



KEY STATISTICS 2011

E-CONTROL

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## Editorial

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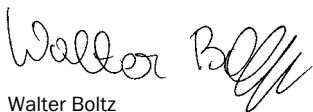


# Preface

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's statistics booklet is now already in its third edition, 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 retailmarkets. And as the market develops, so do we: our brochure will be updated annually to keep you informed.

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. And as the market develops, so do we: our brochure will be updated annually to keep you informed.



Walter Boltz  
Executive Director  
Energie-Control Austria



Martin Graf  
Executive Director  
Energie-Control Austria

# Overview

## Economic indicators

<b>Consumer price index, Jan 1990 = 100</b>						
	<b>Total</b>		<b>Electricity</b>		<b>Natural gas</b>	
	<b>Annual average</b>	<b>Change in % (*)</b>	<b>Annual average</b>	<b>Change in % (*)</b>	<b>Annual average</b>	<b>Change in % (*)</b>
1995	115.6	3.1	108.0	1.4	101.8	1.0
2000	124.0	1.4	114.3	1.1	114.9	2.3
2005	137.1	2.0	121.3	1.1	143.8	4.3
2006	139.1	1.4	125.5	3.4	152.7	5.8
2007	142.1	2.1	137.1	8.5	165.4	7.7
2008	146.7	3.1	139.5	1.7	170.2	2.8
2009	147.4	0.5	145.1	3.9	181.6	6.3
<b>2010</b>	<b>150.1</b>	<b>1.8</b>	<b>146.6</b>	<b>1.0</b>	<b>173.5</b>	<b>-4.7</b>

(\*) Rates of change: 1995 - 2005: average/ from 2006: year-on-year

Source: Statistics Austria

<b>Gross domestic product</b>		
	<b>m€ (rate of 2005)</b>	<b>Change in % (*)</b>
1995	194 301	2.0
2000	225 097	2.9
2005	243 585	1.6
2006	252 350	3.5
2007	261 762	3.6
2008	267 465	2.1
2009	257 065	-4.0
<b>2010</b>	<b>262 392</b>	<b>-2.0</b>

(\*) Rates of change: 1995 - 2005: average/ from 2006: year-on-year

Source: Oesterreichische Nationalbank (OeNB)

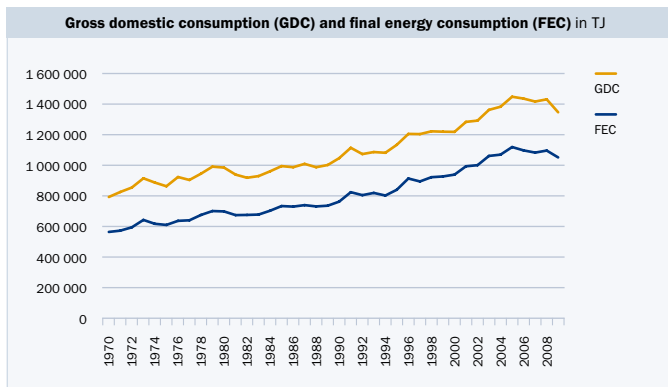
<b>Population, annual average</b>		
	<b>Population numbers</b>	<b>Change in % (*)</b>
1995	7 948 278	0.7
2000	8 011 566	0.2
2005	8 225 278	0.5
2006	8 267 948	0.5
2007	8 300 954	0.4
2008	8 336 549	0.4
2009	8 363 040	0.3
<b>2010</b>	<b>8 387 742</b>	<b>0.3</b>

(\*) Rates of change: 1995 – 2005: average / from 2006: year-on-year  
Source: Statistics Austria

<b>Households in 1 000</b>				
	<b>Single-person households</b>	<b>Multi-person households</b>	<b>Total</b>	<b>Average household size (persons)</b>
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
2006	1 219	2 289	3 508	2.33
2007	1 240	2 297	3 537	2.32
2008	1 261	2 305	3 566	2.31
2009	1 283	2 315	3 598	2.30
<b>2010</b>	<b>1 305</b>	<b>2 320</b>	<b>3 624</b>	<b>2.29</b>

Source: Statistics Austria

## Energy industry indicators



Source: Statistics Austria

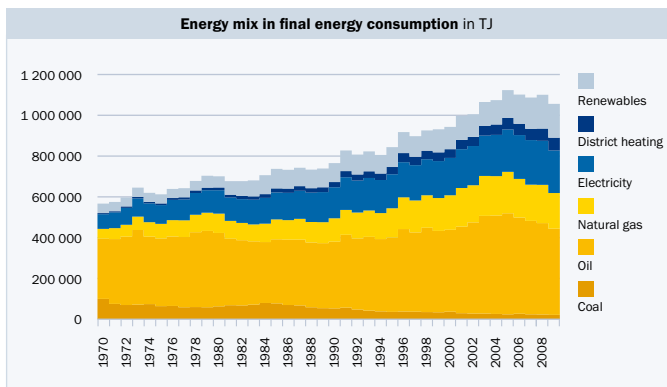
**Gross domestic consumption and final energy consumption in TJ**

	Gross domestic consumption	Final energy consumption
1995	1 139 773	844 827
2000	1 224 347	943 904
2005	1 456 233	1 125 089
2006	1 443 858	1 103 152
2007	1 424 448	1 088 507
2008	1 439 157	1 101 758
<b>2009</b>	<b>1 353 964</b>	<b>1 057 271</b>

Source: Statistics Austria



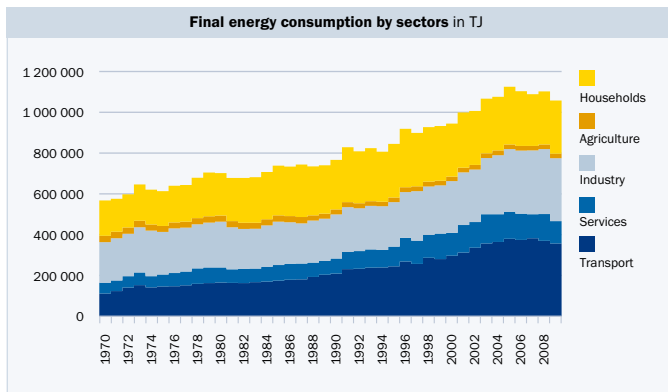
## ENERGY BALANCE



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	401 516	170 151	183 336	42 699	109 176	<b>943 904</b>
2005	24 330	495 821	203 767	207 768	56 644	136 760	<b>1 125 089</b>
2006	26 780	472 556	189 364	215 601	55 378	143 472	<b>1 103 152</b>
2007	24 026	458 375	178 031	219 051	55 724	153 300	<b>1 088 507</b>
2008	23 377	448 092	188 131	216 087	60 298	165 772	<b>1 101 758</b>
2009	<b>21 847</b>	<b>422 506</b>	<b>175 227</b>	<b>208 367</b>	<b>63 549</b>	<b>165 777</b>	<b>1 057 271</b>

Source: Statistics Austria



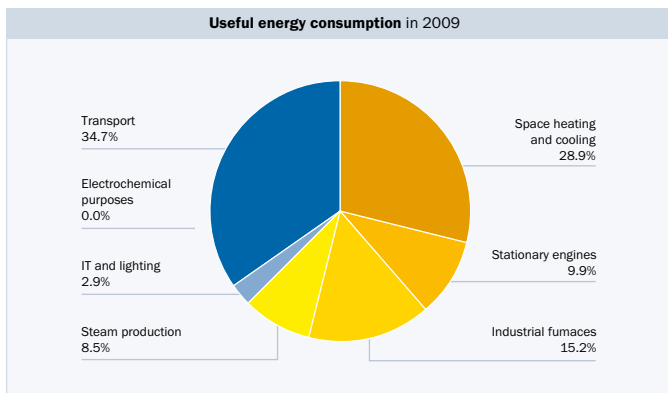
Source: Statistics Austria

**Final energy consumption by sectors in TJ**

	Households	Agriculture	Industry	Services	Transport	Total
1995	262 855	22 492	218 402	96 389	244 689	<b>844 827</b>
2000	259 317	22 199	253 934	112 077	296 378	<b>943 904</b>
2005	282 859	23 049	308 451	131 252	379 478	<b>1 125 089</b>
2006	268 818	22 313	309 397	128 250	374 374	<b>1 103 152</b>
2007	253 741	22 327	312 811	117 589	382 039	<b>1 088 507</b>
2008	260 033	22 662	318 221	131 036	369 806	<b>1 101 758</b>
2009	260 932	22 229	307 730	109 128	357 252	<b>1 057 271</b>

Source: Statistics Austria

## USEFUL ENERGY



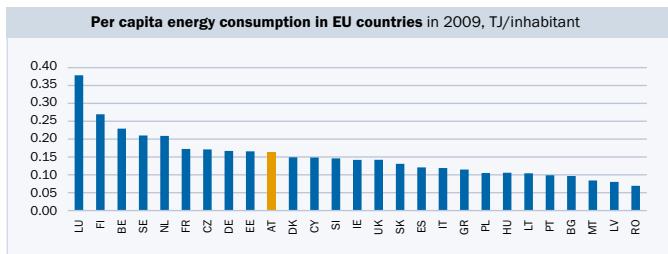
Source: Statistics Austria

**Useful energy consumption in 2009**

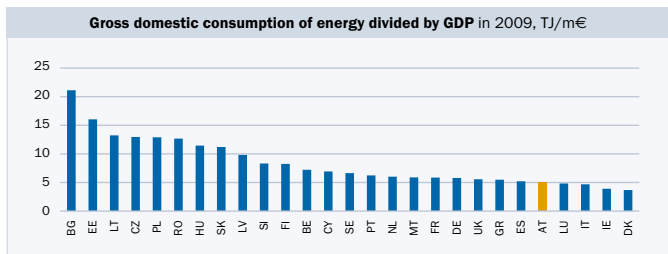
	TJ	Share in %
Space heating and cooling	305 057	28.9
Stationary engines	104 456	9.9
Industrial furnaces	160 187	15.2
Steam production	89 563	8.5
IT and lighting	31 012	2.9
Electrochemical purposes	269	0.0
Transport	366 728	34.7
<b>Total</b>	<b>1 057 271</b>	<b>100.0</b>

Source: Statistics Austria

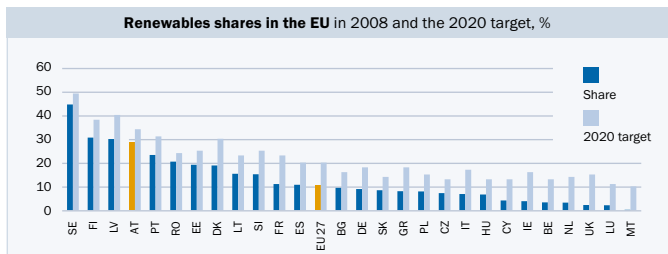
## INTERNATIONAL ENERGY INDICATORS



Source: Eurostat

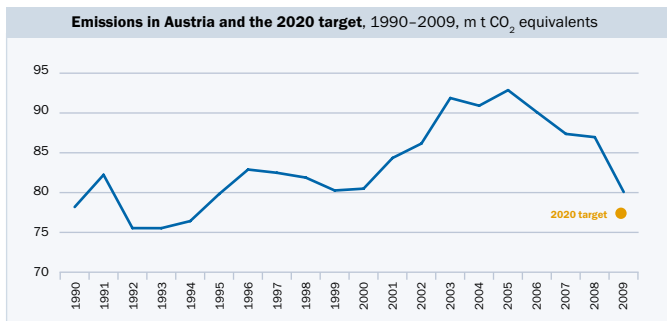


Source: Eurostat

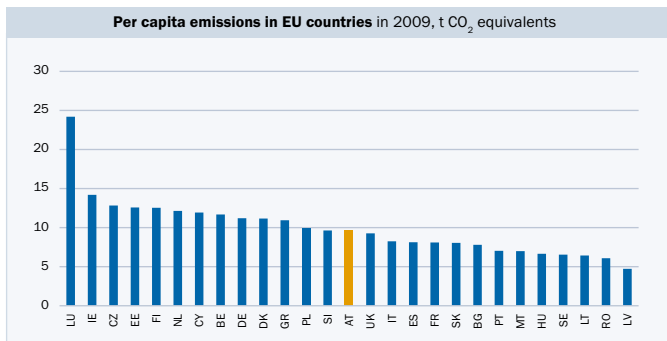


Source: Official Journal of the European Union, 2008

## GREENHOUSE GAS EMISSIONS

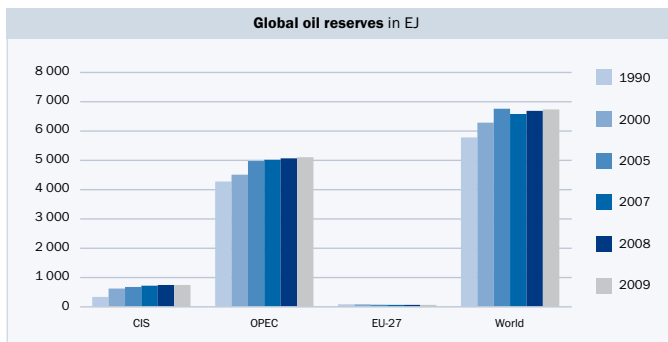


Source: Environment Agency Austria

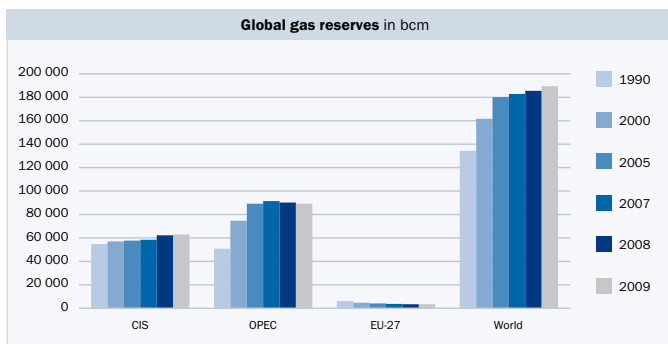


Source: Eurostat

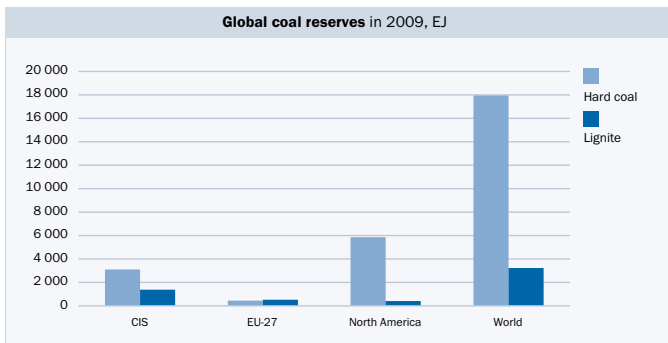
## Energy reserves



Source: German Federal Institute for Geosciences and Natural Resources, *Energy reserves, overview in 2010*



Source: German Federal Institute for Geosciences and Natural Resources, *Energy reserves, overview in 2010*

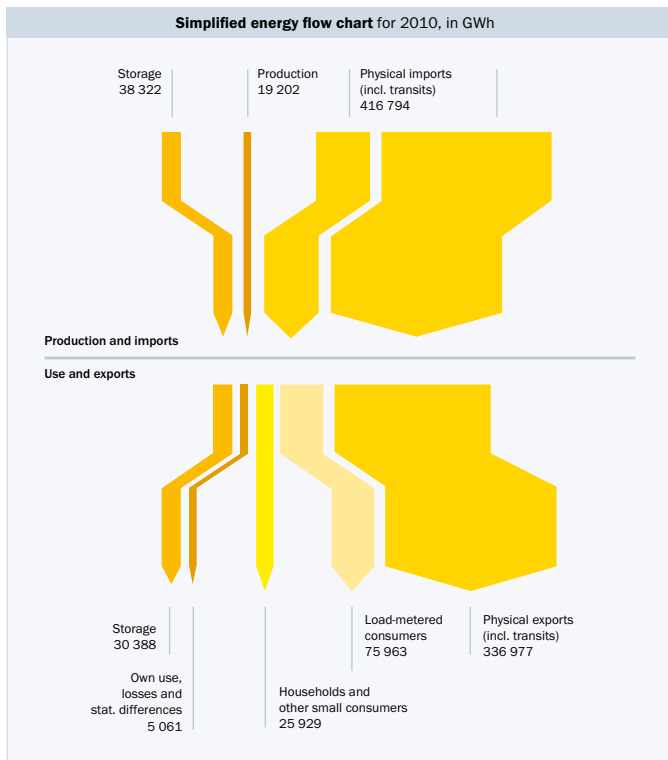


Source: German Federal Institute for Geosciences and Natural Resources, *Energy reserves, overview in 2010*

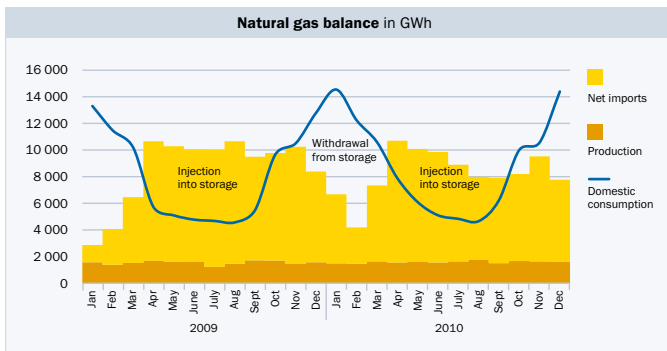
Please note: More recent data of the German Federal Institute for Geosciences and Natural Resources were not available at the time of compiling this brochure.

# Operational statistics

## Natural gas in Austria







**Natural gas balance for 2010**

	m Nm <sup>3</sup>	GWh	Year-on-year change in %
<b>Supply to consumers (a)</b>	<b>8 217</b>	<b>102 016</b>	<b>11.4</b>
Statistical difference (b)	137	804	—
Own use and losses (c)	210	1 766	-41.1
Own use and losses (d)	239	2 366	18.8
<b>Domestic consumption</b>	<b>8 802</b>	<b>106 953</b>	<b>9.1</b>
Injection into storage (e)	3 774	30 388	-27.7
Exports (e)	30 383	336 977	-0.4
<b>Consumption and exports = production and imports</b>	<b>42 959</b>	<b>474 318</b>	<b>-0.9</b>
Imports (e)	37 946	416 794	-1.4
Production (e)	1 667	19 202	3.4
Withdrawal from storage (e)	3 346	38 322	2.8

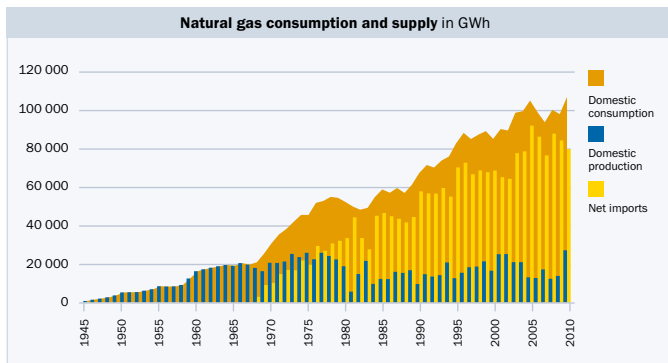
(a) Supply to consumers (here: households, industry, chemical industry, refineries, thermal power plants etc.)

(b) Statistical difference between calculated and metered supply to consumers

(c) For transports (including transits)

(d) For production and storage operation

(e) 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	70 275	12 621	<b>82 897</b>	3 265	1	<b>79 631</b>
2000	68 635	16 491	<b>85 126</b>	4 612		<b>80 514</b>
2005	92 019	13 028	<b>105 047</b>	5 001	-374	<b>100 420</b>
2006	86 263	12 717	<b>98 981</b>	5 099	-15	<b>93 897</b>
2007	76 559	17 160	<b>93 720</b>	4 939	362	<b>88 418</b>
2008	87 816	12 332	<b>100 148</b>	5 427	1 492	<b>93 228</b>
2009	84 255	13 801	<b>98 056</b>	4 992	1 522	<b>91 542</b>
<b>2010</b>	<b>79 817</b>	<b>27 136</b>	<b>106 953</b>	<b>4 132</b>	<b>804</b>	<b>102 016</b>

(a) Production and net storage movements

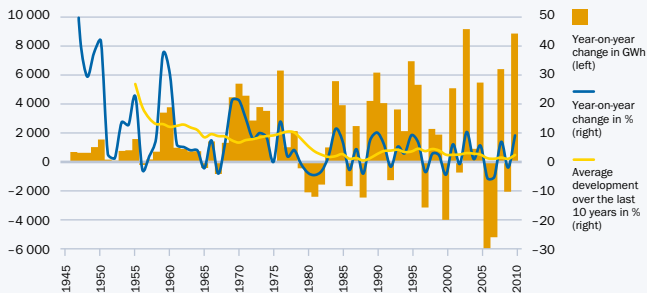
(b) For production, storage and transports (including transits)

(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)

**Natural gas consumption trends in GWh and %**

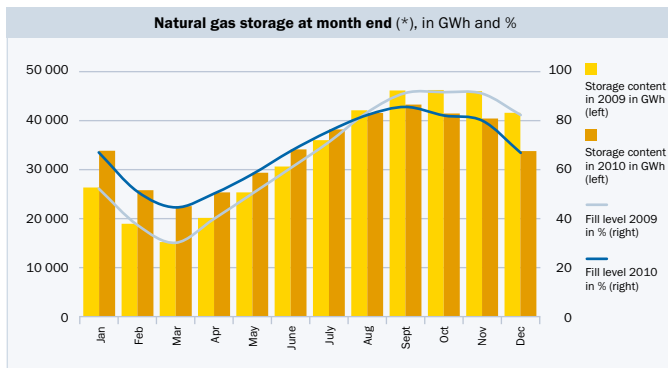


**Physical imports and exports of natural gas in 2010**

	Imports (*)		Exports (*)	
	in m Nm <sup>3</sup>	in GWh	in m Nm <sup>3</sup>	in GWh
Germany	5 574	62 370	26 810	26 810
Switzerland			65	731
Italy			21 289	238 221
Slovenia			1 688	18 894
Hungary			4 388	49 100
Slovakia	31 621	353 840	288	3 221
Czech Republic	52	585		
<b>Total</b>	<b>37 247</b>	<b>416 794</b>	<b>54 528</b>	<b>336 977</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.

**Natural gas storage facilities (\*)**

	Storage volume in GWh		Max. injection rate in MWh per hour		Max. withdrawal rate in MWh per hour	
	Total	Contracted	Total	Contracted	Total	Contracted
2006	32 202	32 202	13 365	10 037	15 332	15 332
2007	45 534	45 534	19 809	16 621	21 776	21 776
2008	45 536	45 536	20 254	17 065	22 053	22 053
2009	50 560	50 560	21 422	18 312	25 511	25 511
<b>2010</b>	<b>51 906</b>	<b>51 906</b>	<b>21 518</b>	<b>18 532</b>	<b>25 625</b>	<b>25 625</b>

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

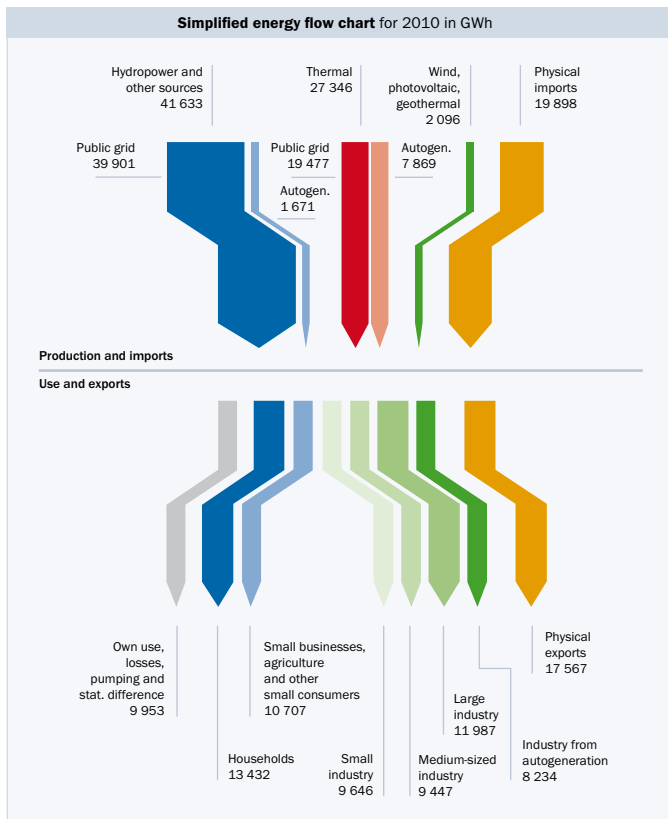
<b>Domestic gas production</b>		
	Max. production rate in Nm <sup>3</sup> per hour	Max. production rate in MWh per hour
<b>Total</b>	<b>207 225</b>	<b>2 318 848</b>

<b>Network length at year end in km</b>			
	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
2006	2 757	3 466	31 189
2007	2 876	3 523	31 614
2008	2 876	3 556	32 558
2009	2 876	3 656	32 889
<b>2010</b>	<b>3 143</b>	<b>3 685</b>	<b>33 027</b>

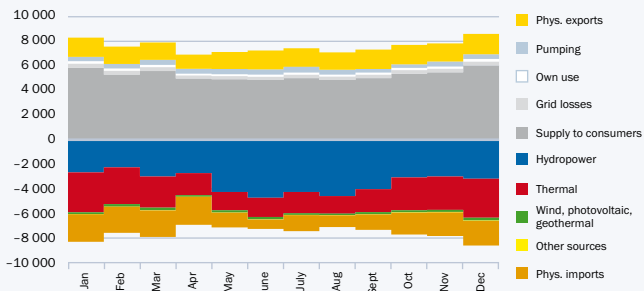
(\*) Partly estimated based on year of start of operation

<b>Grid connections and metering points at year end</b>						
	Number of connections					Number of metering points
	Grid level 2	Grid level 3			Total	
		Up to 100 mbar	Over 100 mbar	Total		
2006	411	1 201 894	61 088	1 262 982	1 263 393	1 340 667
2007	425	1 210 656	63 521	1 274 177	1 274 602	1 350 939
2008	453	1 220 387	63 548	1 283 935	1 284 388	1 353 656
2009	441	1 224 057	66 211	1 290 268	1 290 709	1 351 419
<b>2010</b>	<b>442</b>	<b>1 228 059</b>	<b>67 105</b>	<b>1 295 164</b>	<b>1 295 606</b>	<b>1 351 888</b>

## Electricity in Austria (total electricity supply)



### Electricity balance 2010, in GWh

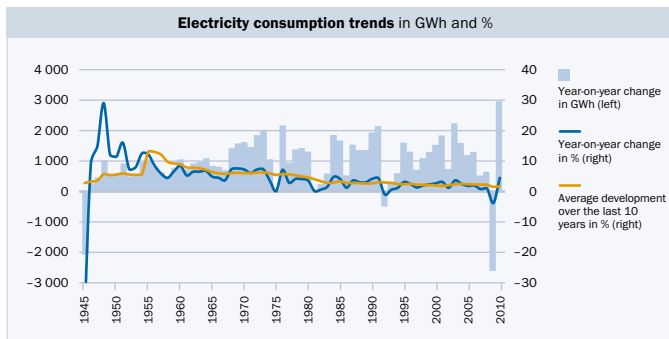


### Electricity balance 2010

	2009 in GWh	2010 in GWh	Year-on-year change in GWh in %		
Supply to consumers (1)	60 499	63 218	2 719	4.5	
Grid losses	3 520	3 533	13	0.4	
Own use	1 862	2 090	227	12.2	
<b>Domestic consumption</b>	<b>65 882</b>	<b>68 841</b>	<b>2 959</b>	<b>4.5</b>	
Pumping	3 961	4 564	603	15.2	
Physical exports	18 762	17 567	-1 195	-6.4	
<b>Use and exports = generation and imports</b>	<b>88 605</b>	<b>90 972</b>	<b>2 368</b>	<b>2.7</b>	
Gross generation	Hydro	43 650	41 572	-2 078	-4.8
	Thermal	23 360	27 346	3 986	17.1
	Renewables (2)	1 979	2 096	117	5.9
	Other sources	74	61		
Physical imports	19 542	19 898	356	1.8	

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

(2) Photovoltaics, wind and geothermal

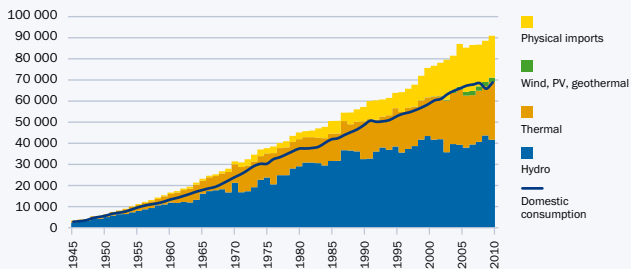


**Electricity balance in GWh**

	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	<b>52 606</b>	1 511	9 757	<b>63 874</b>
2000	53 751	1 566	3 195	<b>58 512</b>	1 990	15 216	<b>75 718</b>
2005	60 465	2 051	3 567	<b>66 083</b>	3 276	17 732	<b>87 091</b>
2006	61 827	2 016	3 531	<b>67 373</b>	3 336	14 580	<b>85 289</b>
2007	62 239	1 945	3 700	<b>67 883</b>	2 986	15 767	<b>86 636</b>
2008	62 911	1 920	3 686	<b>68 516</b>	3 273	14 934	<b>86 723</b>
2009	60 499	1 862	3 520	<b>65 882</b>	3 961	18 762	<b>88 605</b>
2010	<b>63 218</b>	2 090	3 533	<b>68 841</b>	4 564	17 567	<b>90 972</b>



### Domestic consumption and supply in GWh



### Electricity balance in GWh

	Gross generation				Total	Physical imports	Generation and imports = use and exports
	Hydro-power	Thermal	Wind, PV, geothermal	Other sources			
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
2006	38 039	24 680	1 766	-121	64 364	20 925	85 289
2007	39 203	23 378	2 059	213	64 853	21 783	86 636
2008	40 716	24 172	2 031	8	66 927	19 795	86 723
2009	43 650	23 360	1 979	74	69 063	19 542	88 605
2010	41 572	27 346	2 096	61	71 075	19 898	90 972

Gross generation mix in 2010						
Energy source			GWh	Share in %		
Hydropower	Run of river	over 10 MW	23 472	33.0	56.5	
		up to 10 MW	4 528	6.4	10.9	
	Pumped storage	over 10 MW	13 117	18.5	31.6	
		up to 10 MW	455	0.6	1.1	
	<b>Total hydro</b>			<b>41 572</b>	<b>58.5</b>	<b>100.0</b>
Thermal	Fossil fuels and derivatives	Hard coal	4 914	6.9	18.0	
		Lignite	0	0.0	0.0	
		Derivatives (1)	1 785	2.5	6.5	
		Oil derivatives (1)	1 272	1.8	4.7	
		Natural gas	14 307	20.1	52.3	
		<b>Total</b>	<b>22 278</b>	<b>31.3</b>	<b>81.5</b>	
	Biofuels	Solid (2)	2 556	3.6	9.3	
		Liquid (2)	30	0.0	0.1	
		Gaseous (2)	579	0.8	2.1	
		Sewage and landfill gases (2)	70	0.1	0.3	
		<b>Total (2)</b>	<b>3 236</b>	<b>4.6</b>	<b>11.8</b>	
	Other biofuels (3)			1 281	1.8	4.7
	Other fuels			551	0.8	2.0
	<b>Total thermal</b>			<b>27 346</b>	<b>38.5</b>	<b>100.0</b>
	(of which CHP)			(22 020)	(31.0)	(80.5)
Renewables	Wind (4)		2 063	2.9	98.5	
	Photovoltaics (4)		31	0.0	1.5	
	Geothermal (4)		1	0.0	0.1	
	<b>Total renewables (4)</b>			<b>2 096</b>	<b>2.9</b>	<b>100.0</b>
Other sources (5)			61	0.1		
<b>Total</b>			<b>71 075</b>	<b>100.0</b>		

(1) Coal and oil derivatives used for electricity generation

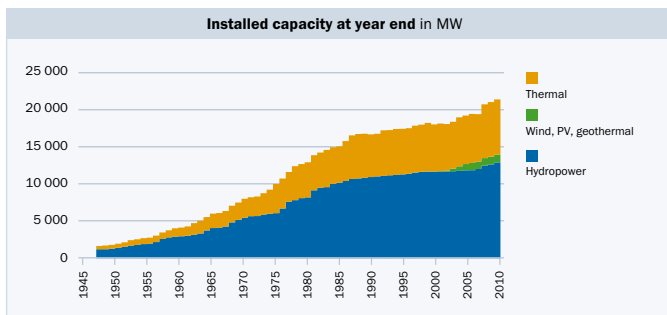
(2) Only biofuels as defined by Austrian law

(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

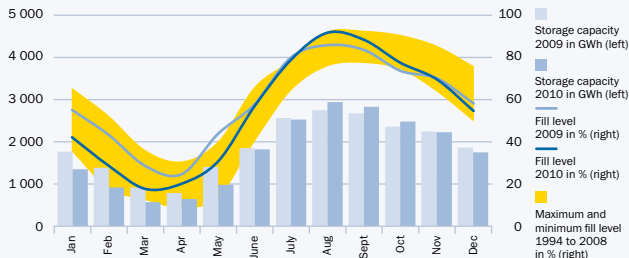


**Installed capacity at year end in MW**

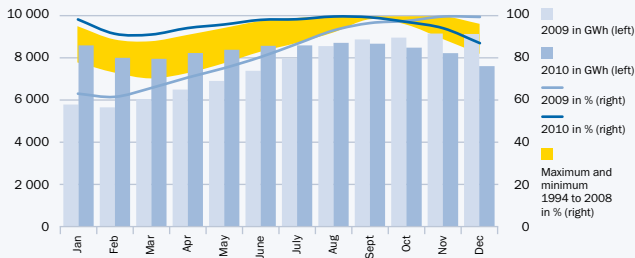
**Gross maximum capacity**

	Hydropower plants			Wind, PV, geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
1995	n.a.	n.a.	11 306	n.a.	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
2006	5 350	6 517	11 867	985	6 592	19 444	18 930
2007	5 395	6 627	12 022	1 011	6 374	19 406	18 904
2008	5 393	7 077	12 469	1 014	7 246	20 730	20 170
2009	5 373	7 276	12 469	1 031	7 358	21 038	20 470
2010	5 395	7 524	12 919	1 054	7 425	21 397	20 823

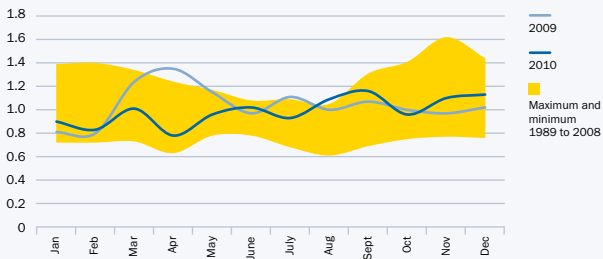
### Storage capacity and fill levels at month end – large reservoirs of public generators in GWh and %



### 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

2009	2010	1989 to 2008 maximum	1989 to 2008 minimum
1.06	0.99	1.16	0.87

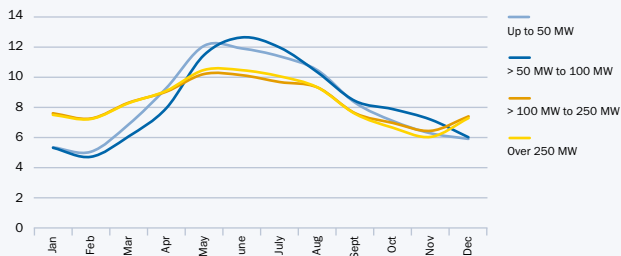
<b>Energy availability – power plants of public generators (*) in %</b>						
	Thermal power plants			Pumped storage power plants		
	Availability factor	Utilisation factor	Outages	Availability factor	Utilisation factor	Outages
2005	85.3%	42.7%	5.3%	93.3%	19.7%	1.1%
2006	86.2%	38.0%	6.5%	91.2%	17.5%	1.9%
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%
<b>2010</b>	<b>79.5%</b>	<b>33.9%</b>	<b>15.0%</b>	<b>84.2%</b>	<b>18.7%</b>	<b>7.7%</b>
2002 – 2010	82.4%	36.7%	7.7%	90.8%	18.6%	4.1%

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

<b>Firm capacity in 2010 – run-of-river plants of public generators (*)</b>					
Type of power plant	Up to 50 MW	50 MW to 100 MW	100 MW to 250 MW	Over 250 MW	Total
<b>Capacity in MW</b>					
Run-of-river plants with pondage	210	250	–	–	<b>460</b>
Run-of-river plants without pondage	126	83	444	310	<b>963</b>
<b>Total</b>	<b>336</b>	<b>333</b>	<b>444</b>	<b>310</b>	<b>1 423</b>
<b>Share in maximum capacity in %</b>					
Run-of-river plants with pondage	50.4%	46.2%	–	–	48.0%
Run-of-river plants without pondage	34.3%	53.6%	38.5%	34.1%	37.3%
<b>Total</b>	<b>42.8%</b>	<b>47.8%</b>	<b>38.5%</b>	<b>34.1%</b>	<b>40.2%</b>

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

**Share of monthly standard capacity in 2010 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 (2)	Thermal capacity	Maximum capacity	Maximum capacity
2005	69.9	52.9	41.5	7 512	4 511	2 016
2006	70.6	52.5	38.9	7 503	4 542	2 051
2007	71.4	53.1	34.2	7 761	4 350	2 024
2008	70.0	52.5	38.3	8 649	5 184	2 061
2009	71.9	55.7	37.0	8 809	5 444	1 913
<b>2010</b>	<b>72.8</b>	<b>57.5</b>	<b>37.8</b>	<b>8 603</b>	<b>5 642</b>	<b>1 783</b>

(1) Electricity and heat output divided by fuel input

(2) Electricity output divided by fuel input

## Public grid in Austria

<b>Route length (*) of the public grid at year-end 2010</b>					
Voltage level	Overhead lines		Cables		Total km
	km	Share in %	km	Share in %	
380 kV	1 317	0.6	54	0.0	<b>1 371</b>
220 kV	1 853	0.8	3	0.0	<b>1 856</b>
110 kV	6 059	2.6	481	0.2	<b>6 540</b>
1 kV to 110 kV	30 124	12.8	35 110	15.0	<b>65 233</b>
Up to 1 kV	38 808	16.5	120 797	51.5	<b>159 605</b>
<b>Total</b>	<b>78 161</b>	<b>33.3</b>	<b>156 445</b>	<b>66.7</b>	<b>234 606</b>

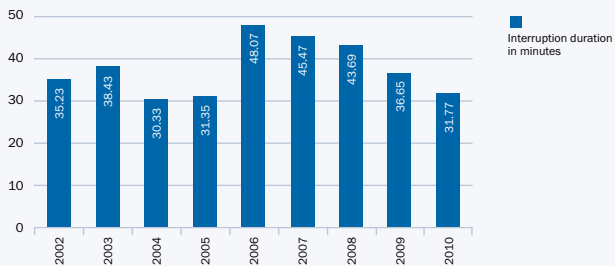
(\*) Including high and ultra-high voltage lines of public generators

<b>High voltage substations in the public grid at year-end 2010</b>		
Voltage level	Number of transformers	Total capacity in MVA
High voltage up to 100 kV	6	13
High voltage from 100 kV to 200 kV	965	40 317
High voltage over 200 kV	64	22 615
<b>High voltage to high, medium and low voltage</b>	<b>1 035</b>	<b>62 945</b>

<b>Medium voltage substations in the public grid at year-end 2010</b>		
Voltage level	Number of transformers	Total capacity in MVA
<b>Medium voltage to medium and low voltage</b>	<b>76 699</b>	<b>29 352</b>



### Quality of supply – unplanned supply interruptions



# Market statistics

## Austrian gas market

Consumption structure					
Supply to consumers					
Consumer category	Unit	2009	2010	Average (*)	Share (*)
Households	GWh	18 660	20 221	19 121	20.4%
Other small consumers	GWh	5 772	5 707	5 784	6.2%
Load-metered consumers	GWh	67 074	75 963	68 819	73.4%
Statistical difference	GWh	36	124		
<b>Total supply to consumers</b>	<b>GWh</b>	<b>91 542</b>	<b>102 016</b>	<b>93 724</b>	<b>100.0%</b>
Number of metering points (MP)					
Consumer category	Unit	2009	2010	Average (*)	Share (*)
Households	1 000	1 275	1 274	1 275	94.5%
Other small consumers	1 000	72	71	71	5.2%
Load-metered consumers	1 000	4	6	4	0.3%
<b>Total number of metering points</b>	<b>1 000</b>	<b>1 351</b>	<b>1 352</b>	<b>1 349</b>	<b>100.0%</b>
Average consumption					
Consumer category	Unit	2009	2010	Average (*)	
Households	kWh/MP	14 635	15 871	14 999	
Other small consumers	kWh/MP	80 332	80 297	81 585	
Load-metered consumers	kWh/MP	17 444 480	12 616 360	17 523 643	
<b>Total</b>	<b>kWh/MP</b>	<b>67 773</b>	<b>75 501</b>	<b>69 457</b>	

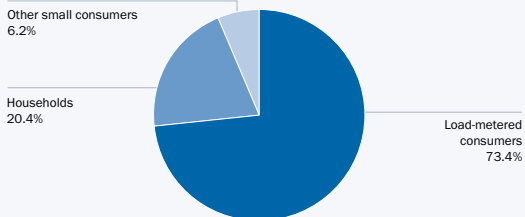
(\*) 2006 - 2010 average

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

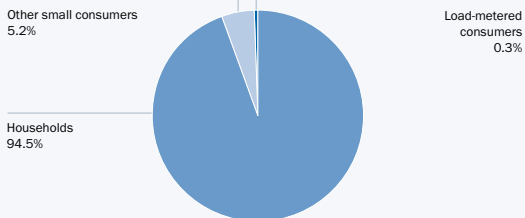
Other small consumers: Consumers with a standardised load profile marked HG or PG

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)



<b>Consumption structure – supply to consumers by grid zone in GWh</b>					
Federal province / grid zone		2009	2010	Average (*)	Share (*)
Burgenland		2 014	2 293	2 065	2.2%
Carinthia		1 673	1 846	1 755	1.9%
Lower Austria		20 155	21 182	20 694	22.1%
Upper Austria		23 552	28 132	24 547	26.2%
Salzburg		2 988	3 213	3 398	3.6%
Styria		11 660	13 268	12 787	13.6%
Tyrol		3 102	3 330	3 164	3.4%
Vorarlberg		2 264	2 500	2 345	2.5%
Vienna		24 097	26 127	22 968	24.5%
Austria	Statistical difference	36	124	–	–
	<b>Total supply to consumers</b>	<b>91 542</b>	<b>102 016</b>	<b>93 724</b>	<b>100.0%</b>

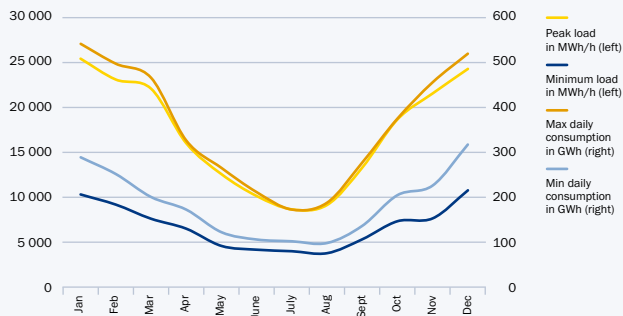
(\*) 2006 – 2010 average

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

<b>Consumption structure – number of metering points by grid zone in 1 000</b>					
Federal province / grid zone		2009	2010	Average (*)	Share (*)
Burgenland		48	49	48	3.5%
Carinthia		14	14	14	1.0%
Lower Austria		289	290	287	21.3%
Upper Austria		150	149	149	11.0%
Salzburg		34	35	33	2.5%
Styria		66	66	65	4.8%
Tyrol		35	36	33	2.5%
Vorarlberg		32	34	32	2.4%
Vienna		683	678	688	51.0%
<b>Austria</b>		<b>1 351</b>	<b>1 352</b>	<b>1 349</b>	<b>100.0%</b>

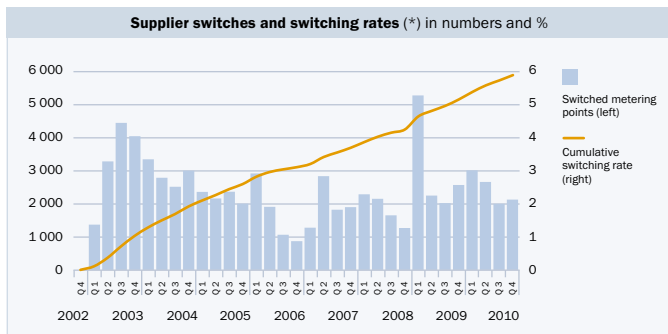
(\*) 2006 – 2010 average

**Load indicators for 2010 in MWh/h and GWh**



**Load indicators**

	Annual peak load	Annual minimum load	Maximum daily minimum load	Maximum daily consumption	Minimum daily consumption	Peak load utilisation period
Year	MWh/h	MWh/h	MWh/h	GWh	GWh	h
2006	24 817	3 753	20 003	548	99	3 784
2007	23 013	3 663	17 350	494	96	3 842
2008	20 862	3 870	14 893	435	98	4 469
2009	23 814	3 380	17 769	512	87	3 844
2010	25 467	3 798	19 372	542	99	4 006

**THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES**

(\*) By number of metering points

<b>Supplier switches and switching rates (*)</b>					
	2006	2007	2008	2009	2010
<b>Number of supplier switches</b>					
Households	5 996	6 744	6 194	9 618	<b>8 018</b>
Other small consumers	680	967	1 021	2 249	<b>1 557</b>
Load-metered consumers	84	125	141	257	<b>224</b>
<b>Total</b>	<b>6 760</b>	<b>7 836</b>	<b>7 356</b>	<b>12 124</b>	<b>9 799</b>
<b>Switching rates in %</b>					
Households	0.5	0.5	0.5	0.8	<b>0.6</b>
Other small consumers	1.0	1.4	1.4	3.1	<b>2.2</b>
Load-metered consumers	2.9	3.9	3.9	6.7	<b>5.8</b>
<b>Total</b>	<b>0.5</b>	<b>0.6</b>	<b>0.5</b>	<b>0.9</b>	<b>0.7</b>

(\*) By number of metering points

<b>Supplier switches (*) by grid zone</b>					
<b>Federal province / grid zone</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Burgenland	66	144	171	213	<b>139</b>
Carinthia	15	89	65	31	<b>28</b>
Lower Austria	2 232	2 403	1 929	4 058	<b>3 142</b>
Upper Austria	963	1 041	1 477	1 366	<b>1 582</b>
Salzburg	73	84	44	137	<b>65</b>
Styria	197	521	641	1 185	<b>643</b>
Tyrol				39	<b>2</b>
Vorarlberg			45	14	<b>2</b>
Vienna	3 214	3 554	2 984	5 081	<b>4 196</b>
<b>Austria</b>	<b>6 760</b>	<b>7 836</b>	<b>7 356</b>	<b>12 124</b>	<b>9 799</b>

(\*) By number of metering points

<b>Switching rates (*) by grid zone in %</b>					
<b>Federal province / grid zone</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Burgenland	0.1	0.3	0.4	0.4	<b>0.3</b>
Carinthia	0.1	0.6	0.5	0.2	<b>0.2</b>
Lower Austria	0.8	0.8	0.7	1.4	<b>1.1</b>
Upper Austria	0.7	0.7	1.0	0.9	<b>1.1</b>
Salzburg	0.2	0.3	0.1	0.4	<b>0.2</b>
Styria	0.3	0.8	1.0	1.8	<b>1.0</b>
Tyrol				0.1	<b>0.0</b>
Vorarlberg			0.1	0.0	<b>0.0</b>
Vienna	0.5	0.5	0.4	0.7	<b>0.6</b>
<b>Austria</b>	<b>0.5</b>	<b>0.6</b>	<b>0.5</b>	<b>0.9</b>	<b>0.7</b>

(\*) By number of metering points

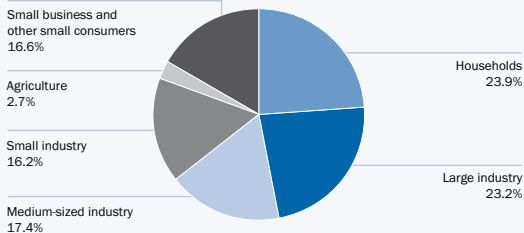
## Austrian electricity market (public grid)

Consumption structure					
Supply to consumers					
Consumer category	Unit	2009	2010	Average (*)	Share (*)
Households	GWh	13 131	13 432	13 036	23.9%
Small business and other small consumers	GWh	9 104	9 235	9 069	16.6%
Agriculture	GWh	1 510	1 472	1 468	2.7%
Small industry	GWh	9 311	9 646	8 879	16.2%
Medium-sized industry	GWh	9 171	9 447	9 532	17.4%
Large industry	GWh	11 254	11 987	12 657	23.2%
Statistical difference	GWh	-190	-234	-	-
<b>Total supply to consumers</b>	<b>GWh</b>	<b>53 291</b>	<b>54 985</b>	<b>54 642</b>	<b>100.0%</b>
Number of metering points (MP)					
Consumer category	Unit	2009	2010	Average (*)	Share (*)
Households	1 000	4 122	4 162	4 092	71.0%
Small business and other small consumers	1 000	1 444	1 450	1 442	25.0%
Agriculture	1 000	194	195	195	3.4%
Small industry	1 000	31	32	30	0.5%
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>5 794</b>	<b>5 839</b>	<b>5 761</b>	<b>100.0%</b>
Average consumption					
Consumer category	Unit	2009	2010	Average (*)	
Households	kWh/MP	3 186	3 227	3 186	
Small business and other small consumers	kWh/MP	6 305	6 371	6 289	
Agriculture	kWh/MP	7 767	7 645	7 524	
Small industry	kWh/MP	296 317	302 861	299 390	
Medium-sized industry	kWh/MP	4 732 399	4 930 480	4 691 932	
Large industry	kWh/MP	57 126 296	59 049 184	62 165 990	
<b>Total</b>	<b>kWh/MP</b>	<b>9 198</b>	<b>9 417</b>	<b>9 485</b>	

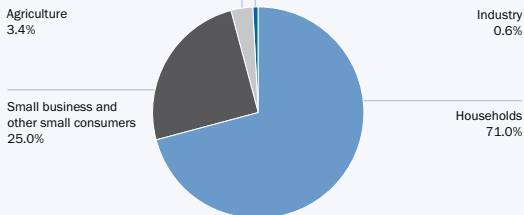
(\*) 2006 - 2010 average



### 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		2009	2010	Average (*)	Share (*)
Burgenland		1 520	1 622	1 533	2.8%
Carinthia		3 956	4 158	4 126	7.6%
Lower Austria		7 408	7 747	7 508	13.7%
Upper Austria		9 210	9 497	9 401	17.2%
Salzburg		3 452	3 620	3 494	6.4%
Styria		7 891	8 269	8 321	15.2%
Tyrol		5 402	5 591	5 517	10.1%
Vorarlberg		2 504	2 585	2 512	4.6%
Vienna		12 137	12 130	12 230	22.4%
Austria	Statistical difference	-190	-234	-	-
	Supply to consumers	<b>53 291</b>	<b>54 985</b>	<b>54 642</b>	<b>100.0%</b>

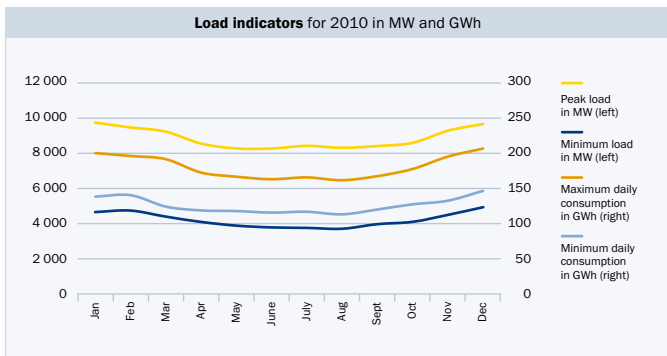
(\*) 2006 – 2010 average

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		2009	2010	Average (*)	Share (*)
Burgenland		194	196	192	3.3%
Carinthia		377	379	376	6.5%
Lower Austria		828	830	824	14.3%
Upper Austria		958	967	952	16.5%
Salzburg		408	420	408	7.1%
Styria		907	909	902	15.7%
Tyrol		450	454	448	7.8%
Vorarlberg		210	213	206	3.6%
Vienna		1 461	1 469	1 453	25.2%
<b>Austria</b>		<b>5 793</b>	<b>5 839</b>	<b>5 761</b>	<b>100.0%</b>

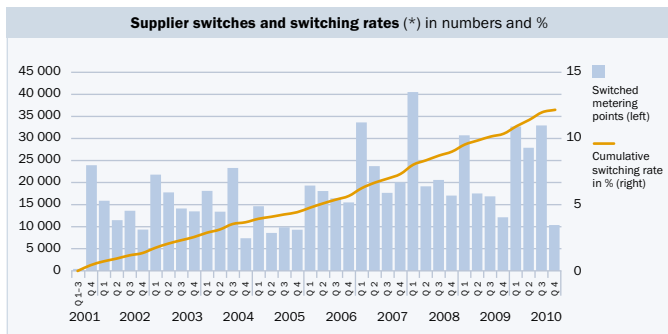
(\*) 2006 – 2010 average



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	
2006	9 492	3 836	6 812	44 694	6 102	0.70
2007	9 447	3 886	6 503	44 819	6 175	0.70
2008	9 413	3 992	6 412	45 290	6 265	0.71
2009	9 698	3 418	6 581	42 101	5 865	0.67
<b>2010</b>	<b>9 749</b>	<b>3 704</b>	<b>6 951</b>	<b>43 807</b>	<b>6 014</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

<b>Supplier switches and switching rates (*)</b>					
<b>Consumer category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Number of supplier switches</b>					
Households	40 756	60 665	54 874	48 245	<b>69 485</b>
Other small consumers	26 314	32 111	39 730	27 606	<b>31 360</b>
Load-metered consumers	2 461	2 488	2 888	1 613	<b>3 253</b>
<b>Total</b>	<b>69 531</b>	<b>95 264</b>	<b>97 492</b>	<b>77 464</b>	<b>104 098</b>
<b>Switching rates in %</b>					
Households	1.0	1.5	1.3	1.2	<b>1.7</b>
Other small consumers	1.6	1.9	2.4	1.7	<b>1.9</b>
Load-metered consumers	8.5	8.1	9.0	4.8	<b>9.7</b>
<b>Total</b>	<b>1.2</b>	<b>1.7</b>	<b>1.7</b>	<b>1.3</b>	<b>1.8</b>

(\*) By number of metering points

<b>Supplier switches (*) by grid zone</b>					
<b>Federal province / grid zone</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Burgenland	1 319	1 718	1 586	1 351	<b>1 402</b>
Carinthia	3 070	8 850	4 519	2 855	<b>3 799</b>
Lower Austria	13 252	18 381	14 767	14 785	<b>21 575</b>
Upper Austria	13 472	16 247	20 244	10 596	<b>20 064</b>
Salzburg	2 113	2 047	2 312	1 087	<b>1 476</b>
Styria	9 530	16 971	27 796	21 809	<b>25 855</b>
Tyrol	1 449	1 913	1 539	1 377	<b>1 706</b>
Vorarlberg	472	447	894	534	<b>607</b>
Vienna	24 854	28 690	23 835	23 070	<b>27 614</b>
<b>Austria</b>	<b>69 531</b>	<b>95 264</b>	<b>97 492</b>	<b>77 464</b>	<b>104 098</b>

(\*) By number of metering points

<b>Switching rates (*) by grid zone in %</b>					
<b>Federal province / grid zone</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Burgenland	0.7	0.9	0.8	0.7	<b>0.7</b>
Carinthia	0.8	2.4	1.2	0.8	<b>1.0</b>
Lower Austria	1.6	2.2	1.8	1.8	<b>2.6</b>
Upper Austria	1.4	1.7	2.1	1.1	<b>2.1</b>
Salzburg	0.5	0.5	0.6	0.3	<b>0.4</b>
Styria	1.1	1.9	3.1	2.4	<b>2.8</b>
Tyrol	0.3	0.4	0.3	0.3	<b>0.4</b>
Vorarlberg	0.2	0.2	0.4	0.3	<b>0.3</b>
Vienna	1.7	2.0	1.6	1.6	<b>1.9</b>
<b>Austria</b>	<b>1.2</b>	<b>1.7</b>	<b>1.7</b>	<b>1.3</b>	<b>1.8</b>

(\*) By number of metering points

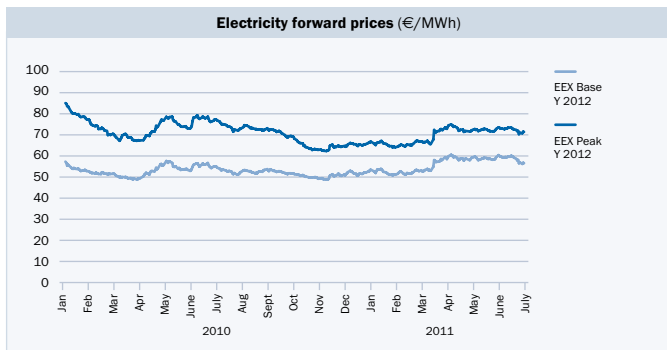
**Green electricity injection and support payments**  
(Austria, 2010 and 2009)

Primary energy source	Injection in 2009 in GWh	Net support in 2009 in m €	Green power contribution to total supply in %	Average support in cent/kWh
<b>2010</b>			<b>(1)</b>	
<b>Supported small hydro</b>	<b>1 258</b>	<b>65</b>	<b>2.29</b>	<b>5</b>
<b>Other renewables</b>	<b>4 647</b>	<b>523</b>	<b>8.40</b>	<b>11</b>
Wind	2 019	157	3.70	8
Wastes with high biog. fraction	1 987	269	3.60	14
Biogas *)	539	76	1.00	14
Liquid biomass *)	30	4	0.05	14
Photovoltaics	26	14	0.05	53
Sewage and landfill gas	43	3	0.08	7
Geothermal	1	0	0.00	9
<b>Total small hydro and other renewables</b>	<b>5 905</b>	<b>588</b>	<b>10.73</b>	<b>10</b>
<b>2009</b>			<b>(2)</b>	
<b>Supported small hydro</b>	<b>644</b>	<b>33</b>	<b>1.21</b>	<b>5</b>
<b>Other renewables</b>	<b>4 503</b>	<b>514</b>	<b>8.45</b>	<b>11</b>
Wind	1 915	149	3.59	8
Wastes with high biog. fraction	1 958	271	3.67	14
Biogas *)	525	89	0.98	17
Liquid biomass *)	39	5	0.07	14
Photovoltaics	21	12	0.04	57
Sewage and landfill gas	44	3	0.08	7
Geothermal	2	0	0.00	13
<b>Total small hydro and other renewables</b>	<b>5 147</b>	<b>548</b>	<b>9.66</b>	<b>11</b>

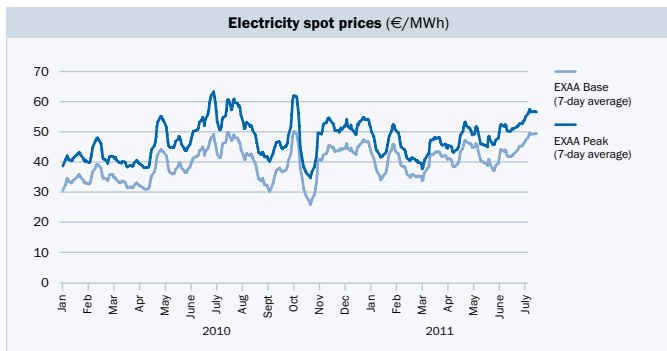
\*) Average feed-in tariff in 2009 was 14.05 cent/kWh + 3 cent/kWh top-up payments to cover for higher fuel costs; total subsidies paid out (net) were 73.7m € + 15.75m € (3 cent \* 525 GWh)

- 1) Relating to the total electricity supplied to consumers from the public grid in 2010, i.e. 55 014 GWh (preliminary value)  
 2) Relating to the total electricity supplied to consumers from the public grid in 2009, i.e. 53 302 GWh (preliminary value)

## Wholesale markets



Source: EEX



Source: EXAA

**Electricity forward and spot prices in €/MWh**

	EEX Peak		EEX Base	
	Day-ahead average	Y 2012 average	Day-ahead average	Y 2012 average
2008	79.43	108.99	65.76	71.39
2009	46.83	89.76	38.85	57.42
January 2010	48.68	80.59	42.21	54.35
February 2010	48.41	73.40	41.73	51.94
March 2010	44.21	68.92	39.19	50.05
April 2010	43.77	72.38	40.04	53.21
May 2010	46.76	75.88	41.17	55.04
June 2010	51.12	77.54	43.35	55.51
July 2010	51.97	74.18	45.83	52.82
August 2010	45.63	73.32	39.80	52.88
September 2010	51.76	70.95	45.86	52.48
October 2010	56.43	64.88	50.30	50.44
November 2010	56.62	63.99	48.53	50.28
December 2010	65.79	65.79	55.55	52.17
January 2011	58.21	65.65	50.13	52.31
February 2011	57.60	65.88	50.86	52.37
March 2011	58.38	70.08	54.47	56.18
April 2011	54.48	73.05	51.58	59.09
May 2011	61.52	72.59	56.83	58.97
June 2011	57.81	72.55	52.30	58.67

Source: EXAA, EEX



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



Source: EEX

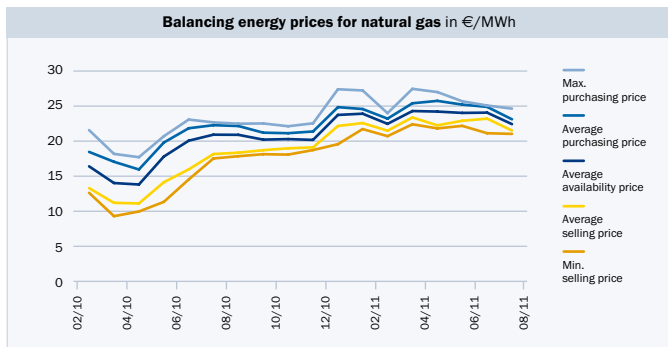
### Gas and coal forward prices in €/MWh, €/t

Y 2012					
	Gas average	Coal average		Gas average	Coal average
January 2010	20.11	74.67	October 2010	21.81	77.04
February 2010	19.33	75.09	November 2010	22.11	79.82
March 2010	17.89	73.95	December 2010	23.67	87.37
April 2010	19.78	78.91	January 2011	23.93	88.32
May 2010	21.64	83.97	February 2011	24.54	87.16
June 2010	24.06	87.92	March 2011	26.75	90.85
July 2010	22.78	82.63	April 2011	27.22	90.90
August 2010	22.29	81.82	May 2011	26.51	89.46
September 2010	22.53	80.15	June 2011	26.97	89.60

Source: EEX

Gas import price					
	2001=100	Year-on-year change in %		2001=100	Year-on-year change in %
2002	100.00		2009	156.41	-37.9
2003	98.90	-1.1	2010	173.87	10.0
2004	97.17	-1.8	January 11	198.34	12.3
2005	128.71	24.5	February 11	197.90	-0.2
2006	166.34	22.6	March 11	201.41	1.7
2007	153.24	-8.5	April 11	213.92	5.8
2008	215.73	29.0	May 11	221.39	3.4

Source: Statistics Austria



Source: Austrian Gas Clearing and Settlement (AGCS)

### Brent oil spot price in USD/barrel

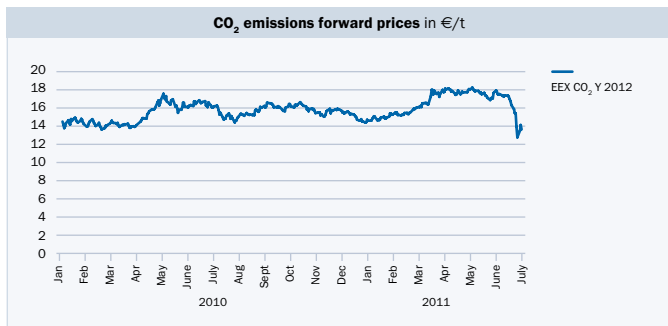


Source: Erdöl-Vereinigung (Union Pétrolière)

### Brent oil spot price

	€/barrel	USD/barrel	Month-on-month change of € in %
January 2010	54.23	77.37	
February 2010	54.54	74.65	0.6
March 2010	58.68	79.54	7.1
April 2010	64.28	86.04	8.7
May 2010	61.74	77.63	-4.1
June 2010	62.02	75.68	0.4
July 2010	58.97	75.37	-5.2
August 2010	60.04	77.59	1.8
September 2010	59.83	78.00	-0.4
October 2010	60.05	83.39	0.4
November 2010	63.07	85.76	4.8
December 2010	69.57	91.92	9.4
January 2011	72.36	96.66	3.9
February 2011	76.53	104.41	5.4
March 2011	81.73	114.24	6.4
April 2011	84.61	122.19	3.4
May 2011	79.80	114.53	-6.0
June 2011	78.88	113.56	-1.2

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



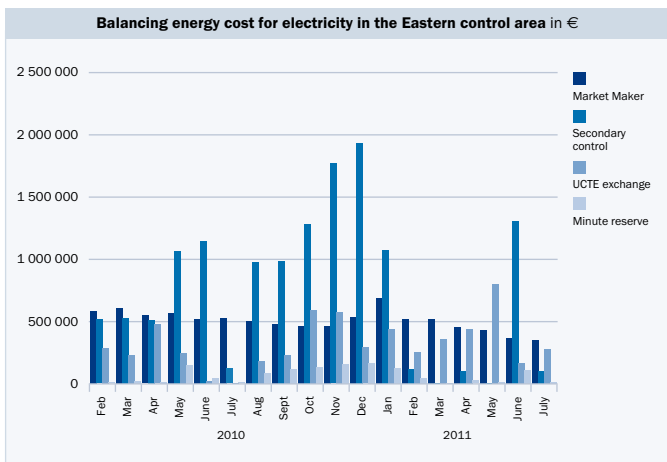
Source: EEX

<b>CO<sub>2</sub> emissions forward prices in €/t</b>			
2008	25.76	September 2010	16.17
2009	15.26	October 2010	16.09
January 2010	14.46	November 2010	15.57
February 2010	14.13	December 2010	15.01
March 2010	14.15	January 2011	14.98
April 2010	15.58	February 2011	15.53
May 2010	16.48	March 2011	17.19
June 2010	16.42	April 2011	17.81
July 2010	15.20	May 2011	17.58
August 2010	15.54	June 2011	16.03

Source: EEX

Pellet price index (*)							
	2000	2005	2006	2007	2008	2009	2010
Index 2000 = 100	100.00	78.26	104.35	91.30	82.61	91.30	91.30
Year-on-year change in %	—	-5.1	25.0	-14.3	-10.5	9.5	0.0

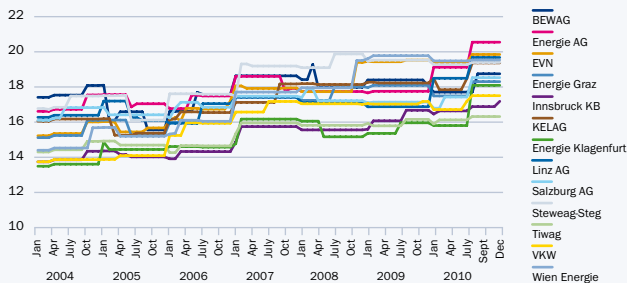
(\*) Based on average annual values, corrected for inflation  
Source: proPellets Austria



Source: Austrian Power Clearing and Settlement (APCS)

## Retail markets

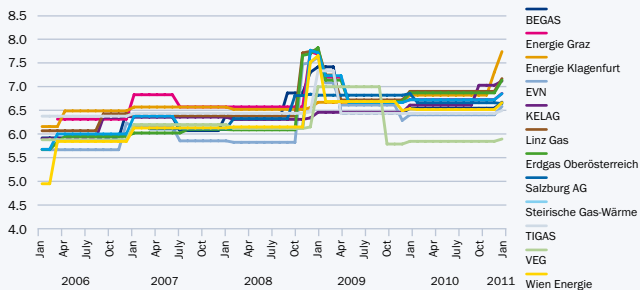
**Development of electricity retail prices in cent/kWh (3 500 kWh, all discounts included)**



**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
July 2006	4.83	6.18	5.43	–	–	–
Jan 2007	4.98	7.28	6.36	–	–	–
July 2007	6.06	7.28	6.62	–	–	–
Jan 2008	5.95	7.22	6.64	3.73	9.77	6.51
July 2008	5.95	7.69	6.74	3.73	9.77	6.76
Jan 2009	5.95	8.58	7.30	3.93	10.80	7.17
July 2009	5.85	8.58	7.32	3.93	10.78	7.24
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

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

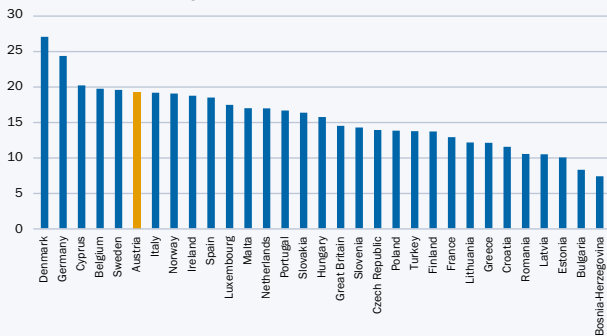


**Development of gas retail prices in cent/kWh (15 000 kWh)**

	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
July 2006	2.26	3.05	2.60	–	–	–
Jan 2007	2.65	3.40	2.93	–	–	–
July 2007	2.55	3.40	2.85	–	–	–
Jan 2008	2.55	3.40	2.86	–	–	–
July 2008	2.66	3.40	2.85	2.33	3.95	2.85
Jan 2009	2.66	3.36	3.07	2.34	4.18	3.10
July 2009	2.51	3.36	3.06	2.35	4.31	3.41
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

**Household electricity prices in Europe H2 2009 (2 500 – 5 000 kWh)**

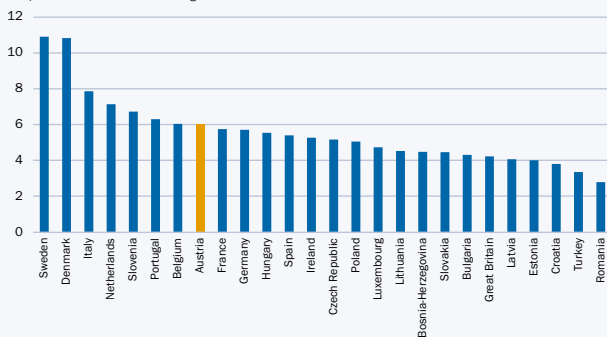
Cent/kWh incl. all taxes and surcharges



Source: Eurostat

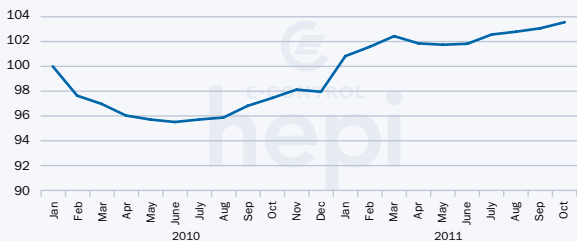
**Household gas prices in Europe H2 2009 (5 555.6 kWh – 55 556 kWh)**

Cent/kWh incl. all taxes and surcharges

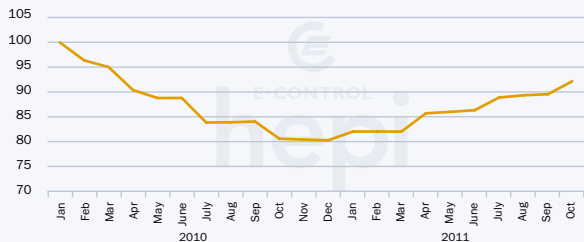




### Household Energy Price Index for Europe (HEPI) – electricity in 2010/2011



### Household Energy Price Index for Europe (HEPI) – gas in 2010/2011

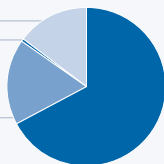


### Electricity labelling in Austria in 2010

Electricity of unknown origin,  
ENTSO-E; 14.7%

Other known  
primary sources; 0.3%

Known fossil fuels;  
17.6%



Known renewables;  
67.4%

Environmental impact:  
CO<sub>2</sub> emissions: 154.73 g/kWh  
Radioactive waste: 0.000106 g/kWh

# 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 Economy, Family and Youth.

Statistical work on electricity and gaseous energy carriers is conducted by Energie-Control GmbH (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 GmbH).

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  $\text{Nm}^3$  refer to natural gas in normal state, i.e.

temperature:  $0^\circ\text{C}$

humidity: 0 percent

absolute pressure: 1 013.25 mbar

Latest valid calorific value ( $\text{kWh}/\text{Nm}^3$ ): 11.190

**Public grid** means the grid in the Austrian control areas APG, TIRAG and VKW 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 · 10 <sup>-3</sup> Wh
1 Wh	=	1 watt hour	=	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 (μ)
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
Wärmeleistung	thermal power plant	centrale thermique
Windkraftwerk	wind power plant	centrale éolienne
Photovoltaikanlage	solar / photovoltaic power plant	centrale photovoltaïque
Geothermie	geothermal energy	géothermie
Speicherentnahme	storage withdrawal	prélèvement
Speichereinpressung	storage injection	stockage
Eigenverbrauch	own use / consumption	usage propre
Verlust / Netzverlust	(grid) losses	pertes en ligne
Pumpstromaufwand / Verbrauch f. Pumpspeicherung	consumption for pumped storage / pumping	consommation des pompes
Haushalte	households	secteur résidentiel
Sonstige Kleinkunden	other small consumers	autres clients profilés
Lastganggemessene Kunden	load-metered consumers	clients mesurés
Inlandsstromverbrauch	domestic electricity consumption	consommation intérieure
Abgabe an Endkunden	supply to consumers	livraison aux consommateurs
Energetischer Endverbrauch	final energy consumption	consommation finale d'énergie
Nutzenergie(verbrauch)	useful energy (consumption)	énergie utile (consommation)
Heizwert	net calorific value	pouvoir calorifique inférieur
Brennwert	gross calorific value	pouvoir calorifique supérieur

## International conversion factors

Units of mass					
To:	kg	t	lt	st	lb
From:	Multiply by:				
<b>kg</b> Kilogramme	<b>1</b>	0.001	$9.84 \times 10^{-4}$	$1.102 \times 10^{-3}$	22 046
<b>t</b> Tonne	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	GWh
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 tonnes 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>GWh</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	m <sup>3</sup>
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
m <sup>3</sup> 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>				
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

<b>International Energy Agency, OECD Europe conversion factors (2008)</b>				
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 tonnes of oil equivalent (TOE) with a standard calorific value of 41,868 kJ/kg Source: IEA and own calculations

## Notes

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