy reserves

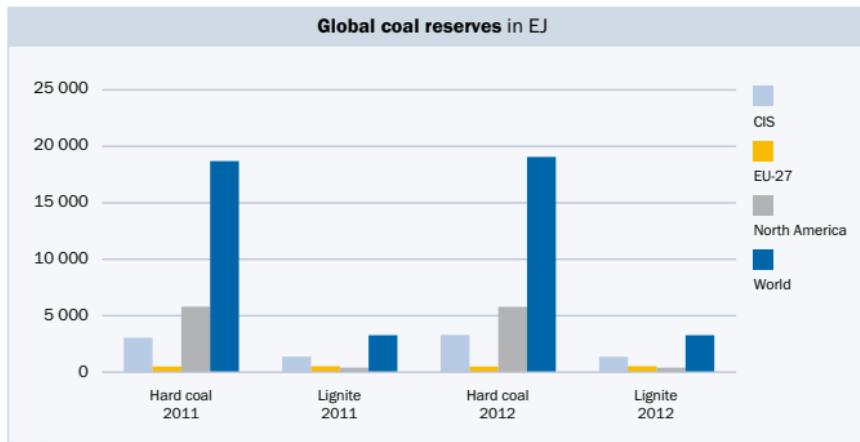


Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2012



Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2012

Please note: 2010 figures include unconventional gas sources.

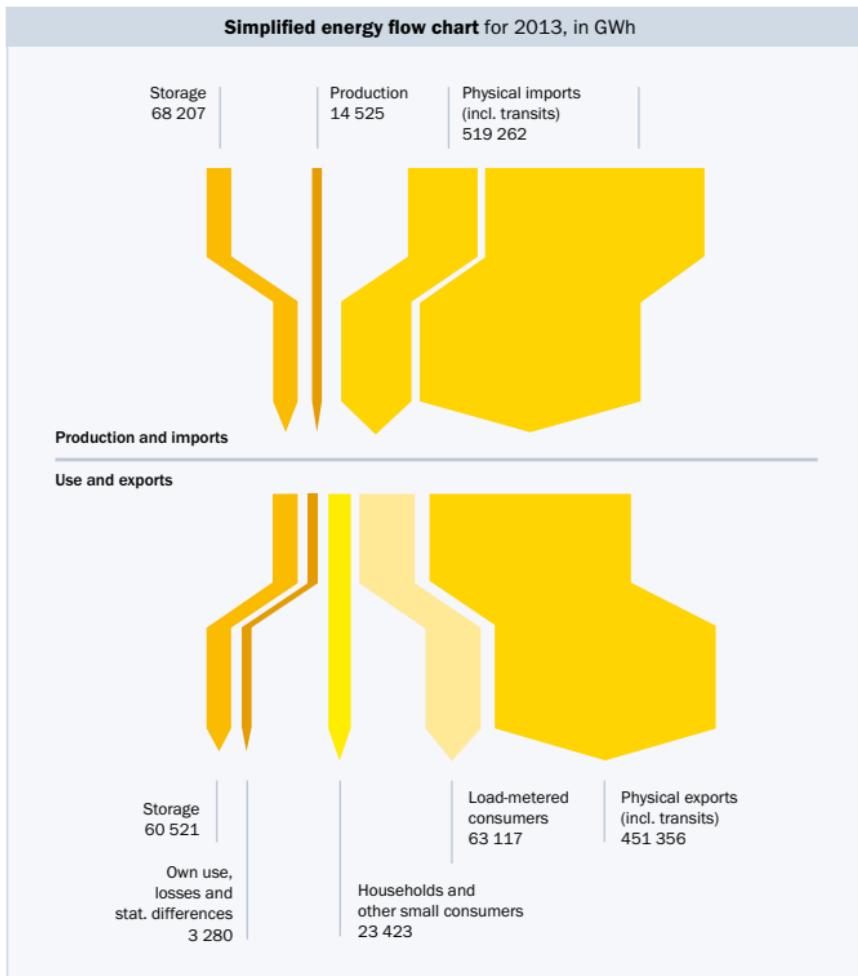


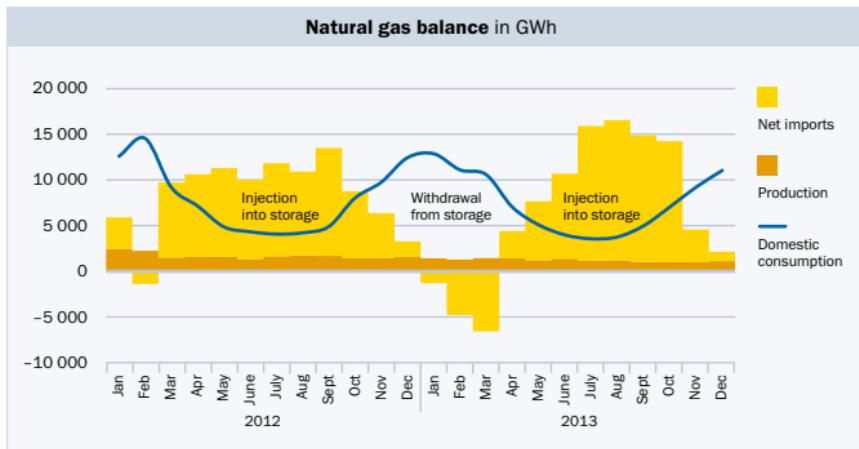
*Source: Federal Institute for Geosciences and Natural Resources, concise reports; DERA Natural Resources Information, Energy Study 2012*

Please note: More recent data of the German Federal Institute for Geosciences and Natural Resources were not available at the time of compiling this brochure.

# Operational statistics

## Natural gas in Austria





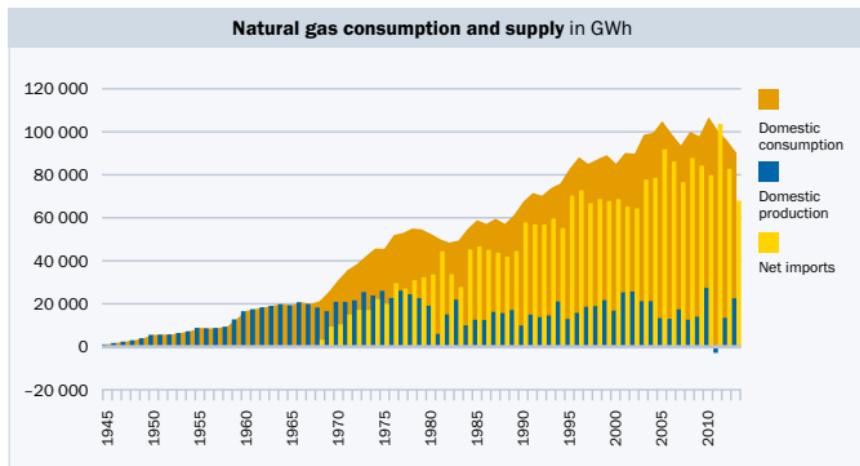
	m Nm <sup>3</sup>	GWh	Year-on-year change in %
<b>Supply to consumers (a)</b>	<b>7 758</b>	<b>86 890</b>	<b>-4.6</b>
Own use and losses (b) and statistical differences (c)	293	3 280	—
<b>Domestic consumption</b>	<b>8 051</b>	<b>90 170</b>	<b>-6.1</b>
Injection into storage (d)	5 404	60 521	13.5
Exports (d)	40 300	451 356	22.4
<b>Consumption and exports = production and imports</b>	<b>53 754</b>	<b>602 047</b>	<b>16.2</b>
Imports (d)	46 363	519 262	15.0
Production (d)	1 297	14 525	-28.2
Injection of biogas (d)	5	53	27.3
Withdrawal from storage (d)	6 090	68 207	47.5

(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 balance in GWh**

	Net imports	Domestic production (a)	Domestic consumption	Own use and losses (b)	Statistical difference (c)	Supply to consumers (d)
1995	<b>79 631</b>	1	3 265	<b>82 897</b>	70 275	12 621
2000	<b>80 514</b>		4 612	<b>85 126</b>	68 635	16 491
2005	<b>100 420</b>	-401	5 001	<b>105 020</b>	92 019	13 001
2010	<b>102 093</b>	803	4 022	<b>106 918</b>	79 817	27 100
2011	<b>95 585</b>	418	4 531	<b>100 534</b>	103 731	-3 198
2012	<b>91 059</b>	215	4 713	<b>95 988</b>	82 810	13 177
<b>2013</b>	<b>86 890</b>	<b>-437</b>	<b>3 717</b>	<b>90 170</b>	<b>67 906</b>	<b>22 264</b>

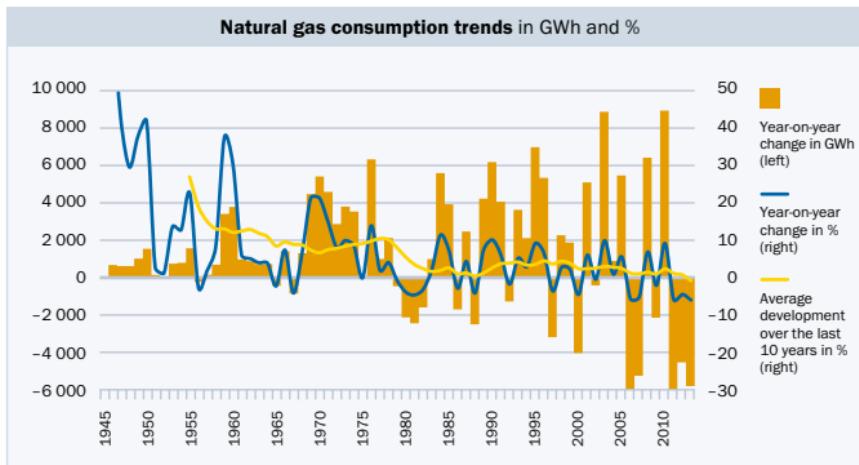
(a) Production and net storage movements

(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)

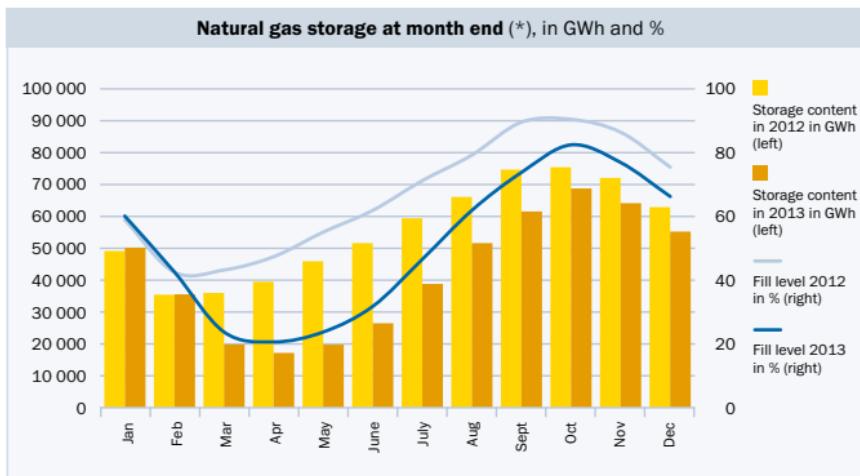


**Physical imports and exports of natural gas in 2013**

	Imports (*)		Exports (*)	
	in m Nm <sup>3</sup>	in GWh	in m Nm <sup>3</sup>	in GWh
Germany	7 208	80 731	6 094	68 247
Switzerland	10	112	65	731
Italy			28 337	317 379
Slovenia			1 747	19 562
Hungary			3 595	40 266
Slovakia	39 141	438 375	462	5 170
Czech Republic	4	43		
<b>Total</b>	<b>46 363</b>	<b>519 262</b>	<b>40 300</b>	<b>451 356</b>

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

## Natural gas infrastructure in Austria



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

<b>Natural gas storage facilities (*)</b>			
	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
2009	50 560	21 868	25 789
2010	51 906	21 966	25 905
2011	83 384	34 354	40 642
2012	83 384	34 354	40 642
<b>2013</b>	<b>83 384</b>	<b>33 134</b>	<b>40 538</b>

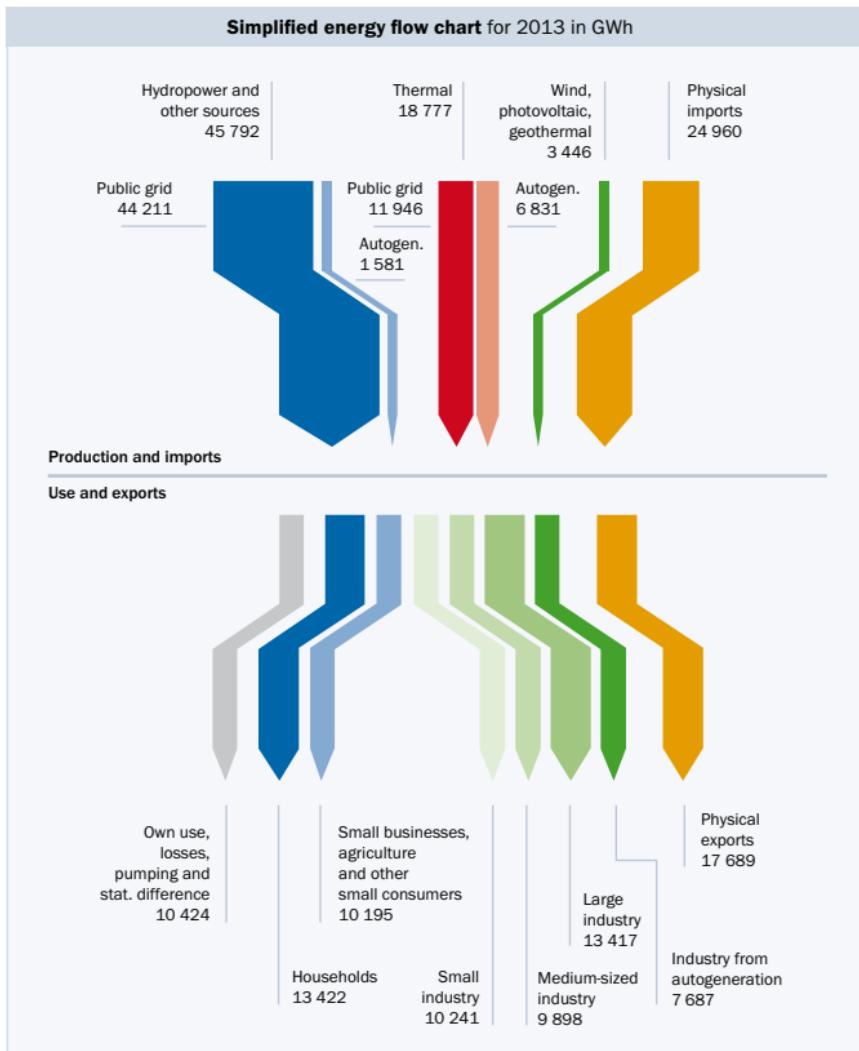
(\*) Includes all storage facilities on the Austrian territory; excludes facilities in neighbouring countries.

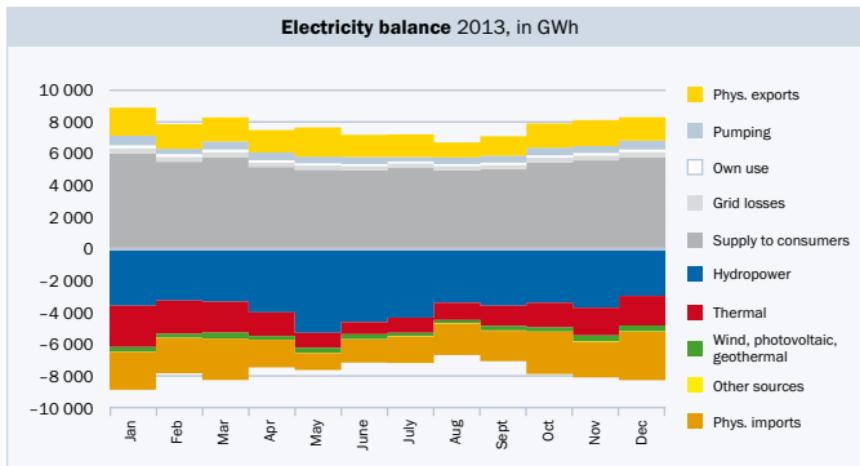
<b>Domestic gas production</b> in 2013		
	Max. production rate in Nm <sup>3</sup> per hour	Max. production rate in MWh per hour
<b>Total</b>	<b>20 636</b>	<b>231 120</b>

<b>Network length at year end</b> in km			
	Transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
1990 (*)	1 887	2 582	n.a.
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
<b>2013</b>	<b>3 431</b>	<b>3 668</b>	<b>34 476</b>

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

# Electricity in Austria (total electricity supply)

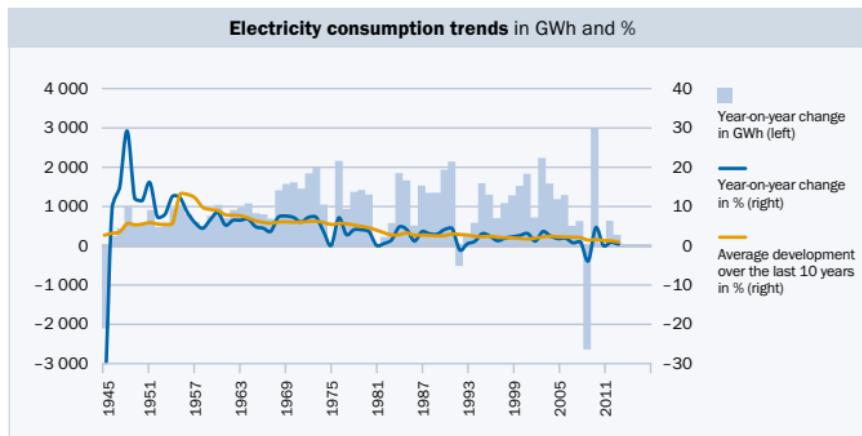




<b>Electricity balance 2013</b>				
	<b>2012 in GWh</b>	<b>2013 in GWh</b>	<b>Year-on-year change in GWh in %</b>	
Supply to consumers (1)	63 982	64 528	546	0.9
Grid losses	3 528	3 552	24	0.7
Own use	2 120	1 832	-288	-13.6
<b>Domestic consumption</b>	<b>69 630</b>	<b>69 912</b>	<b>281</b>	<b>0.4</b>
Pumping	5 563	5 374	-190	-3.4
Physical exports	20 627	17 689	-2 938	-14.2
<b>Use and exports = generation and imports</b>	<b>95 820</b>	<b>92 974</b>	<b>-2 846</b>	<b>-3.0</b>
Gross generation	Hydro	47 618	45 698	-1 920
	Thermal	22 072	18 777	-3 295
	Renewables (2)	2 586	3 446	860
	Other sources	115	94	33.3
Physical imports	23 430	24 960	1 530	6.5

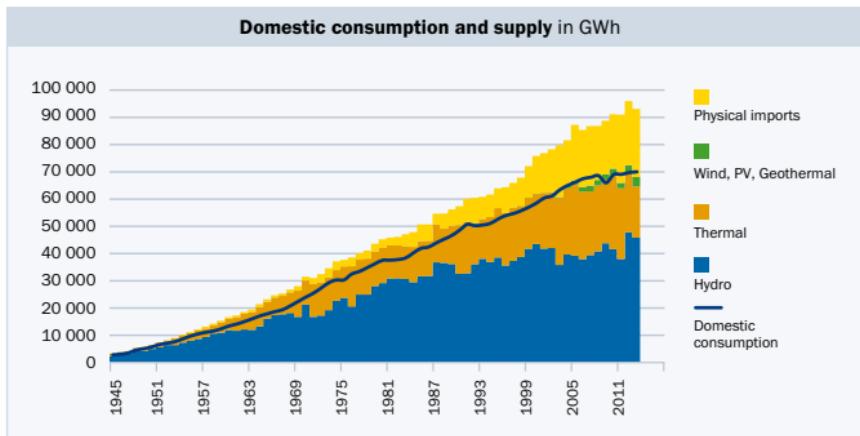
(1) Includes final energy consumption and the electricity consumption of the non-electricity energy sector

(2) Photovoltaics, wind and geothermal



**Electricity balance in GWh**

	Supply to consumers	Own use	Grid losses	Domestic consumption	Electricity for pumping	Physical exports	Use and exports = generation and imports
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
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	64 528	1 832	3 552	69 912	5 374	17 689	92 974



**Electricity balance in GWh**

	Gross generation					Physical imports	Generation and imports = use and exports
	Hydro-power	Thermal	Wind, PV, Geothermal	Other sources	Total		
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
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	45 698	18 777	3 446	94	68 015	24 960	92 974

Gross generation mix in 2013								
Energy source			GWh	Share in %				
Hydropower	Run of river	over 10 MW	25 409	37.4	55.6			
		up to 10 MW	5 140	7.6	11.2			
	Pumped storage	over 10 MW	14 610	21.5	32.0			
		up to 10 MW	539	0.8	1.2			
Total hydro			45 698	67.2	100.0			
Thermal	Fossil fuels and derivatives	Hard coal	4 203	6.2		22.4		
		Lignite	0	0.0		0.0		
		Coal derivatives (1)	1 894	2.8		10.1		
		Oil derivatives (1)	692	1.0		3.7		
		Natural gas	6 621	9.7		35.3		
	Total		13 410	19.7		71.4		
	Biofuels	Solid (2)	2 605	3.8		13.9		
		Liquid (2)	0	0.0		0.0		
		Gaseous (2)	583	0.9		3.1		
		Sewage and landfill gases (2)	48	0.1		0.3		
		Total (2)	3 236	4.8		17.2		
	Other biofuels (3)		1 394	2.0		7.4		
	Other fuels		737	1.1		3.9		
	<b>Total thermal</b>		<b>18 777</b>	<b>27.6</b>		<b>100.0</b>		
	(of which CHP)		(15 019)	(22.1)		(80.0)		
Renewables	Wind (4)		3 150	4.6	91.4			
	Photovoltaics (4)		295	0.4	8.6			
	Geothermal (4)		0	0.0	0.0			
	<b>Total renewables (4)</b>		<b>3 446</b>	<b>5.1</b>	<b>100.0</b>			
Other sources (5)			94	0.1				
<b>Total</b>			<b>68 015</b>	<b>100.0</b>				

(1) Coal and oil derivatives used for electricity generation

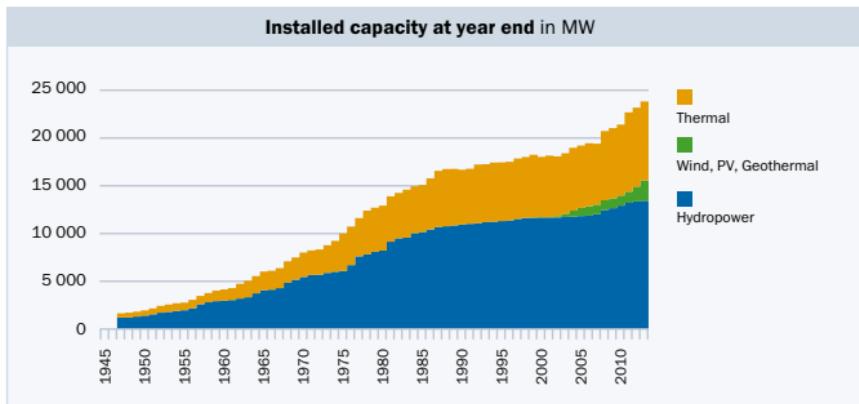
(2) Only biofuels as defined by Austrian law

(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

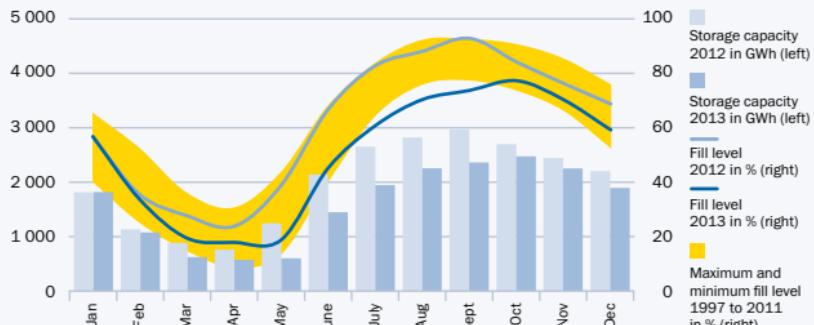


**Installed capacity at year end in MW**

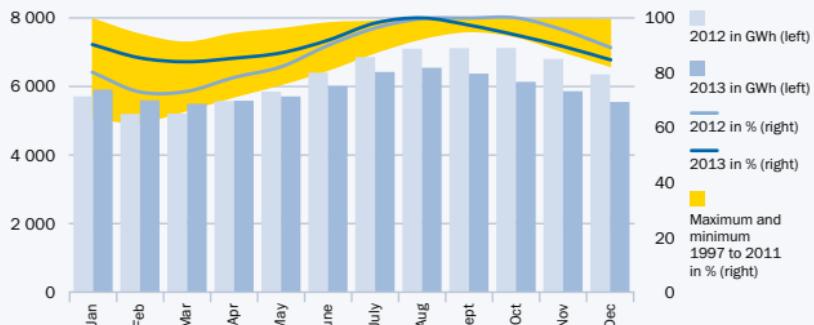
**Gross maximum capacity**

	Hydropower plants			Wind, PV, Geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
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
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	5 581	7 847	13 427	2 122	8 273	23 823	23 192

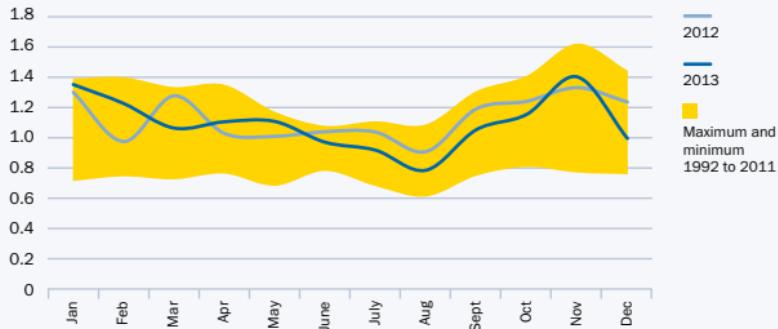
**Storage capacity and fill levels at month end – large reservoirs of public generators, in GWh and %**



**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**

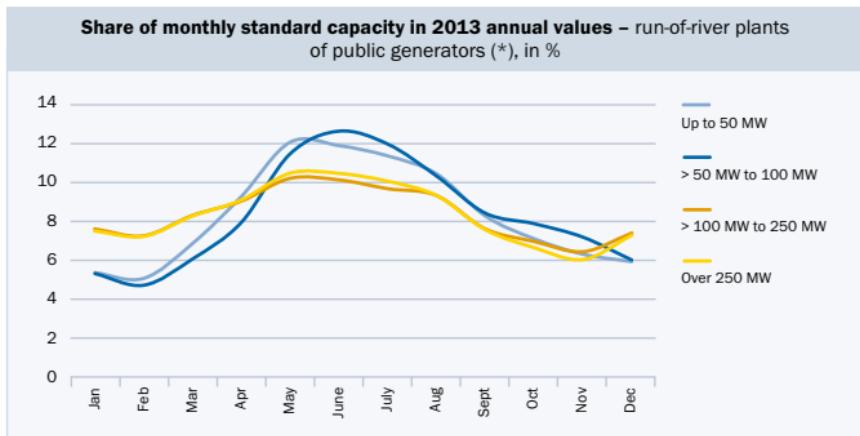
2012	2013	1992 to 2011 maximum	1992 to 2011 minimum
1.11	1.07	1.16	0.87

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
2005	85.3	42.7	5.3	93.3	19.7	1.1
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	21.5	20.2	85.3	20.9	4.6
<b>2013</b>	<b>81.5</b>	<b>18.2</b>	<b>13.7</b>	<b>85.7</b>	<b>19.7</b>	<b>3.6</b>

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

Firm capacity in 2013 – 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	165	250	–	–	415
Run-of-river plants without pondage	126	83	444	310	963
<b>Total</b>	<b>291</b>	<b>333</b>	<b>444</b>	<b>310</b>	<b>1 379</b>
Share in maximum capacity in %					
Run-of-river plants with pondage	46.8	46.3	–	–	46.5
Run-of-river plants without pondage	34.1	53.6	38.5	34.1	37.3
<b>Total</b>	<b>40.3</b>	<b>47.8</b>	<b>38.5</b>	<b>34.1</b>	<b>39.6</b>

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



(\*) 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
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
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
<b>2013</b>	<b>73.0</b>	<b>52.8</b>	<b>38.7</b>	<b>9 210</b>	<b>6 578</b>	<b>1 695</b>

(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 2013					
Voltage level	Overhead lines		Cables		Total
	km	Share in %	km	Share in %	km
380 kV	1 363	0.6	55	0.0	<b>1 417</b>
220 kV	1 854	0.8	3	0.0	<b>1 857</b>
110 kV	5 974	2.5	574	0.2	<b>6 547</b>
1 kV to 110 kV	27 598	11.6	38 429	16.1	<b>66 027</b>
Up to 1 kV	35 573	14.9	126 668	53.2	<b>162 242</b>
<b>Total</b>	<b>72 362</b>	<b>30.4</b>	<b>165 728</b>	<b>69.6</b>	<b>238 090</b>

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

High voltage substations in the public grid at year-end 2013		
Voltage level	Number of transformers	Total capacity in MVA
Primary voltage up to 200 kV	995	40 902
Primary voltage over 200 kV	80	27 905
<b>High voltage</b> to high, medium and low voltage	<b>1 075</b>	<b>68 807</b>

Medium voltage substations in the public grid at year-end 2013		
Voltage level	Number of transformers	Total capacity in MVA
<b>Medium voltage</b> to medium and low voltage	<b>76 375</b>	<b>29 833</b>

### Interruption of electricity supply, in minutes



# Market statistics

## Austrian gas market

Consumption structure					
Consumer category	Unit	Supply to consumers			
		2012	2013	Average (*)	Share (*)
Households	GWh	18 426	18 943	18 848	20.2%
Other small consumers	GWh	4 364	4 480	4 952	5.3%
Load-metered consumers	GWh	68 404	63 117	69 552	74.4%
Statistical difference	GWh	-134	350	102	0.1%
<b>Total supply to consumers</b>	<b>GWh</b>	<b>91 059</b>	<b>86 890</b>	<b>93 453</b>	<b>100.0%</b>
Number of metering points (MP)					
Consumer category	Unit	2012	2013	Average (*)	Share (*)
		1 000	1 273	1 274	94.3%
Other small consumers	1 000	70	71	71	5.2%
Load-metered consumers	1 000	8	8	7	0.5%
<b>Total number of metering points</b>	<b>1 000</b>	<b>1 350</b>	<b>1 350</b>	<b>1 351</b>	<b>100.0%</b>
Average consumption					
Consumer category	Unit	2012	2013	Average (*)	
		kWh/MP	14 480	14 892	14 800
Other small consumers	kWh/MP	62 207	63 374	69 927	
Load-metered consumers	kWh/MP	8 965 140	8 192 729	10 515 207	
<b>Total</b>	<b>kWh/MP</b>	<b>67 436</b>	<b>64 343</b>		

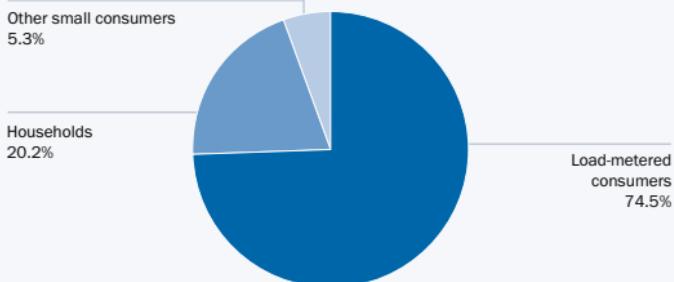
(\*) 2009 – 2013 average

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

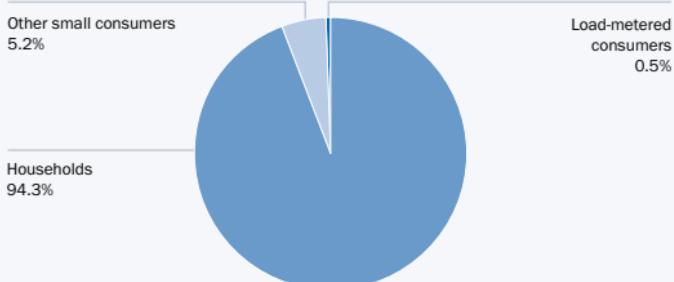
Other small consumers: Consumers with a standardised load profile marked HG or PG

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	2012	2013	Average (*)	Share (*)
Burgenland	2 228	2 301	<b>2 217</b>	<b>2.4%</b>
Carinthia	2 061	2 195	<b>1 941</b>	<b>2.1%</b>
Lower Austria	18 349	18 128	<b>19 192</b>	<b>20.6%</b>
Upper Austria	24 896	22 817	<b>25 393</b>	<b>27.2%</b>
Salzburg	3 185	3 119	<b>3 140</b>	<b>3.4%</b>
Styria	14 397	12 283	<b>13 103</b>	<b>14.0%</b>
Tyrol	3 657	3 814	<b>3 475</b>	<b>3.7%</b>
Vorarlberg	2 192	2 348	<b>2 246</b>	<b>2.4%</b>
Vienna	20 229	19 535	<b>22 645</b>	<b>24.3%</b>
Austria	Statistical difference	-134	350	—
<b>Total supply to consumers</b>		<b>91 059</b>	<b>86 890</b>	<b>93 351</b>
				<b>100.0%</b>

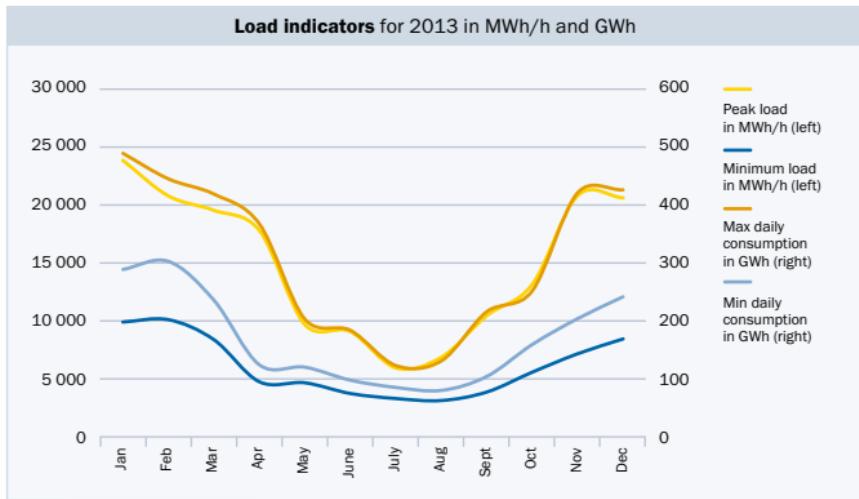
(\*) 2009 – 2013 average

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

**Consumption structure – number of metering points by grid zone** in 1 000

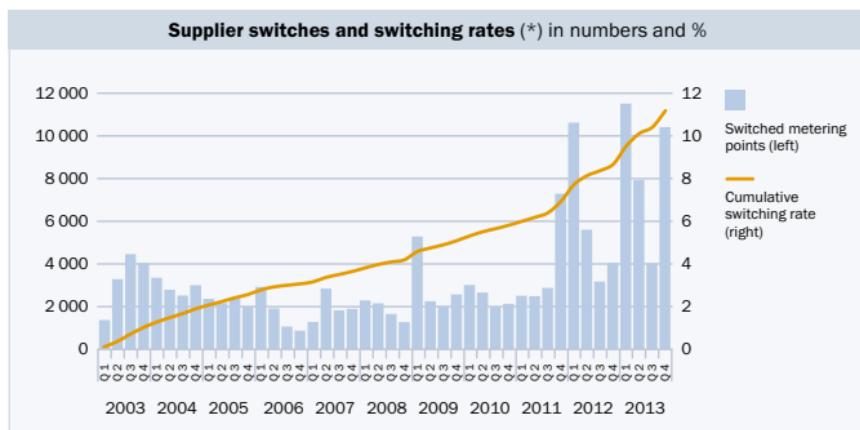
Federal province / grid zone	2012	2013	Average (*)	Share (*)
Burgenland	50	50	49	<b>3.7%</b>
Carinthia	14	14	14	<b>1.0%</b>
Lower Austria	292	293	291	<b>21.5%</b>
Upper Austria	149	148	149	<b>11.0%</b>
Salzburg	36	36	35	<b>2.6%</b>
Styria	67	67	66	<b>4.9%</b>
Tyrol	42	45	40	<b>2.9%</b>
Vorarlberg	34	34	33	<b>2.5%</b>
Vienna	668	663	673	<b>49.8%</b>
<b>Austria</b>	<b>1 350</b>	<b>1 350</b>	<b>1 351</b>	<b>100.0%</b>

(\*) 2009 – 2013 average



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
2009	23 800	3 377	17 769	512	87	3 850
2010	25 482	3 799	19 377	543	99	4 006
2011	24 801	3 831	18 706	523	102	3 854
2012	28 243	3 943	22 270	615	100	3 224
<b>2013</b>	<b>23 871</b>	<b>3 153</b>	<b>16 033</b>	<b>489</b>	<b>80</b>	<b>3 640</b>

## THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES



(\*) By number of metering points

Supplier switches and switching rates (*)					
	2009	2010	2011	2012	2013
Number of supplier switches					
Households	9 618	8 018	13 041	21 123	<b>31 051</b>
Other small consumers	2 249	1 557	1 752	1 813	<b>2 370</b>
Load-metered consumers	257	224	368	498	<b>431</b>
<b>Total</b>	<b>12 124</b>	<b>9 799</b>	<b>15 161</b>	<b>23 434</b>	<b>33 852</b>
Switching rates in %					
Households	0.8	0.6	1.0	1.7	<b>2.4</b>
Other small consumers	3.1	2.2	2.5	2.6	<b>3.4</b>
Load-metered consumers	6.2	3.6	5.0	6.5	<b>5.6</b>
<b>Total</b>	<b>0.9</b>	<b>0.7</b>	<b>1.1</b>	<b>1.7</b>	<b>2.5</b>

(\*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2009	2010	2011	2012	2013
Burgenland	213	139	386	636	<b>1 056</b>
Carinthia	31	28	76	214	<b>213</b>
Lower Austria	<b>4 058</b>	<b>3 142</b>	<b>4 517</b>	<b>7 478</b>	<b>11 005</b>
Upper Austria	<b>1 366</b>	<b>1 582</b>	<b>1 894</b>	<b>3 832</b>	<b>6 174</b>
Salzburg	137	65	91	190	<b>527</b>
Styria	<b>1 185</b>	<b>643</b>	<b>958</b>	<b>1 304</b>	<b>1 852</b>
Tyrol	39	2	3	12	<b>29</b>
Vorarlberg	14	2	56	73	<b>117</b>
Vienna	<b>5 081</b>	<b>4 196</b>	<b>7 180</b>	<b>9 695</b>	<b>12 879</b>
<b>Austria</b>	<b>12 124</b>	<b>9 799</b>	<b>15 161</b>	<b>23 434</b>	<b>33 852</b>

(\*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2009	2010	2011	2012	2013
Burgenland	0.4	0.3	0.8	1.3	<b>2.1</b>
Carinthia	0.2	0.2	0.5	1.5	<b>1.5</b>
Lower Austria	1.4	1.1	1.5	2.6	<b>3.8</b>
Upper Austria	0.9	1.1	1.3	2.6	<b>4.2</b>
Salzburg	0.4	0.2	0.3	0.5	<b>1.5</b>
Styria	1.8	1.0	1.4	2.0	<b>2.8</b>
Tyrol	0.1	0.0	0.0	0.0	<b>0.1</b>
Vorarlberg	0.0	0.0	0.2	0.2	<b>0.3</b>
Vienna	0.7	0.6	1.1	1.5	<b>1.9</b>
<b>Austria</b>	<b>0.9</b>	<b>0.7</b>	<b>1.1</b>	<b>1.7</b>	<b>2.5</b>

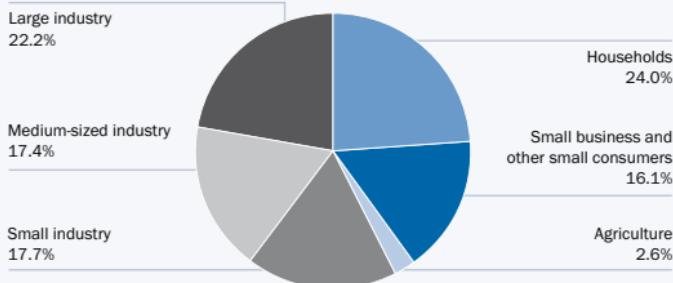
(\*) By number of metering points

# Austrian electricity market (public grid)

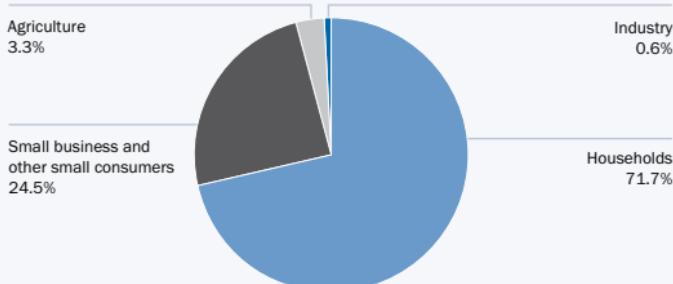
Consumption structure					
Consumer category	Unit	Supply to consumers			
		2012	2013	Average (*)	Share (*)
Households	GWh	13 318	13 422	13 303	24.0%
Small business and other small consumers	GWh	8 820	8 748	8 954	16.1%
Agriculture	GWh	1 449	1 448	1 464	2.6%
Small industry	GWh	10 038	10 241	9 811	17.7%
Medium-sized industry	GWh	9 825	9 898	9 630	17.4%
Large industry	GWh	12 538	13 417	12 282	22.2%
Statistical difference	GWh	-292	-333	—	—
<b>Total supply to consumers</b>	<b>GWh</b>	<b>55 697</b>	<b>56 841</b>	<b>55 445</b>	<b>100.0%</b>
Number of metering points (MP)					
Consumer category	Unit	2012	2013	Average (*)	Share (*)
Households	1 000	4 266	4 312	4 215	71.7%
Small business and other small consumers	1 000	1 434	1 425	1 438	24.5%
Agriculture	1 000	192	191	193	3.3%
Small industry	1 000	33	35	33	0.6%
Medium-sized industry	1 000	2	2	2	0.0%
Large industry	1 000	0	0	0	0.0%
<b>Total number of metering points</b>	<b>1 000</b>	<b>5 927</b>	<b>5 965</b>	<b>5 881</b>	<b>100.0%</b>
Average consumption					
Consumer category	Unit	2012	2013	Average (*)	
Households	kWh/MP	3 122	3 113	3 156	
Small business and other small consumers	kWh/MP	6 151	6 138	6 225	
Agriculture	kWh/MP	7 550	7 562	7 604	
Small industry	kWh/MP	301 518	295 991	298 289	
Medium-sized industry	kWh/MP	5 279 653	5 236 929	5 188 767	
Large industry	kWh/MP	61 162 532	65 449 549	62 094 195	
<b>Total</b>	<b>kWh/MP</b>	<b>9 396</b>	<b>9 528</b>	<b>9 429</b>	

(\*) 2009 – 2013 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

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

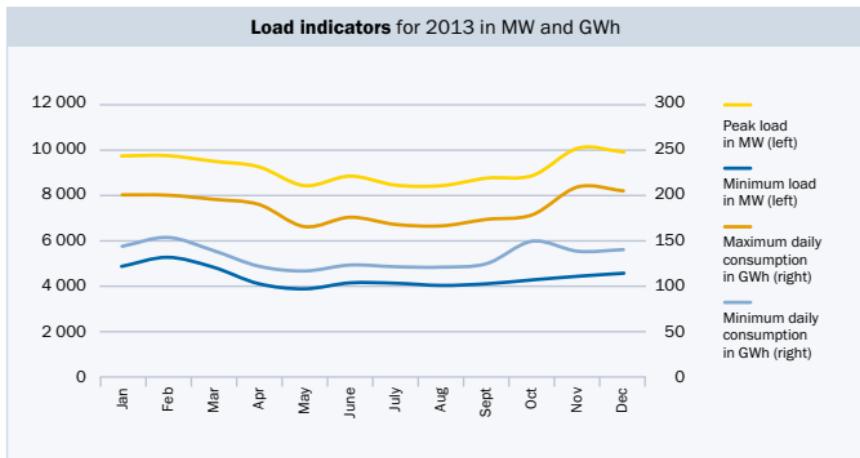
Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone	2012	2013	Average (*)	Share (*)	
Burgenland	1 580	1 634	1 590	2.9%	
Carinthia	4 154	4 153	4 107	7.4%	
Lower Austria	7 937	8 025	7 806	14.1%	
Upper Austria	10 056	10 801	9 848	17.8%	
Salzburg	3 621	3 632	3 580	6.5%	
Styria	8 431	8 536	8 294	15.0%	
Tyrol	5 552	5 577	5 537	10.0%	
Vorarlberg	2 566	2 604	2 565	4.6%	
Vienna	12 091	12 212	12 119	21.9%	
Austria	Statistical difference	-292	-333	—	—
	Supply to consumers	<b>55 697</b>	<b>56 841</b>	<b>55 445</b>	<b>100.0%</b>

(\*) 2009 – 2013 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	2012	2013	Average (*)	Share (*)	
Burgenland	199	201	197	3.4%	
Carinthia	384	386	382	6.5%	
Lower Austria	837	840	834	14.2%	
Upper Austria	988	998	977	16.6%	
Salzburg	425	428	421	7.2%	
Styria	920	923	915	15.6%	
Tyrol	462	467	458	7.8%	
Vorarlberg	220	223	217	3.7%	
Vienna	1 492	1 501	1 481	25.2%	
<b>Austria</b>	<b>5 927</b>	<b>5 965</b>	<b>5 881</b>	<b>100.0%</b>	

(\*) 2009 – 2013 average

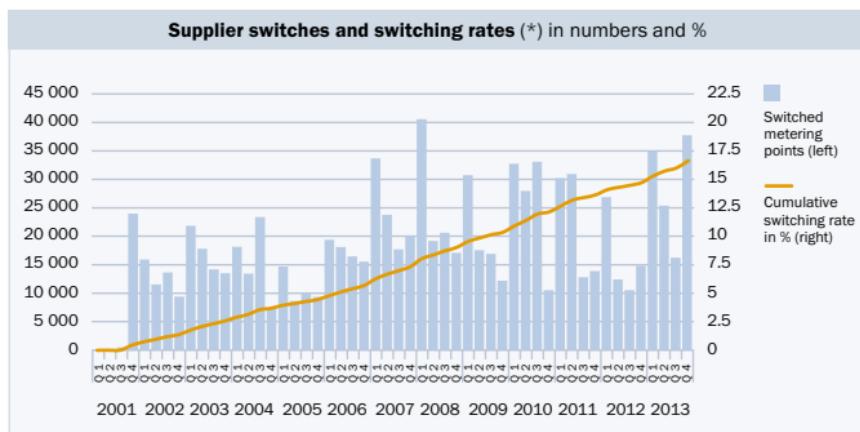


Load Indicators						
	Annual peak load	Annual minimum load	Maximum daily min. load	Daily baseload supply	Peak load utilisation time	Load factor (M)
	MW	MW	MW	GWh	h	
2009	9 698	3 418	6 581	42 101	5 865	0.67
2010	9 749	3 704	6 951	43 807	6 021	0.69
2011	9 716	3 754	6 451	43 706	6 041	0.69
2012	10 113	3 894	6 785	44 189	5 873	0.67
<b>2013</b>	<b>10 092</b>	<b>3 887</b>	<b>6 724</b>	<b>45 341</b>	<b>6 005</b>	<b>0.69</b>

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



(\*) By number of metering points

Supplier switches and switching rates (*)					
Consumer category	2009	2010	2011	2012	2013
Number of supplier switches					
Households	48 245	69 781	60 007	40 540	<b>78 083</b>
Other small consumers	27 597	31 407	26 292	21 711	<b>32 685</b>
Load-metered consumers	1 609	3 214	1 603	2 430	<b>3 467</b>
<b>Total</b>	<b>77 451</b>	<b>104 402</b>	<b>87 902</b>	<b>64 681</b>	<b>114 235</b>
Switching rates in %					
Households	1.2	1.7	1.4	1.0	<b>1.8</b>
Other small consumers	1.7	1.9	1.6	1.3	<b>2.0</b>
Load-metered consumers	4.8	9.3	4.6	6.9	<b>9.4</b>
<b>Total</b>	<b>1.3</b>	<b>1.8</b>	<b>1.5</b>	<b>1.1</b>	<b>1.9</b>

(\*) By number of metering points

<b>Supplier switches (*) by grid zone</b>					
Federal province / grid zone	2009	2010	2011	2012	2013
Burgenland	1 351	1 402	2 048	1 171	<b>2 926</b>
Carinthia	2 855	3 760	2 671	2 585	<b>4 856</b>
Lower Austria	<b>14 785</b>	<b>21 580</b>	<b>16 295</b>	<b>12 344</b>	<b>19 691</b>
Upper Austria	10 596	20 077	20 345	14 181	<b>30 599</b>
Salzburg	1 087	1 476	1 941	1 547	<b>1 651</b>
Styria	21 796	26 180	14 271	11 808	<b>21 910</b>
Tyrol	1 377	1 706	1 705	1 916	<b>2 394</b>
Vorarlberg	534	607	961	1 188	<b>1 285</b>
Vienna	23 070	27 614	27 665	17 941	<b>28 923</b>
<b>Austria</b>	<b>77 451</b>	<b>104 402</b>	<b>87 902</b>	<b>64 681</b>	<b>114 235</b>

(\*) By number of metering points

<b>Switching rates (*) by grid zone in %</b>					
Federal province / grid zone	2009	2010	2011	2012	2013
Burgenland	0.7	0.7	1.0	0.6	<b>1.5</b>
Carinthia	0.8	1.0	0.7	0.7	<b>1.3</b>
Lower Austria	<b>1.8</b>	2.6	2.0	1.5	<b>2.3</b>
Upper Austria	1.1	2.1	2.1	1.4	<b>3.1</b>
Salzburg	0.3	0.4	0.5	0.4	<b>0.4</b>
Styria	2.4	2.9	1.6	1.3	<b>2.4</b>
Tyrol	0.3	0.4	0.4	0.4	<b>0.5</b>
Vorarlberg	0.3	0.3	0.4	0.5	<b>0.6</b>
Vienna	1.6	1.9	1.9	1.2	<b>1.9</b>
<b>Austria</b>	<b>1.3</b>	<b>1.8</b>	<b>1.5</b>	<b>1.1</b>	<b>1.9</b>

(\*) By number of metering points

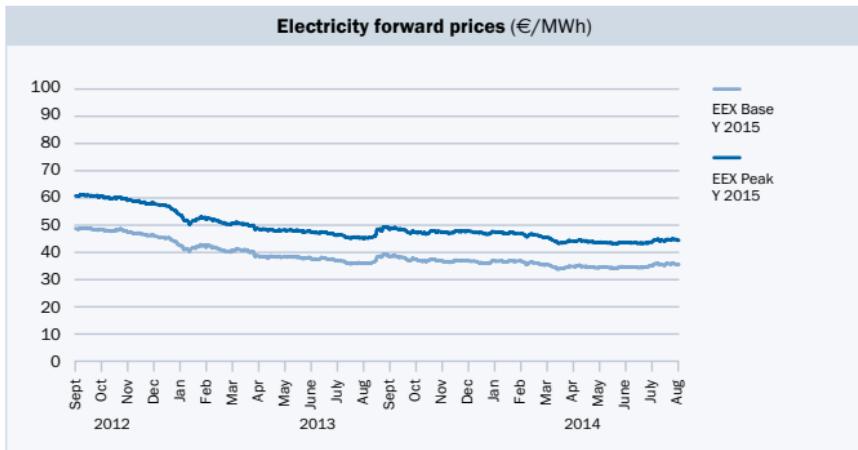
<b>Green electricity injection and support payments</b> (Austria, 2013 and 2012)				
Primary energy source	Injection in GWh	Net support in m €	Supported green electricity share in total supply, in %	Average support in cent/kWh
<b>2013</b>				<b>(1)</b>
<b>Supported small hydro</b>	<b>1 371</b>	<b>66.6</b>	<b>2.4%</b>	<b>4.86</b>
<b>Other renewables</b>	<b>5 769</b>	<b>680.4</b>	<b>10.1%</b>	<b>11.79</b>
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	0.0003%	11.83
Photovoltaics	215	61.7	0.38%	28.67
Sewage and landfill gas	26	1.4	0.05%	5.42
Geothermal	0.31	0.012	0.0005%	3.85
<b>Total small hydro and other renewables</b>	<b>7 140</b>	<b>747.1</b>	<b>12.5%</b>	<b>10.46</b>
<b>2012</b>				<b>(2)</b>
<b>Supported small hydro</b>	<b>1 095</b>	<b>57.3</b>	<b>2.0%</b>	<b>5.23</b>
<b>Other renewables</b>	<b>5 056</b>	<b>599.6</b>	<b>9.1%</b>	<b>11.86</b>
Wind	2 386	189.8	4.3%	7.95
Wastes with high biog. fraction	1 983	275.6	3.6%	13.90
Biogas (*)	554	95.4	1.0%	17.22
Liquid biomass	0.3	0.04	0.001%	12.40
Photovoltaics	101	36.8	0.18%	36.34
Sewage and landfill gas	31	1.9	0.06%	6.19
Geothermal	0.7	0.03	0.001%	4.85
<b>Total small hydro and other renewables</b>	<b>6 152</b>	<b>657.0</b>	<b>11.0%</b>	<b>10.68</b>

(\*) incl. operation markups (for 2013 and H2 2012)/fuel/feedstock markups (for H1 2012)

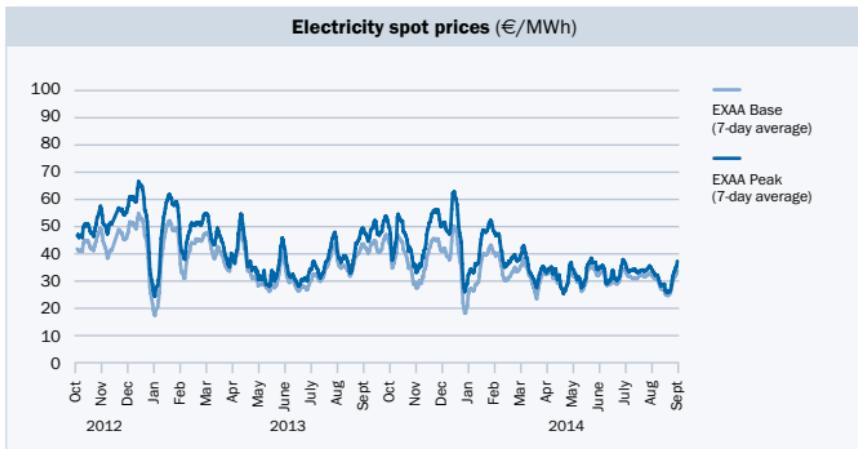
(1) Relating to the total electricity supplied to consumers from the public grid in 2013, i.e. 56 928 GWh  
(as of 01/2014)2) Relating to the total electricity supplied to consumers from the public grid in 2011, i.e. 55 685 GWh  
(as of 08/2013)

Source: Green power settlement agent OeMAG, E-Control, February 2013 – preliminary values

## Wholesale markets



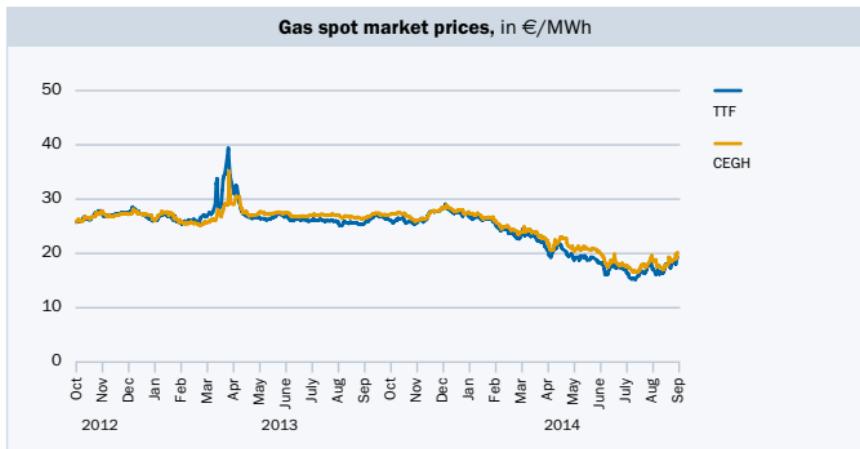
Source: EEX



Source: EXAA

<b>Electricity forward and spot prices in €/MWh</b>				
	<b>EEX Peak</b>		<b>EEX Base</b>	
	Day-ahead average	Y 2015 average	Day-ahead average	Y 2015 average
2012	48.51	62.11	42.60	50.00
2013	43.13	48.73	37.78	38.67
January 2013	51.58	54.37	43.31	43.20
February 2013	51.29	52.14	44.62	42.06
March 2013	43.09	50.86	39.10	40.81
April 2013	40.99	49.28	37.92	39.45
May 2013	35.18	48.03	32.06	38.28
June 2013	30.00	47.58	27.82	37.82
July 2013	39.29	46.66	36.42	37.23
August 2013	41.78	45.30	38.23	35.95
September 2013	47.50	48.26	41.71	38.31
October 2013	44.03	47.52	37.72	37.34
November 2013	48.16	47.33	39.22	36.83
December 2013	45.31	47.55	35.75	36.82
January 2014	43.97	47.07	35.87	36.35
Februar 2014	38.85	46.63	33.59	36.42
March 2014	33.75	45.60	31.04	35.48
April 2014	33.01	43.83	31.58	34.43
May 2014	31.82	43.70	30.63	34.45
June 2014	33.37	43.36	31.52	34.37
July 2014	34.08	43.69	31.88	34.87
August 2014	29.13	44.54	27.93	35.61

Source: EXAA, EEX

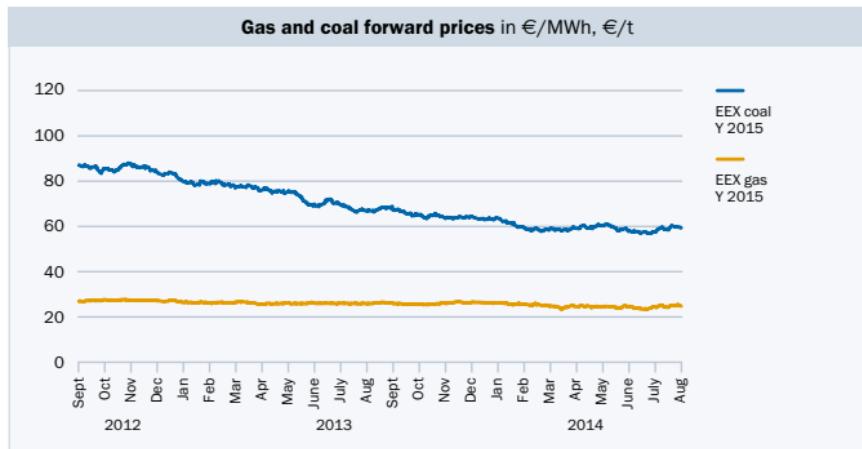


Sources: ICIS Heren, CEGH Exchange

**Gas spot market prices, in €/MWh**

	TTF (NL) average	CEGH (AT) average		TTF (NL) average	CEGH (AT) average
2012	25.06	26.12	October 2013	25.96	26.96
2013	26.99	27.16	November 2013	27.18	27.25
January 2013	26.57	26.86	December 2013	27.72	27.96
February 2013	26.20	25.53	January 2014	26.28	26.72
March 2013	31.40	27.87	February 2014	23.85	24.52
April 2013	28.12	28.14	March 2014	22.79	23.71
May 2013	26.71	27.42	April 2014	20.38	21.84
June 2013	26.23	26.94	May 2014	19.05	20.80
July 2013	26.09	27.11	June 2014	17.38	18.42
August 2013	25.55	26.66	July 2014	16.42	17.58
September 2013	26.49	27.10	August 2014	17.39	18.35

Sources: ICIS Heren, CEGH Exchange



Source: EEX

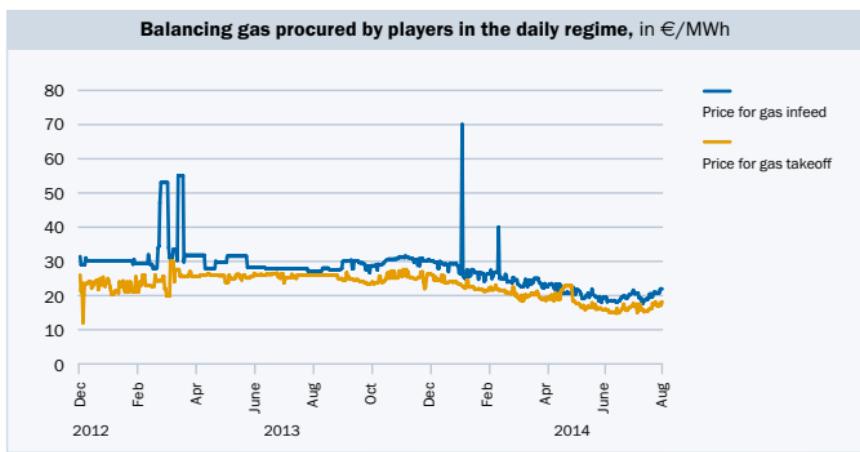
**Gas and coal forward prices in €/MWh, €/t**

Y 2015					
	Gas average	Coal average		Gas average	Coal average
January 2013	26.81	81.04	October 2013	25.67	65.03
February 2013	26.37	79.12	November 2013	26.05	64.30
March 2013	26.49	78.19	December 2013	26.50	63.97
April 2013	26.04	76.82	January 2014	26.20	62.94
May 2013	25.99	75.13	February 2014	25.62	59.66
June 2013	26.10	70.35	March 2014	25.07	58.62
July 2013	26.03	70.13	April 2014	24.52	59.05
August 2013	26.01	67.00	May 2014	24.59	60.16
September 2013	26.17	67.79	June 2014	24.36	58.46

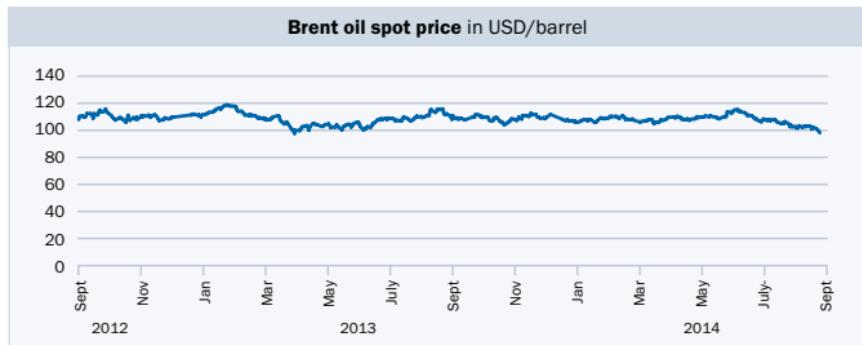
Source: EEX

Gas import price					
	2002 = 100	Change in %		2002 = 100	Change in %
2002	100.00		2011	218.01	16.3
2003	103.82	3.7	2012	240.63	9.4
2004	102.00	-1.8	2013	241.84	0.5
2005	135.12	24.5	January 2014	242.85	0.1
2006	174.62	22.6	February 2014	237.15	-2.4
2007	160.87	-8.5	March 2014	225.77	-5.0
2008	226.46	29.0	April 2014	215.33	-4.8
2009	164.19	-37.9	May 2014	200.06	-7.6
2010	182.52	10.0	June 2014	190.53	-5.0

Source: Statistics Austria

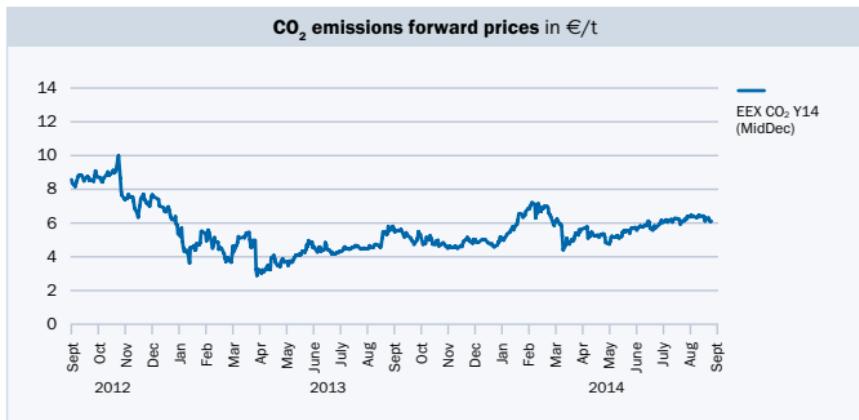


Source: Austrian Gas Clearing and Settlement (AGCS)



Source: Erdöl-Vereinigung (Union Pétrolière)

<b>Brent oil spot price</b>			
	€/ barrel	USD/ barrel	Month-on-month change of € in %
January 2013	84.22	112.12	
February 2013	86.99	116.20	3.2
March 2013	84.53	109.58	-2.9
April 2013	79.36	103.36	-6.5
May 2013	79.49	103.18	0.2
June 2013	78.16	103.08	-1.7
July 2013	81.90	107.11	4.6
August 2013	82.64	109.99	0.9
September 2013	83.38	111.25	0.9
October 2013	80.19	109.44	-4.0
November 2013	79.87	107.77	-0.4
December 2013	80.55	110.25	0.9
January 2014	78.73	107.14	-2.3
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



Source: EEX

**CO<sub>2</sub> emissions forward prices in €/t**

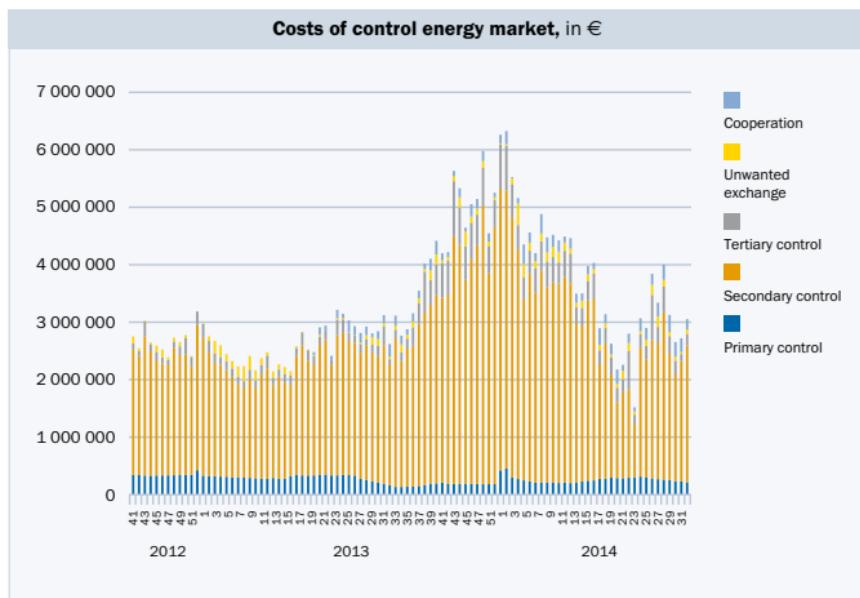
	EEX CO <sub>2</sub> Y14 (MidDec)		EEX CO <sub>2</sub> Y14 (MidDec)
2012	8.48	September 2013	5.39
2013	4.69	October 2013	5.07
January 2013	5.62	November 2013	4.69
February 2013	4.96	December 2013	4.91
March 2013	4.39	January 2014	5.07
April 2013	4.07	February 2014	6.61
May 2013	3.74	March 2014	6.19
June 2013	4.47	April 2014	5.28
July 2013	4.40	May 2014	5.15
August 2013	4.58	June 2014	5.63

Source: EEX

<b>Pellet price index (*)</b>							
	2007	2008	2009	2010	2011	2012	2013
Index 2000 = 100	92	84	92	92	100	96	104
Year-on-year change in %	-13.0	-9.5	8.7	0.0	8.0	-4.2	7.7

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

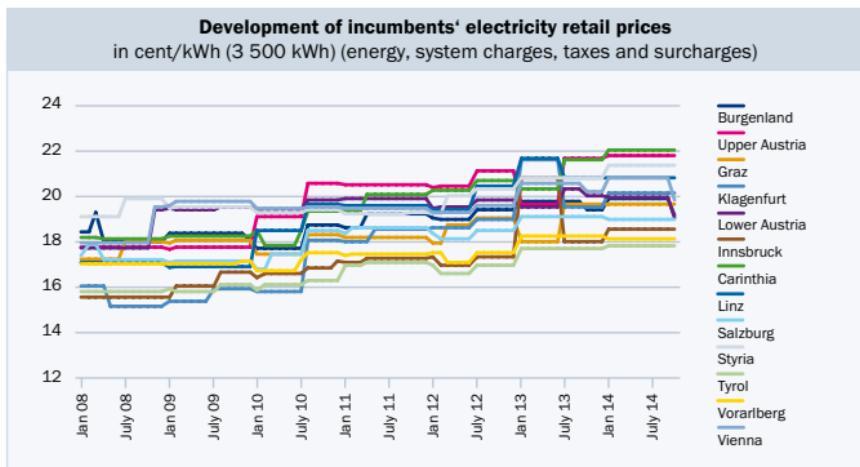
Source: proPellets Austria



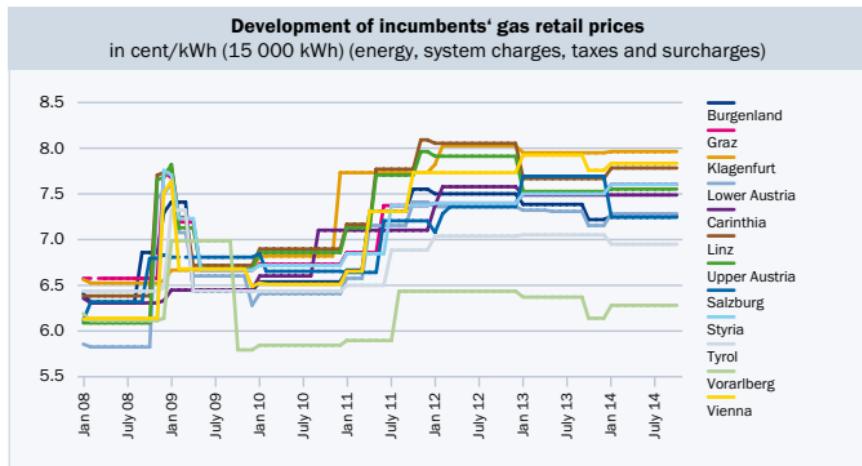
Source: APG

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

## Retail markets

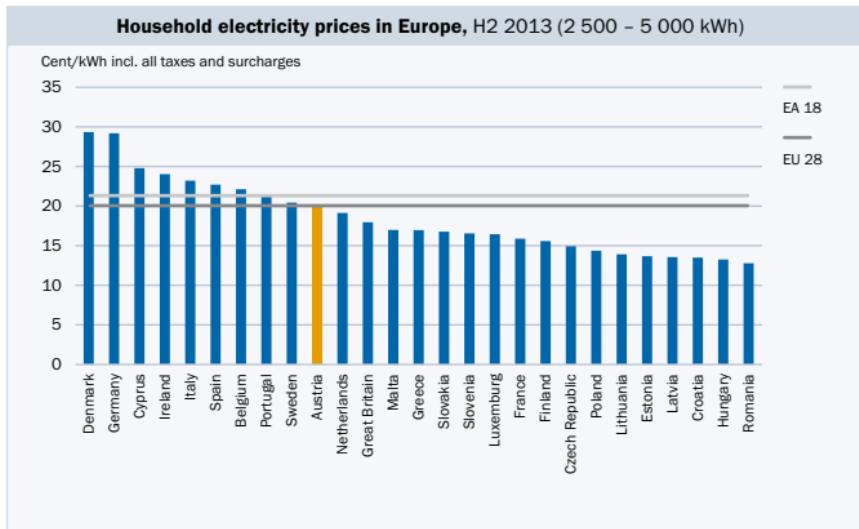


Development of electricity retail prices in cent/kWh (3 500 kWh)							
	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted			
	Minimum	Maximum	Average	Minimum	Maximum	Average	
Jan 2010	6.02	8.58	7.60	4.13	10.55	7.42	
July 2010	6.42	9.09	7.60	4.13	10.81	7.46	
Jan 2011	5.89	8.58	7.64	4.13	10.81	7.60	
July 2011	6.16	8.58	7.71	4.13	10.61	7.71	
Jan 2012	6.31	8.58	7.64	4.33	11.06	7.85	
July 2012	6.13	8.38	7.54	4.15	10.65	7.68	
Jan 2013	6.12	8.75	7.60	4.03	10.15	7.59	
July 2013	6.12	8.75	7.60	4.03	10.50	7.45	
Jan 2014	6.12	8.75	7.56	3.82	9.88	7.36	
July 2014	6.12	8.75	7.50	—	—	—	

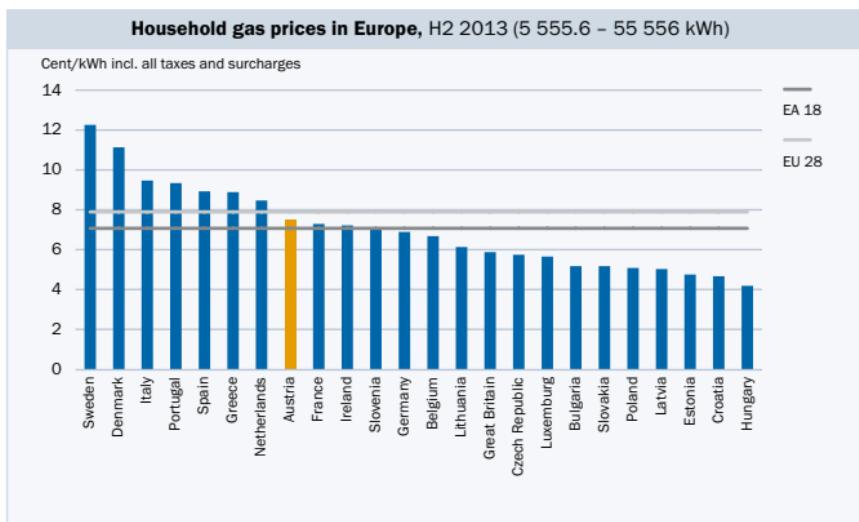


**Development of gas retail prices** in cent/kWh (15 000 kWh)

	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2010	2.51	3.29	2.96	2.17	3.95	3.30
July 2010	2.66	3.22	2.95	2.43	3.91	3.09
Jan 2011	2.44	3.21	2.99	2.40	3.80	3.06
July 2011	2.51	3.68	3.18	2.30	3.98	3.07
Jan 2012	2.83	4.01	3.65	2.39	4.34	3.31
July 2012	3.03	4.01	3.80	2.48	4.56	3.63
Jan 2013	3.03	4.01	3.81	2.48	4.56	3.74
July 2013	3.25	4.02	3.49	2.74	4.44	3.66
Jan 2014	3.25	4.02	3.45	2.72	3.93	3.60
July 2014	3.09	4.01	3.38	—	—	—



Source: Eurostat



Source: Eurostat

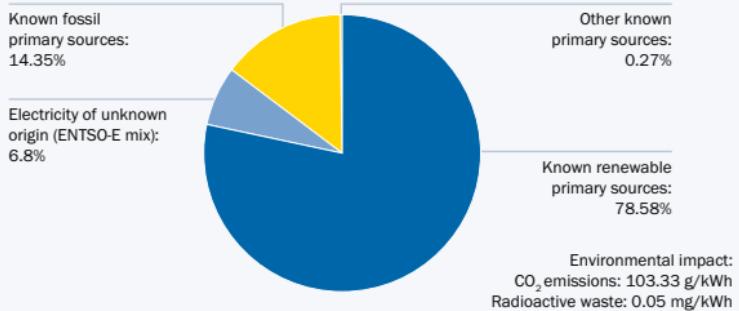
### Household Energy Price Index for Europe (HEPI) – electricity



### Household Energy Price Index for Europe (HEPI) – gas



### Electricity labelling in Austria in 2013



# 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](http://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<sup>3</sup> 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<sup>3</sup>): 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 J	=	1 joule
1 Wh	=	1 watt hour
		= 1 oscillation/sec
		= 1 watt second (Ws) = 0.27778 . 10 <sup>-3</sup> Wh
		= 3.6 x 10 <sup>3</sup> joule

## Most common multiple and sub-multiple prefixes

Multiple	Sub-multiple
10 <sup>1</sup> deca (da)	10 <sup>-1</sup> deci (d)
10 <sup>2</sup> hecto (h)	10 <sup>-2</sup> centi (c)
10 <sup>3</sup> kilo (k)	10 <sup>-3</sup> milli (m)
10 <sup>6</sup> mega (M)	10 <sup>-6</sup> micro ( $\mu$ )
10 <sup>9</sup> giga (G)	10 <sup>-9</sup> nano (n)
10 <sup>12</sup> tera (T)	10 <sup>-12</sup> pico (p)
10 <sup>15</sup> peta (P)	10 <sup>-15</sup> femto (f)
10 <sup>18</sup> exa (E)	10 <sup>-18</sup> 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:					
<b>kg</b> Kilogramme	<b>1</b>	0.001	$9.84 \times 10^{-4}$	$1.102 \times 10^{-3}$	2.2046	
<b>t</b> Ton	1 000	<b>1</b>	0.984	1.1023	2 204.6	
<b>lg</b> Long ton	1 016	1.016	<b>1</b>	1.120	2 240	
<b>st</b> Short ton	907.2	0.9072	0.893	<b>1</b>	2 000	
<b>lb</b> Pound	0.454	$4.54 \times 10^{-4}$	$4.46 \times 10^{-4}$	$5.0 \times 10^{-4}$		<b>1</b>

Source: IEA

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

Source: Eurostat, IEA

Units of volume						
To:	US gal	UK gal	bbl	ft3	l	m³
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			
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

<b>Eurostat, calorific values (2008)</b>				
<b>Energy source</b>	Gigajoule / ...	From (1) ...	<b>Standard values</b>	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

<b>International Energy Agency, OECD Europe conversion factors (2008)</b>				
<b>Energy source</b>	Gigajoule / ...	From ...	<b>Average / standard values</b>	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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