KEY STATISTICS 2010

E-CONTROL

A better deal - wherever numbers and figures make things clear

WORKING FOR YOU –
WHEREVER YOU NEED ENERGY.

Editorial

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Preface

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

After the first edition in 2009, E-Control has now updated the information in this brochure, 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, such as switching rates in gas and electricity or facts and figures about our wholesale and retail markets. 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
Managing Director of E-Control GmbH

Overview

Economic indicators

Consumer price index Jan 1990 = 100						
	Total		Electricity		Natural gas	
	Annual average	Change in %	Annual average	Change in %	Annual average	Change in %
1990	101.9		99.7		100.8	
1995	119.5	3.1	107.2	1.4	106.0	1.0
2000	128.2	1.4	113.5	1.1	119.6	2.3
2005	141.7	2.0	120.4	1.1	149.7	4.3
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**

Source: Statistics Austria

Gross domestic product		
	m€ (rate of 2000)	Change in %
1990	161 727	
1995	179 136	2.0
2000	207 529	2.9
2005	224 574	1.6
2006	232 344	3.3
2007	240 585	3.4
2008	245 513	2.0
2009	**237 027**	**-3.6**

Source: Oesterreichische Nationalbank (OeNB)

Population annual average		
	Population numbers	Change in % (*)
1990	7 677 850	0.3
1995	7 948 278	0.7
2000	8 011 566	0.2
2005	8 225 278	0.5
2006	8 267 948	0.5
2007	8 300 954	0.4
2008	8 336 549	0.4
2009	8 363 040	0.3

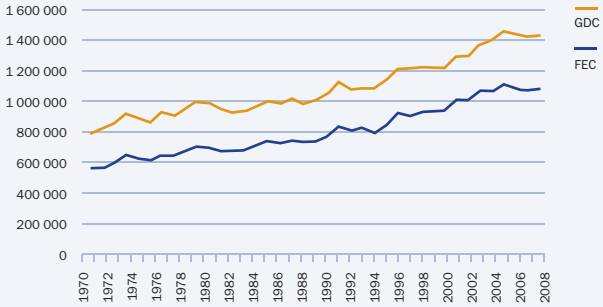
(*) average/year-on-year rates of change
Source: Statistics Austria

Households in Austria in 1 000				
	Single-person households	Multi-person households	Total	Average household size (persons)
1990	814	2 099	2 913	2.61
1995	893	2 201	3 093	2.54
2000	977	2 260	3 237	2.45
2005	1 198	2 277	3 475	2.34
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

Source: Statistics Austria

Energy industry indicators

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



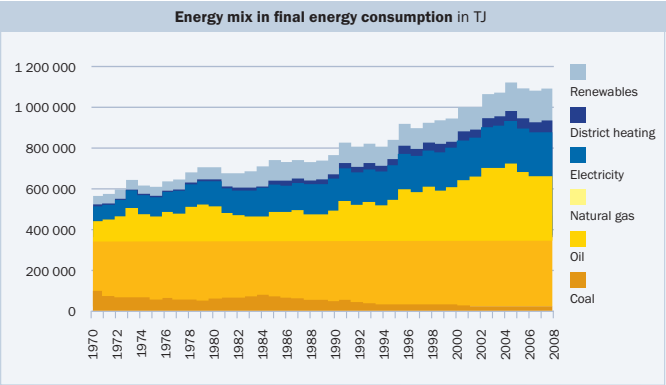
Source: Statistics Austria

Gross domestic consumption and final energy consumption in TJ

	Gross domestic consumption	Final energy consumption
1990	1 052 198	766 514
1995	1 139 780	844 834
2000	1 221 277	943 651
2005	1 457 622	1 118 337
2006	1 445 057	1 090 524
2007	1 424 247	1 079 484
2008	**1 428 761**	**1 088 538**

Source: Statistics Austria

ENERGY BALANCE

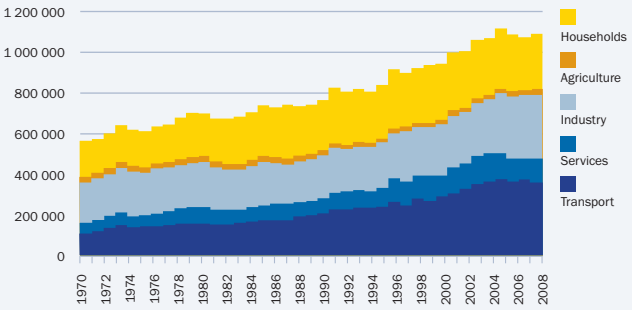


Source: Statistics Austria

Energy mix in final energy consumption in TJ							
	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
1990	53 334	327 578	114 375	152 452	25 636	93 139	**766 514**
1995	35 615	364 910	144 612	166 123	35 515	98 059	**844 834**
2000	36 715	398 993	170 613	185 762	42 320	109 248	**943 651**
2005	24 779	496 000	202 739	206 826	55 095	132 898	**1 118 337**
2006	27 088	469 768	186 594	207 552	58 736	140 787	**1 090 524**
2007	24 776	457 654	178 795	211 623	58 637	147 999	**1 079 484**
2008	**24 288**	**448 184**	**188 777**	**211 405**	**62 171**	**153 714**	**1 088 538**

Source: Statistics Austria

Final energy consumption by sectors in TJ



Source: Statistics Austria

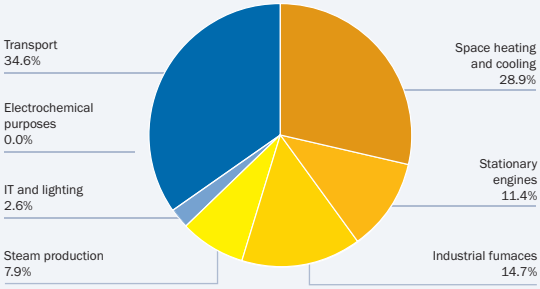
Final energy consumption by sectors in TJ

	Households	Agriculture	Industry	Services	Transport	Total
1990	242 482	24 497	216 571	74 127	208 838	**766 514**
1995	262 860	22 499	218 416	96 369	244 689	**844 834**
2000	268 582	23 895	253 656	101 335	296 183	**943 651**
2005	296 931	25 204	290 960	123 495	381 747	**1 118 337**
2006	280 868	24 407	304 025	108 393	372 831	**1 090 524**
2007	265 116	24 718	311 334	98 568	379 749	**1 079 484**
2008	**271 944**	**25 059**	**311 835**	**113 156**	**366 544**	**1 088 538**

Source: Statistics Austria

USEFUL ENERGY

Useful energy consumption in 2008



Source: Statistics Austria

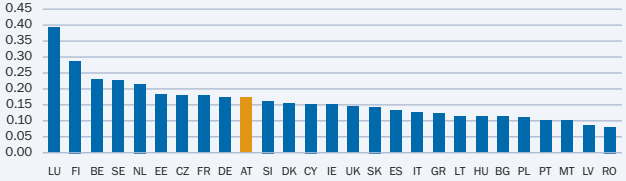
Useful energy consumption in 2008

	TJ	Share in %
Space heating and cooling	314 286	28.9
Stationary engines	123 649	11.4
Industrial furnaces	160 051	14.7
Steam production	85 485	7.9
IT and lighting	28 327	2.6
Electrochemical purposes	320	0.0
Transport	376 420	34.6
Total	**1 088 538**	**100.0**

Source: Statistics Austria

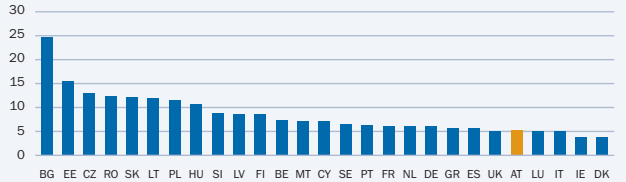
INTERNATIONAL ENERGY INDICATORS

Per capita energy consumption in EU countries in 2007, TJ/inhabitant



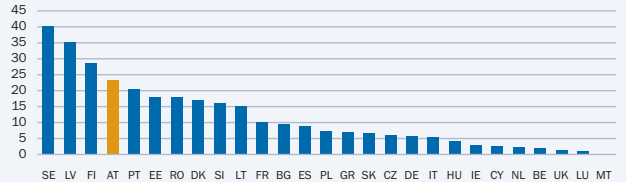
Source: EUROSTAT

Gross domestic consumption of energy divided by GDP in 2007, TJ/m€



Source: EUROSTAT

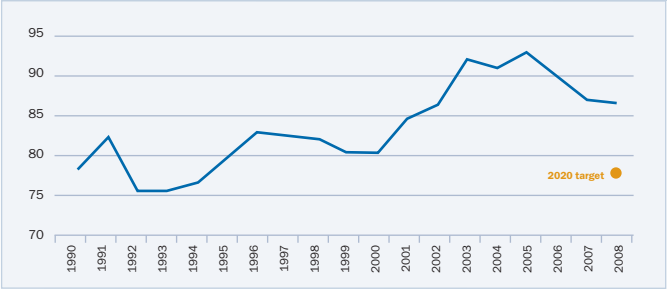
Renewables shares in EU MS according to the Renewables Directive in 2005, %



Soruce: Official Journal of the European Union, 2008

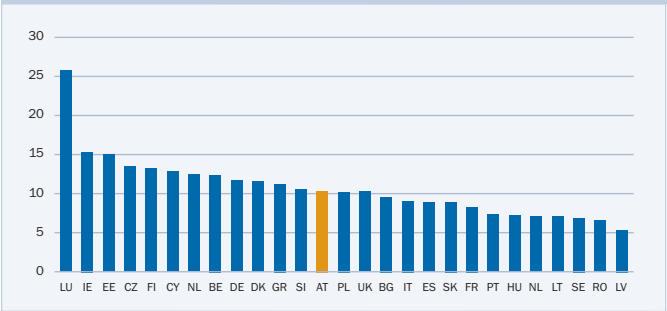
GREENHOUSE GAS EMISSIONS

Emissions in Austria and the 2020 target 1990 - 2008 in m t CO_2 equivalents



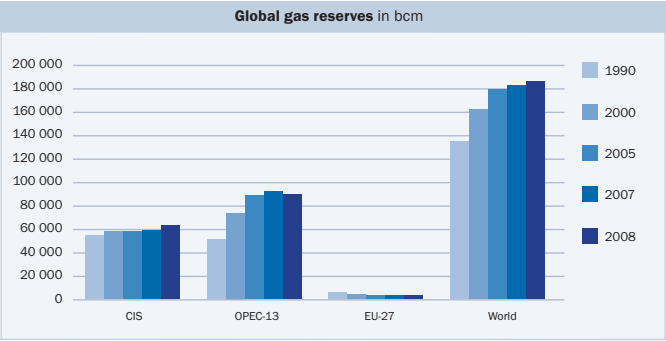
Source: Environment Agency Austria

Per capita emissions in EU countries in 2008, t CO_2 equivalents

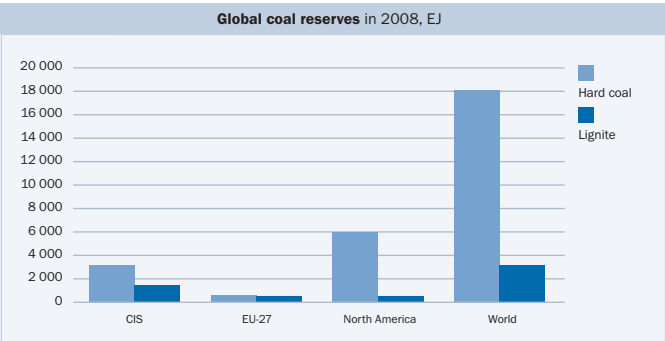


Source: EUROSTAT

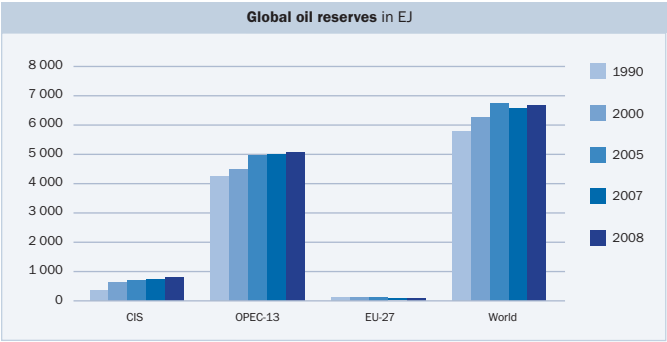
Energy reserves



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

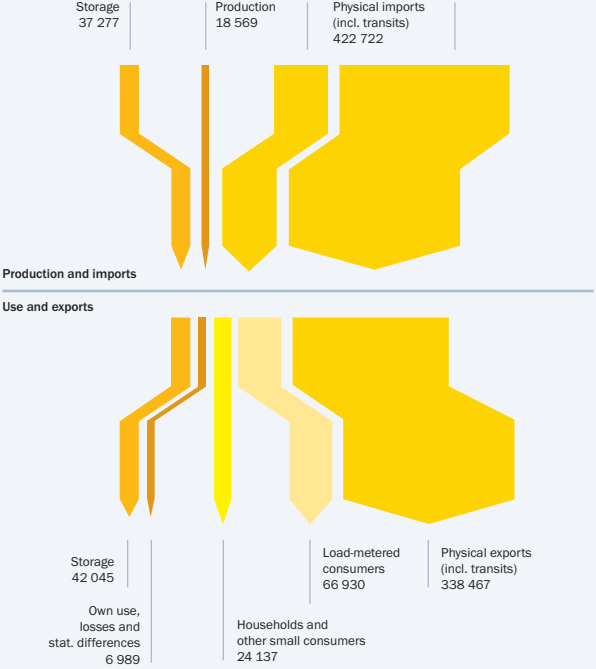


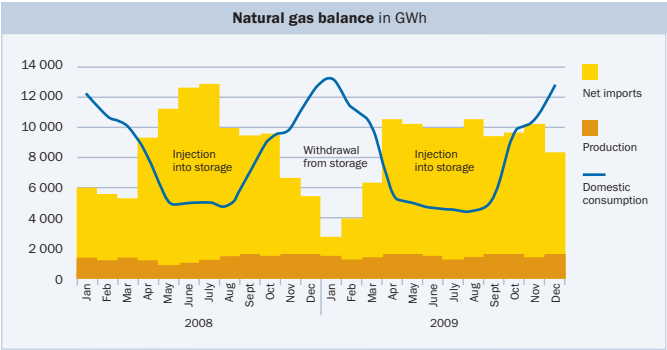
Source: German Federal Institute for Geosciences and Natural Resources, Energy reserves, overview in 2010

Operational statistics

Natural gas in Austria

Energy flow chart for 2009, in GWh



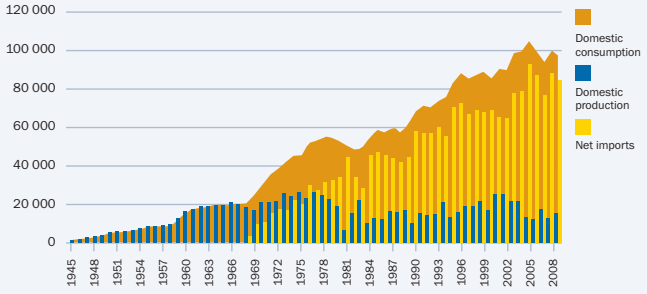


Natural gas balance in 2009

	m Nm³	GWh	year-on-year change in %
Supply to consumers (a)	**8 217**	**91 542**	**-1.8**
Statistical difference (b)	137	1 522	—
Own use and losses (c)	210	2 335	-26.2
Own use and losses (d)	239	2 658	17.4
Domestic consumption	**8 802**	**98 056**	**-2.1**
Injection into storage (e)	3 774	42 045	19.8
Exports (e)	30 383	338 467	-2.7
Consumption and exports = production and imports	**42 959**	**478 567**	**-0.9**
Imports (e)	37 946	422 722	-3.0
Production (e)	1 667	18 569	9.1
Withdrawal from storage (e)	3 346	37 277	22.5

(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 consumption and supply in GWh



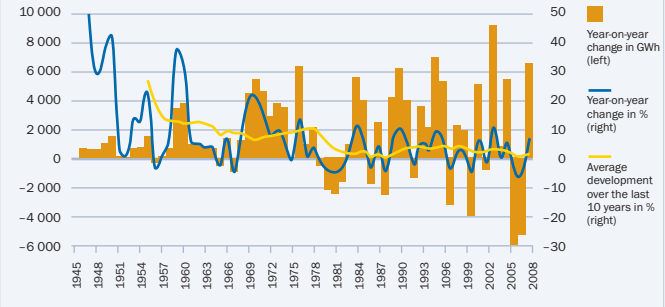
Natural gas balance in GWh

	Net imports	Domestic production (a)	Domestic consumption	Own use and losses (b)	Statistical difference (c)	Supply to consumers (d)
1990	57 785	9 631	67 416	2 569		64 847
1995	70 275	12 621	82 897	3 265	1	79 631
2000	68 635	16 491	85 126	4 612		80 514
2005	92 019	13 028	105 047	5 001	-374	100 420
2006	86 263	12 717	98 981	5 099	-15	93 897
2007	76 559	17 160	93 720	4 939	362	88 418
2008	87 816	12 332	100 148	5 427	1 492	93 228
2009	84 255	13 801	98 056	4 992	1 522	91 542

(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 %

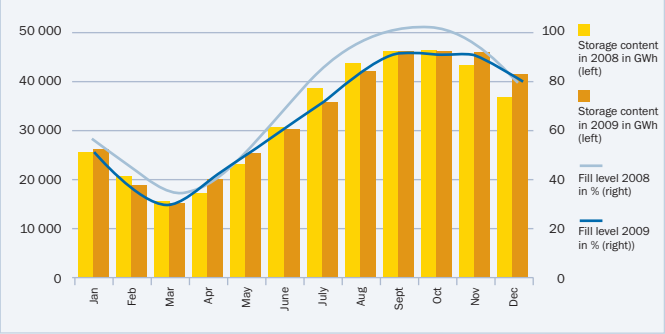


Physical imports and exports of natural gas in 2009

	Imports (*)		Exports (*)	
	in m Nm³	in GWh	in m Nm³	in GWh
Germany	5 183	57 739	34 008	34 008
Switzerland			61	678
Italy			21 669	241 388
Slovenia			1 661	18 503
Hungary			3 384	37 700
Slovakia	32 735	364 672	556	6 190
Czech Republic	28	311		
Total	**37 946**	**422 722**	**61 338**	**338 467**

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

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



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

Source: E-Control

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
2005	32 202	32 202	13 254	10 036	14 887	14 887
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	**50 527**	**50 527**	**21 853**	**18 743**	**25 774**	**25 774**

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

Domestic gas production in 2007		
	Max. production rate in Nm^3 per hour	Max. production rate in MWh per hour
Total	**297 955**	**3 334 116**

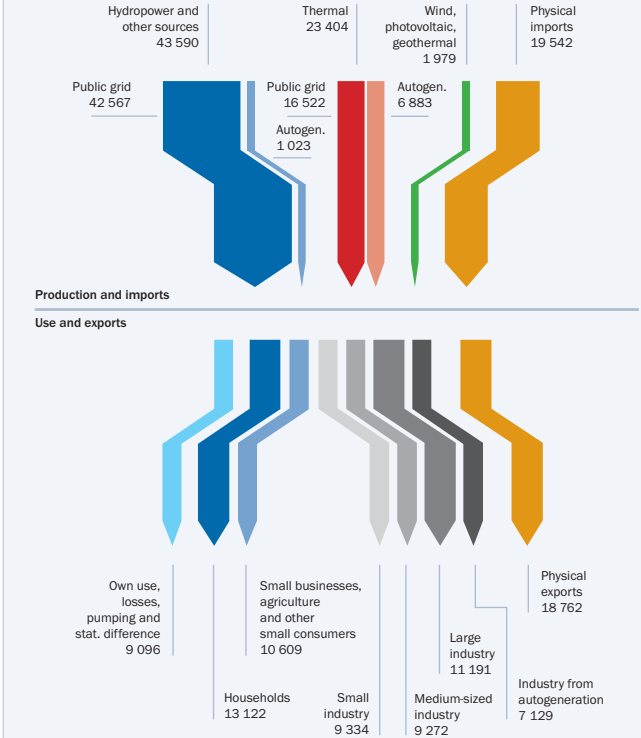
Network length at year end in km			
	Transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
1990 (*)	1 887	2 582	n.a.
1995 (*)	2 060	3 032	n.a.
2000 (*)	2 377	3 266	n.a.
2005	2 757	3 425	29 925
2006	2 757	3 466	30 784
2007	2 876	3 523	31 074
2008	2 876	3 556	31 883
2009	**2 876**	**3 656**	**32 079**

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

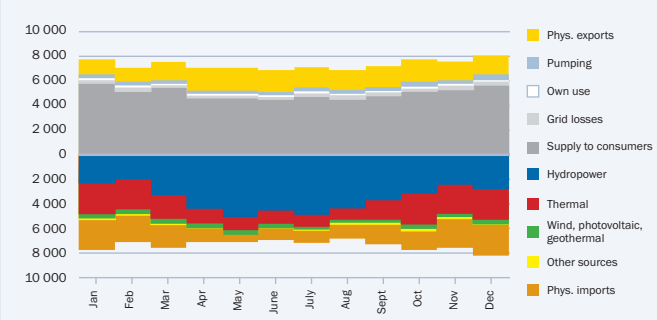
Grid connections and metering points at year end						
	Number of connections					Number of metering points
		Grid level 3				
	Grid level 2	Up to 100 mbar	Over 100 mbar	Total	Total	
2005	406	1 199 818	60 821	1 260 639	1 261 045	1 333 341
2006	411	1 201 894	61 088	1 262 982	1 263 393	1 339 911
2007	418	1 196 310	63 521	1 259 831	1 260 249	1 348 132
2008	446	1 205 497	63 548	1 269 045	1 269 491	1 351 860
2009	**441**	**1 224 057**	**66 211**	**1 290 268**	**1 290 709**	**1 349 420**

Electricity in Austria (total electricity supply)

Energy flow chart for 2009 in GWh



Electricity balance 2009 in GWh

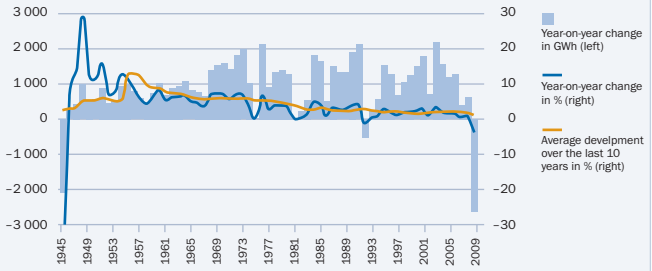


Electricity balance 2009

		2008 in GWh	2009 in GWh	Year-on-year change in GWh	Year-on-year change in %
Supply to consumers (1)		62 826	60 431	-2 395	-3.8
Grid losses		3 686	3 520	-166	-4.5
Own use		1 918	1 842	-76	-4.0
Domestic consumption		**68 430**	**65 793**	**-2 637**	**-3.9**
Pumping		3 273	3 961	688	21.0
Physical exports		14 934	18 762	3 828	25.6
Use and exports = generation and imports		**86 636**	**88 516**	**1 880**	**2.2**
Gross generation	Hydro	40 690	42 990	2 300	5.7
	Thermal	24 131	23 404	-727	-3.0
	Renewables (2)	2 031	1 979	-52	-2.6
	Other sources	-12	600		-3.0
Physical imports		19 795	19 542	-253	-1.3

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

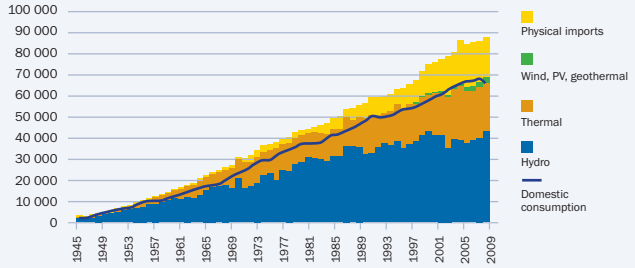
Electricity consumption trends in GWh and %



Electricity balance in GWh

	Supply to consumers	Own use	Grid losses	Domestic con-sumption	Electricity for pumping	Physical exports	Use and exports = generation and imports
1990	43 995	1 563	2 971	**48 529**	1 425	7 298	**57 252**
1995	47 722	1 556	3 328	**52 606**	1 511	9 757	**63 874**
2000	53 751	1 566	3 195	**58 512**	1 990	15 216	**75 718**
2005	60 465	2 051	3 567	**66 083**	3 276	17 732	**87 091**
2006	61 827	2 016	3 531	**67 373**	3 336	14 580	**85 289**
2007	62 142	1 942	3 700	**67 784**	2 986	15 767	**86 537**
2008	62 826	1 918	3 686	**68 430**	3 273	14 934	**86 636**
2009	**60 431**	**1 842**	**3 520**	**65 793**	**3 961**	**18 762**	**88 516**

Domestic consumption and supply in GWh



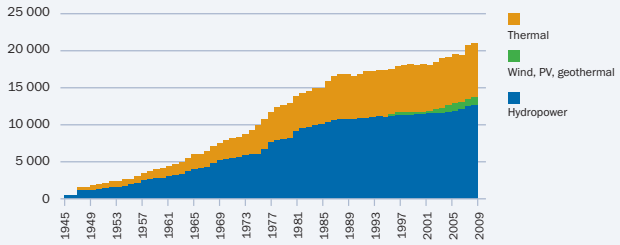
Electricity balance in GWh

	Gross generation					Physical imports	Generation and imports = use and exports
	Hydro-power	Thermal	Wind, PV, geothermal	Other sources	Total		
1990	32 492	17 921			**50 413**	6 839	**57 252**
1995	38 477	18 110			**56 587**	7 287	**63 874**
2000	43 461	18 270	67		**61 798**	13 920	**75 718**
2005	39 574	26 126	1 347	-312	**66 735**	20 355	**87 091**
2006	38 039	24 680	1 766	-121	**64 364**	20 925	**85 289**
2007	39 171	23 376	2 059	148	**64 754**	21 783	**86 537**
2008	40 690	24 131	2 031	-12	**66 841**	19 795	**86 636**
2009	**42 990**	**23 404**	**1 979**	**600**	**68 974**	**19 542**	**88 516**

Gross generation mix in 2009						
Primary energy source			**GWh**	**Share in %**		
Hydropower	Run of river	over 10 MW	25 206	36.5	58.6	
		up to 10 MW	4 655	6.7	10.8	
	Pumped storage	over 10 MW	12 687	18.4	29.5	
		up to 10 MW	442	0.6	1.0	
	Total hydro		**42 990**	**62.3**	**100.0**	
Thermal	Fossil fuels and derivatives	Hard coal	3 756	5.4		16.0
		Lignite	0	0.0		0.0
		Derivatives (1)	1 275	1.8		5.4
		Oil derivatives (1)	1 223	1.8		5.2
		Natural gas	12 323	17.9		52.7
		Total	18 577	26.9		79.4
	Biofuels (2)	Solid	2 444	3.5		10.4
		Liquid	40	0.1		0.2
		Gaseous	586	0.8		2.5
		Sewage and landfill gases	53	0.1		0.2
		Total	3 123	4.5		13.3
	Other biofuels (3)		1 177	1.7		5.0
	Other fuels		527	0.8		2.3
	Total thermal		**23 404**	**33.9**		**100.0**
	(of which CHP)		(19 274)	(27.9)		82.4
Renewables	Wind (4)		1 954	2.8	98.7	
	Photovoltaics (4)		24	0.0	1.2	
	Geothermal (4)		2	0.0	0.1	
	Total renewables (4)		**1 979**	**2.9**	**100.0**	
Other sources (5)			600	0.9		
Total			**68 974**	**100.0**		

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

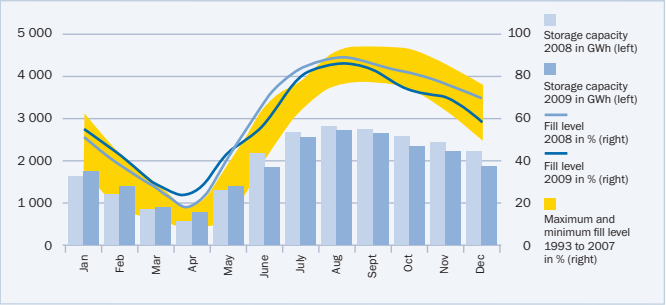
Installed capacity at year end (MW)



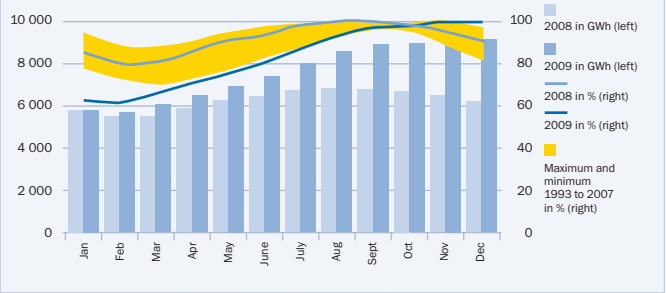
Installed capacity at year end (MW)

	Gross maximum capacity						
	Hydropower plants			Wind, PV, geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
1990	n.a.	n.a.	10 947	n.a.	5 740	**16 687**	**16 233**
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	6 515	11 832	849	6 527	**19 208**	**18 703**
2006	5 350	6 519	11 869	985	6 592	**19 447**	**18 930**
2007	5 394	6 517	11 911	1 010	6 377	**19 299**	**18 898**
2008	5 399	6 619	12 019	1 014	7 248	**20 281**	**20 171**
2009	**5 460**	**7 069**	**12 529**	**1 031**	**7 388**	**20 949**	**20 515**

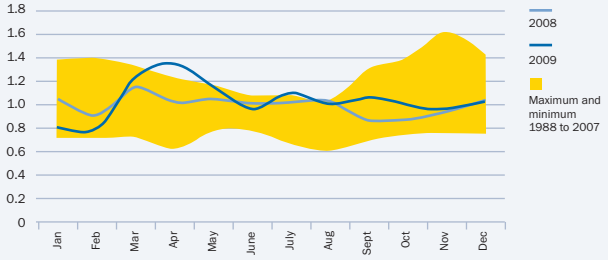
Storage capacity and fill levels at month end - large reservoirs of public generators in GWh and %



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

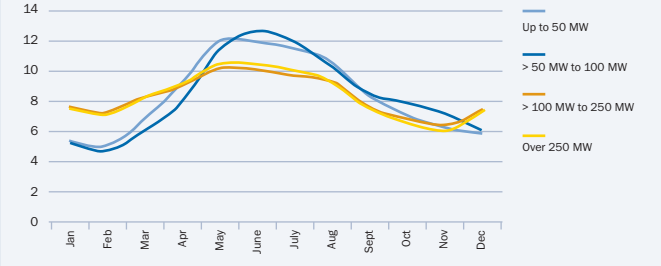
2008	2009	1988 to 2007 maximum	1988 to 2007 minimum
1.00	1.06	1.16	0.87

Availability of power plants of public generators (*) in %						
	Thermal power plants			Pumped storage power plants		
	Availability factor	Utilisation factor	Outages	Availability factor	Utilisation factor	Outages
2000	76.7	32.6	5.9	93.6	18.1	2.7
2005	85.3	42.7	5.3	92.6	18.9	1.5
2006	86.2	38.0	6.5	89.5	17.1	2.4
2007	83.7	37.0	5.7	90.8	17.6	2.1
2008	82.9	37.5	8.3	93.4	17.7	4.4
2009	**83.5**	**29.2**	**7.3**	**89.4**	**18.2**	**5.9**
2002 – 2009	82.8	37.1	6.8	91.0	18.0	2.8

Firm capacity (*) - run-of-river plants of public generators (2009)					
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	183	278	–	–	**461**
Run-of-river plants without pondage	126	83	444	310	**963**
Total	**309**	**361**	**444**	**310**	**1 424**
	Share in maximum capacity in %				
Run-of-river plants with pondage	43.8	46.0	–	–	45.1
Run-of-river plants without pondage	34.3	53.6	38.5	34.1	37.3
Total	**39.4**	**47.5**	**38.5**	**34.1**	**39.5**

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

Share of monthly standard capacity in annual values - run-of-river plants of public generators (*), in 2009, in %



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

Combined heat and power (CHP)

	Efficiency of thermal power plants in %			Capacity of thermal power plants in MW		
	With CHP		Without CHP	With CHP		Without CHP
	Overall efficiency (1)	Effective electric efficiency (2)	Efficiency (3)	Thermal capacity	Maximum capacity	Maximum capacity
2000	69.0	49.7	42.8	6 648	3 964	2 351
2005	69.8	52.8	41.5	7 532	4 511	2 016
2006	70.5	52.5	38.9	7 518	4 542	2 051
2007	71.2	53.0	38.6	7 779	4 380	1 997
2008	69.9	52.3	38.5	8 667	5 215	2 032
2009	**71.6**	**55.4**	**37.0**	**8 796**	**5 458**	**1 931**

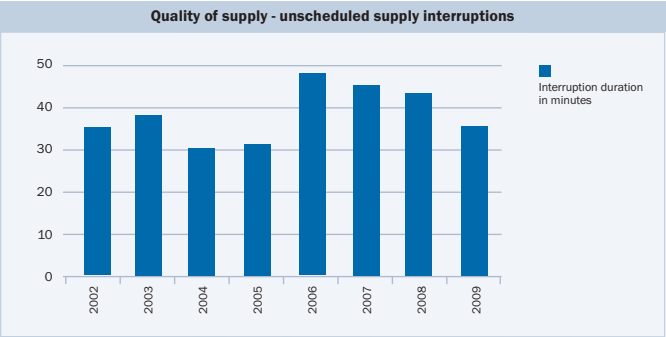
(1) Electricity and heat output divided by fuel input
(2) Electricity output divided by fuel input
(3) Electricity output divided by fuel input

Route length (*) of the public grid at year-end 2009					
	Overhead lines		Cables		Total
Voltage level	km	Share in %	km	Share in %	km
380 kV	1 333	0.6	54	0.0	**1 388**
220 kV	1 847	0.8	3	0.0	**1 850**
110 kV	6 064	2.6	473	0.2	**6 536**
1 kV to 110 kV	30 506	13.1	33 955	14.6	**64 461**
Up to 1 kV	40 046	17.2	118 344	50.9	**158 389**
Total	**79 795**	**34.3**	**152 829**	**65.7**	**232 624**

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

High voltage substations in the public grid at year-end 2009		
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	968	39 657
High voltage over 200 kV	63	22 435
High voltage to high, medium and low voltage	**1 037**	**62 105**

Medium voltage substations in the public grid at year-end 2009		
Voltage level	Number of transformers	Total capacity in MVA
Medium voltage to medium and low voltage	**76 169**	**28 697**


Quality of supply - unscheduled supply interruptions
50
40
30
20
10
0
2002
2003
2004
2005
2006
2007
2008
2009
Interruption duration in minutes

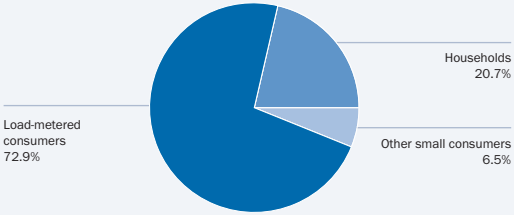
Market statistics

Austrian gas market

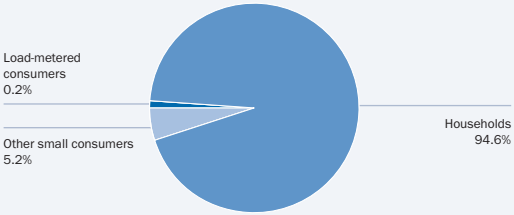
Consumption structure					
		Supply to consumers			
Consumer catgegory	Unit	2008	2009	Average (*)	Share (*)
Households	GWh	18 297	18 383	19 270	20.7%
Other small consumers	GWh	5 690	5 754	6 047	6.5%
Load-metered consumers	GWh	68 956	66 930	67 957	72.9%
Statistical difference	GWh	285	475		
Total supply to consumers	**GWh**	**93 228**	**91 542**	**93 274**	**100.0%**
		Number of metering points (MP)			
Consumer category	Unit	2008	2009	Average (*)	Share (*)
Households	1 000	1 278	1 275	1 273	94.6%
Other small consumers	1 000	72	72	70	5.2%
Load-metered consumers	1 000	4	4	3	0.2%
Total number of metering points	**1 000**	**1 353**	**1 351**	**1 346**	**100.0%**
		Average consumption			
Consumer catgegory	Unit	2008	2009	Average (*)	
Households	kWh/MP	14 317	14 418	15 139	
Other small consumers	kWh/MP	79 277	80 092	86 537	
Load-metered consumers	kWh/MP	19 234 585	17 406 901	20 813 836	
Total	**kWh/MP**	**68 888**	**67 774**	**69 298**	

(*) 2005 - 2009 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)



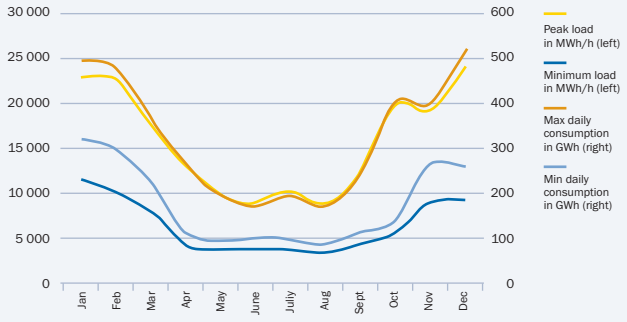
Consumption structure - supply to consumers by grid zone in GWh					
Federal province / grid zone		**2008**	**2009**	**Average (*)**	**Share (*) in %**
Burgenland		1 933	2 014	**2 047**	**2.2**
Carinthia		1 758	1 673	**1 736**	**1.9**
Lower Austria		20 642	20 069	**21 155**	**22.7**
Upper Austria		24 351	23 267	**23 771**	**25.5**
Salzburg		3 553	2 988	**3 540**	**3.8**
Styria		13 167	11 592	**12 707**	**13.6**
Tyrol		3 190	3 102	**3 104**	**3.3**
Vorarlberg		2 354	2 264	**2 312**	**2.5**
Vienna		21 995	24 097	**22 902**	**24.6**
Austria	Statistical difference	285	475	—	—
	Total supply to consumers	**93 228**	**91 542**	**93 274**	**100.0**

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	**2008**	**2009**	**Average (*)**	**Share (*) in %**
Burgenland	48	48	47	**3.5**
Carinthia	14	14	14	**1.0**
Lower Austria	288	289	284	**21.1**
Upper Austria	151	150	148	**11.0**
Salzburg	34	34	32	**2.4**
Styria	65	66	64	**4.7**
Tyrol	34	35	32	**2.3**
Vorarlberg	31	32	32	**2.4**
Vienna	688	683	693	**51.5**
Austria	**1 353**	**1 351**	**1 346**	**100.0**

(*) 2005 - 2009 average

Load indicators for 2009 in MWh/h and GWh

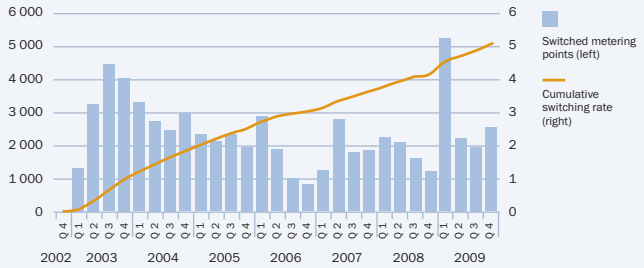


Load indicators

Year	Annual peak load MWh/h	Annual minimum load MWh/h	Maximum daily minimum load MWh/h	Maximum daily consumption GWh	Minimum daily consumption GWh	Peak load utilisation period h
2005	24 456	4 026	18 701	514	105	4 106
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**

THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES

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



(*) By number of metering points

Supplier switches and switching rates (*)					
	2005	2006	2007	2008	2009
	Number of supplier switches				
Households	8 058	5 996	6 744	6 194	**9 618**
Other small consumers	754	680	967	1 021	**2 249**
Load-metered consumers	83	84	125	141	**257**
Total	**8 895**	**6 760**	**7 836**	**7 356**	**12 124**
	Switching rates in %				
Households	0.6	0.5	0.5	0.5	**0.8**
Other small consumers	1.1	1.0	1.4	1.4	**3.1**
Load-metered consumers	3.1	2.9	3.9	3.9	**6.7**
Total	**0.7**	**0.5**	**0.6**	**0.5**	**0.9**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2006	2007	2008	2009
Burgenland	50	66	144	171	**213**
Carinthia	37	15	89	65	**31**
Lower Austria	2 180	2 232	2 403	1 929	**4 058**
Upper Austria	1 273	963	1 041	1 477	**1 366**
Salzburg	78	73	84	44	**137**
Styria	158	197	521	641	**1 185**
Tyrol					**39**
Vorarlberg				45	**14**
Vienna	5 119	3 214	3 554	2 984	**5 081**
Austria	**8 895**	**6 760**	**7 836**	**7 356**	**12 124**

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2006	2007	2008	2009
Burgenland	0.1	0.1	0.3	0.4	**0.4**
Carinthia	0.3	0.1	0.6	0.5	**0.2**
Lower Austria	0.8	0.8	0.8	0.7	**1.4**
Upper Austria	0.9	0.7	0.7	1.0	**0.9**
Salzburg	0.3	0.2	0.3	0.1	**0.4**
Styria	0.3	0.3	0.8	1.0	**1.8**
Tyrol					**0.1**
Vorarlberg				0.1	**0.0**
Vienna	0.7	0.5	0.5	0.4	**0.7**
Austria	**0.7**	**0.5**	**0.6**	**0.5**	**0.9**

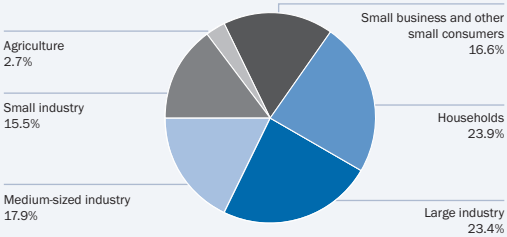
(*) By number of metering points

Austrian electricity market (public grid)

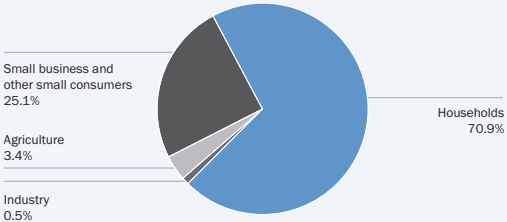
Consumption structure					
		Supply to consumers			
Consumer catgegory	Unit	2008	2009	Average (*)	Share in % (*)
Households	GWh	12 960	13 122	12 891	23.9
Small business and other small consumers	GWh	9 081	9 100	8 990	16.6
Agriculture	GWh	1 446	1.510	1 464	2.7
Small industry	GWh	9 175	9 334	8 380	15.5
Medium-sized industry	GWh	9 639	9 272	9 675	17.9
Large industry	GWh	13 006	11 191	12 636	23.4
Statistical difference	GWh	–29	–227	—	—
Total supply to consumers	**GWh**	**55 277**	**53 302**	**54 034**	**100,0**
		Number of metering points (MP)			
Consumer catgegory	Unit	2008	2009	Average (*)	Share in % (*)
Households	1 000	4 092.3	4 121.5	4 056.4	70.9
Small business and other small consumers	1 000	1 441.5	1 444.0	1 436.2	25.1
Agriculture	1 000	195.6	194.3	195.6	3.4
Small industry	1 000	30.1	31.4	28.4	0.5
Medium-sized industry	1 000	1.9	1.8	2.1	0.0
Large industry	1 000	0.2	0.2	0.2	0.0
Total number of metering points	**1 000**	**5 761.6**	**5 793.2**	**5 719.0**	**100.0**
		Average consumption			
Consumer catgegory	Unit	2008	2009	Average (*)	
Households	kWh/MP	3 167	3 184	3 178	
Small business and other small consumers	kWh/MP	6 300	6 302	6 259	
Agriculture	kWh/MP	7 389	7 770	7 482	
Small industry	kWh/MP	304 378	297 207	294 951	
Medium-sized industry	kWh/MP	5 108 029	5 030 910	4 507 355	
Large industry	kWh/MP	60 776 901	57 985 230	63 754 242	
Total	**kWh/MP**	**9 594**	**9 201**	**9 448**	

(*) 2005 - 2009 average

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



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



(*) 2005 - 2009 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

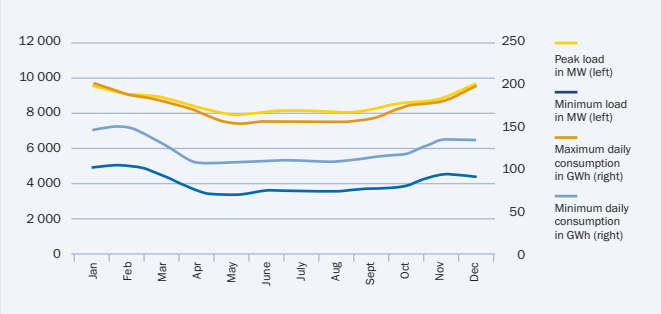
Consumption structure - supply to consumers by grid zone in GWh					
Federal province / grid zone		**2008**	**2009**	**Average (*)**	**Share (*) in %**
Burgenland		1 524	1 520	1 498	2.8
Carinthia		4 212	3 956	4 109	7.6
Lower Austria		7 705	7 619	7 469	13.8
Upper Austria		9 580	9 211	9 260	17.1
Salzburg		3 508	3 452	3 442	6.4
Styria		8 274	7 727	8 127	15.0
Tyrol		5 534	5 402	5 499	10.2
Vorarlberg		2 523	2 504	2 478	4.6
Vienna		12 446	12 137	12 153	22.5
Austria	Statistical difference	–29	–227	—	—
	Supply to consumers	**55 277**	**53 302**	**54 034**	**100.0**

(*) 2005 - 2009 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	**2008**	**2009**	**Average (*)**	**Share (*) in %**
Burgenland	193	194	**191**	**2.9**
Carinthia	374	377	**374**	**5.6**
Lower Austria	825	828	**819**	**12.3**
Upper Austria	954	958	**945**	**14.2**
Salzburg	407	408	**403**	**6.1**
Styria	904	907	**897**	**13.5**
Tyrol	447	450	**443**	**6.7**
Vorarlberg	1 142	1 153	**1 136**	**17.1**
Vienna	1 451	1 461	**1 446**	**21.7**
Austria	**6 696**	**6 736**	**6 653**	**100.0**

(*) 2005 - 2009 average

Load indicators for 2009 in MW and GWh

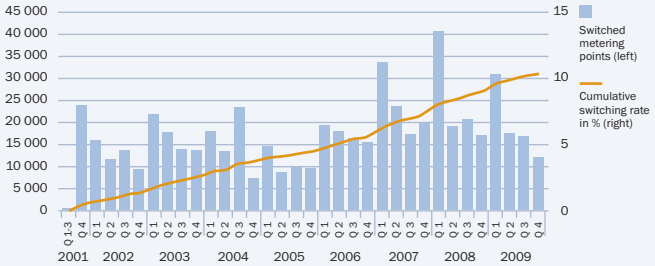


Load indicators						
	Annual peak load	Annual minimum load	Maximum daily min. load	Daily baseload supply	Peak load utilisation time	Load factor (M)
	MW	MW	MW	GWh	h	
2005	9 195	3 573	6 472	43 217	6 142	0.70
2006	9 492	3 836	6 812	44 694	6 102	0.70
2007	9 447	3 886	6 503	44 819	6 175	0.70
2008	9 413	3 992	6 412	45 290	6 265	0.71
2009	**9 698**	**3 418**	**6 581**	**42 101**	**5 865**	**0.67**

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

THE EFFECTS OF LIBERALISATION: ELECTRICITY SWITCHING RATES

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



Supplier switches and switching rates (*)

Consumer category	2005	2006	2007	2008	2009
	Number of supplier switches				
Households	22 768	40 756	60 665	54 874	48 240
Other small consumers	17 883	26 314	32 111	39 730	27 689
Load-metered consumers	1 988	2 461	2 488	2 888	**1 600**
Total	**42 639**	**69 531**	**95 264**	**97 492**	**77 529**
	Switching rates in %				
Households	0.6	1.0	1.5	1.3	**1.2**
Other small consumers	1.1	1.6	1.9	2.4	**1.7**
Load-metered consumers	7.0	8.5	8.1	9.0	**4.8**
Total	**0.8**	**1.2**	**1.7**	**1.7**	**1.3**

(*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2006	2007	2008	2009
Burgenland	335	1 319	1 718	1 586	**1 351**
Carinthia	5 078	3 070	8 850	4 519	**2 855**
Lower Austria	6 322	13 252	18 381	14 767	**14 785**
Upper Austria	11 952	13 472	16 247	20 244	**10 596**
Salzburg	1 057	2 113	2 047	2 312	**1 087**
Styria	3 502	9 530	16 971	27 796	**21 874**
Tyrol	2 028	1 449	1 913	1 539	**1 377**
Vorarlberg	240	472	447	894	**534**
Vienna	12 125	24 854	28 690	23 835	**23 070**
Austria	**42 639**	**69 531**	**95 264**	**97 492**	**77 529**

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2006	2007	2008	2009
Burgenland	0.2	0.7	0.9	0.8	**0.7**
Carinthia	1.4	0.8	2.4	1.2	**0.8**
Lower Austria	0.8	1.6	2.2	1.8	**1.8**
Upper Austria	1.3	1.4	1.7	2.1	**1.1**
Salzburg	0.3	0.5	0.5	0.6	**0.3**
Styria	0.4	1.1	1.9	3.1	**2.4**
Tyrol	0.5	0.3	0.4	0.3	**0.3**
Vorarlberg	0.1	0.2	0.2	0.4	**0.3**
Vienna	0.8	1.7	2.0	1.6	1.6
Austria	**0.8**	**1.2**	**1.7**	**1.7**	**1.3**

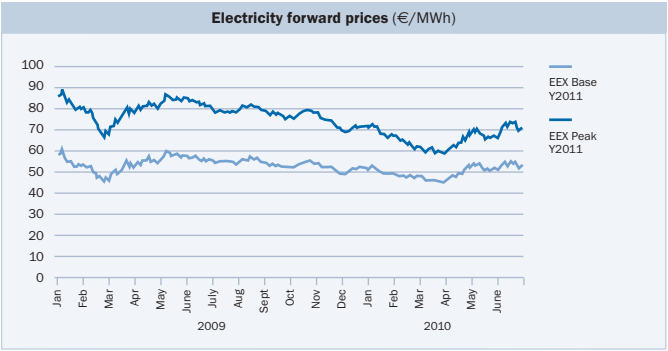
(*) By number of metering points

Green electricity injection and support payments
(Austria, 2009 and 2008)

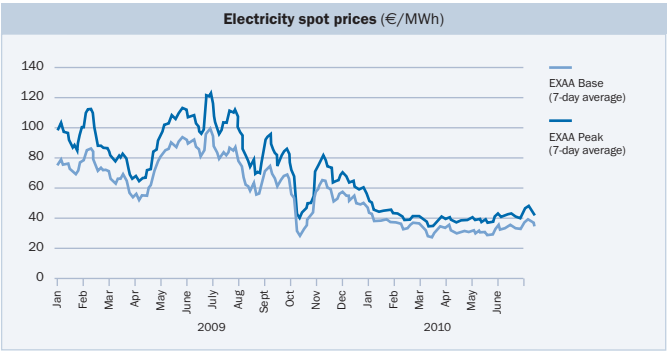
Primary energy source		Injection in 2009 in GWh	Net support in 2009 in m €	Green power contribution to total supply in %	Average support in cent/kWh
2009				(1)	
Supported small hydro		**644**	**33.3**	**1.2**	**5.17**
Other renewables		**4 503**	**514.2**	**8.4**	**11.42**
Wind		1 915	148.8	3.6	7.77
Wastes with high biog. fraction		1 958	270.9	3.7	13.84
Biogas *)		525	73.7	1.0	14.05
Liquid biomass *)		39	5.4	0.1	13.85
Photovoltaics		21	12.1	0.04	57.02
Sewage and landfill gas		44	3.1	0.1	7.00
Geothermal		1,5	0.19	0.003	12.71
Total small hydro and other renewables		**5 147**	**547.5**	**9.6**	**10.64**
2008				(2)	
Supported small hydro		**945**	**53.1**	**1.7**	**5.62**
Other renewables		**4 496**	**523.1**	**8.1**	**11.64**
Wind		1 988	154.8	3.6	7.79
Wastes with high biog. fraction		1 900	258.5	3.4	13.61
Biogas *)		503	89.0	0.9	17.71
Liquid biomass *)		36	6.3	0.1	17.71
Photovoltaics		17	10.4	0.03	60.05
Sewage and landfill gas		50	3.8	0.1	7.61
Geothermal		1.6	0.18	0.003	11.15
Total small hydro and other renewables		**5 440**	**576.2**	**9.8**	**10.59**

*) Incl. the 4 cent/kWh top-up payments to cover high fuel/feedstock costs in 2008
1) Relating to the total electricity supplied to consumers from the public grid in 2009, i.e. 53 439 GWh (preliminary value)
2) Relating to the total electricity supplied to consumers from the public grid in 2008, i.e. 55 438 GWh
[16/02/2010 | Source: Green power settlement agent OeMAG, Feb 2010 - preliminary values]

Wholesale markets



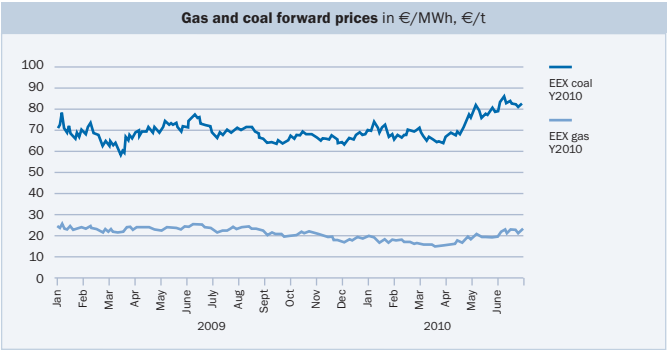
Source: EEX



Source: EXAA

Electricity forward and spot prices in €/MWh				
	EEX Peak		EEX Base	
	Day-ahead average	Y2011 average	Day-ahead average	Y2011 average
2007	48.75	79.47	37.99	55.15
2008	79.43	100.43	65.76	70.04
January 2009	68.63	83.20	57.12	55.36
February 2009	55.50	73.66	47.79	49.63
March 2009	41.96	75.48	37.19	50.97
April 2009	38.34	81.05	33.05	55.03
May 2009	38.29	85.03	30.93	58.23
June 2009	39.87	82.88	33.21	56.71
July 2009	42.02	79.00	35.52	54.93
August 2009	43.73	80.87	36.07	55.86
September 2009	47.91	77.50	39.58	53.23
October 2009	55.82	78.26	44.54	54.11
November 2009	45.25	74.06	35.94	52.03
December 2009	44.93	70.78	35.69	50.98
January 2010	48.68	69.12	42.21	50.47
Februar 2010	48.41	64.02	41.73	47.95
March 2010	44.21	60.42	39.19	46.16
April 2010	43.77	64.36	40.04	49.51
May 2010	46.76	67.85	41.17	52.31
June 2010	51.12	71.42	43.35	53.61

Sources: EXAA, EEX



Source: EEX

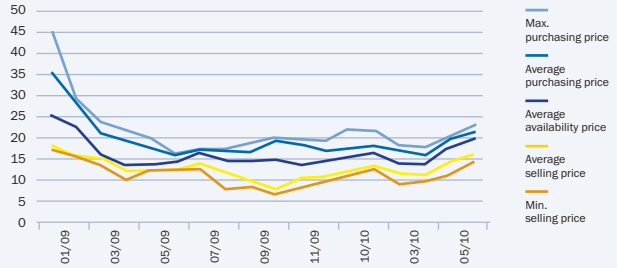
Gas and coal forward prices in €/MWh, €/t					
Y2011					
	Gas average	Coal average		Gas average	Coal average
January 2009	23.64	69.42	October 2009	21.24	67.81
February 2009	22.99	67.75	November 2009	19.17	65.64
March 2009	22.55	62.83	December 2009	18.44	66.66
April 2009	23.60	69.18	January 2010	18.20	69.83
May 2009	23.70	71.74	February 2010	17.17	68.08
June 2009	24.65	73.58	March 2010	15.66	65.99
July 2009	22.80	68.88	April 2010	17.52	70.72
August 2009	23.48	69.68	May 2010	19.71	78.27
September 2009	20.69	64.45	June 2010	22.12	82.57

Sources: EEX, Energate

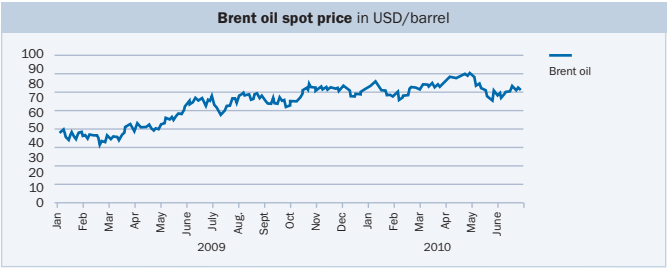
Gas import price					
	2001=100	Year-on-year change in %		2001=100	Year-on-year change in %
2001	100.0		2008	214.8	29.0
2002	94.9	-5.4	2009	155.8	-0.8
2003	98.5	3.7	January 10	154.5	-0.8
2004	96.8	-1.8	February 10	172.3	10.3
2005	128.2	24.5	March 10	170.5	-1.1
2006	165.7	22.6	April 10	168.5	-1.2
2007	152.6	-8.5	May 10	162.8	-3.5

Source: Statistics Austria

Balancing energy prices for natural gas in €/MWh



Source: Austrian Gas Clearing and Settlement (AGCS)



Source: Erdöl-Vereinigung (Union Pétrolière)

Brent oil spot price			
	€/ barrel	USD/ barrel	Month-on-month change of € in %
January 2009	34.69	45.80	
February 2009	34.39	43.97	-0.86
March 2009	35.85	46.61	4.07
April 2009	38.71	51.10	7.39
May 2009	42.66	58.13	9.25
June 2009	49.50	69.33	13.84
July 2009	46.63	65.70	-6.17
August 2009	51.20	73.05	8.92
September 2009	46.94	68.33	-9.07
October 2009	50.06	74.25	6.22
November 2009	52.15	77.78	4.02
December 2009	51.39	75.32	-1.49
January 2010	54.23	77.37	5.24
February 2010	54.54	74.65	0.57
March 2010	58.68	79.54	7.06
April 2010	64.28	86.04	8.71
May 2010	61.74	77.63	-4.12
June 2010	62.02	75.68	0.45

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

CO_2 emissions forward prices in €/t

Source: EEX

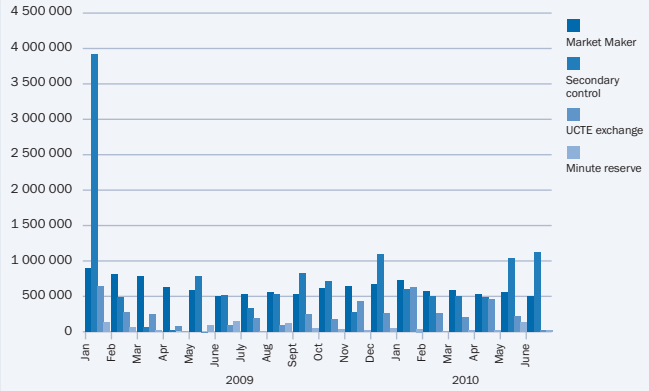
CO_2 emissions forward prices in €/t			
2007	21.09	September 2009	15.10
2008	24.69	October 2009	15.03
January 2009	14.08	November 2009	14.32
February 2009	10.50	December 2009	14.33
March 2009	12.85	January 2010	13.68
April 2009	14.63	February 2010	13.50
May 2009	16.27	March 2010	13.48
June 2009	14.61	April 2010	14.84
July 2009	15.13	May 2010	15.81
August 2009	15.81	June 2010	15.83

Source: EEX

Pellet price index							
	2000	2005	2006	2007	2008	2009	2010
Index 2000 = 100	100.0	80.3	104.9	94.6	84.3	92.4	91.0
Year-on-year change in %	–	–	23.5	–10.9	–12.2	8.7	–1.5

Source: proPellets Austria

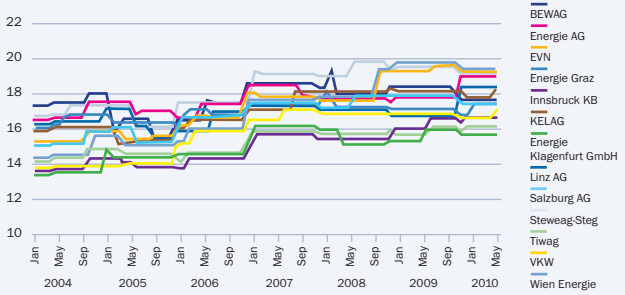
Balancing energy cost for electricity in the Eastern control area in €



Source: Austrian Power Clearing and Settlement (APCS)

Retail

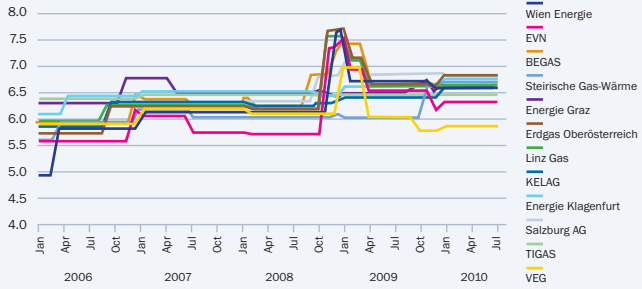
Development of electricity retail prices in cent/kWh (3 500 kWh, all discounts included)



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
Jan 2006	4.57	5.24	5.06	–	–	–
Jul 2006	4.83	6.18	5.43	–	–	–
Jan 2007	4.98	7.28	6.36	–	–	–
Jul 2007	6.06	7.28	6.62	–	–	–
Jan 2008	5.95	7.22	6.64	3.73	9.77	6.51
Jul 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
Jul 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
Jul 2010	6.42	9.09	7.60	–	–	–

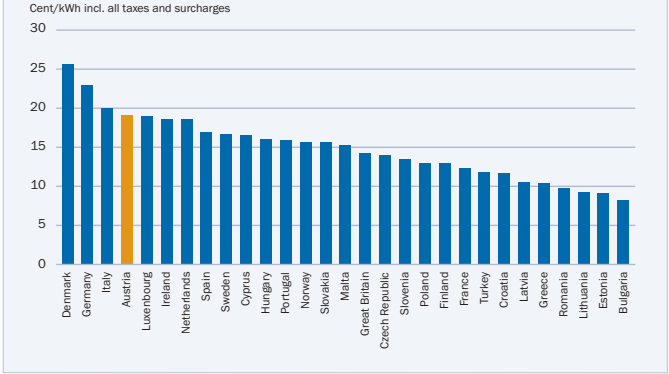
Development of gas retail prices in cent/kWh (15 000 kWh)



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

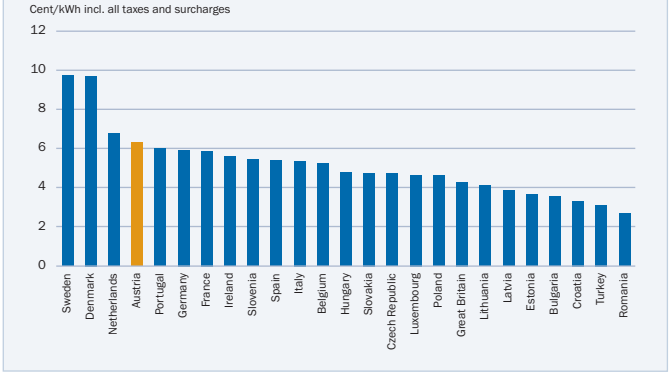
	Incumbent energy prices with general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2006	1.98	3.05	2.31	–	–	–
Jul 2006	2.26	3.05	2.60	–	–	–
Jan 2007	2.65	3.40	2.93	–	–	–
Jul 2007	2.55	3.40	2.85	–	–	–
Jan 2008	2.55	3.40	2.86	–	–	–
Jul 2008	2.66	3.40	2.85	2.33	3.95	3.10
Jan 2009	2.66	3.36	3.07	2.34	4.18	3.40
Jul 2009	2.51	3.36	3.06	2.35	4.31	3.40
Jan 2010	2.51	3.29	2.96	2.17	3.95	3.30
Jul 2010	2.66	3.22	2.95	–	–	–

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



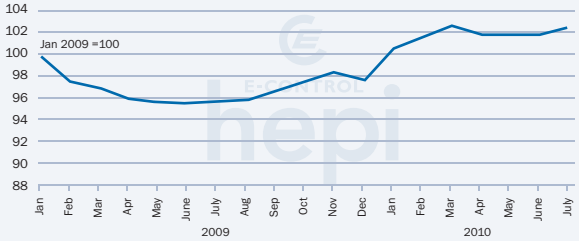
Source: Eurostat

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

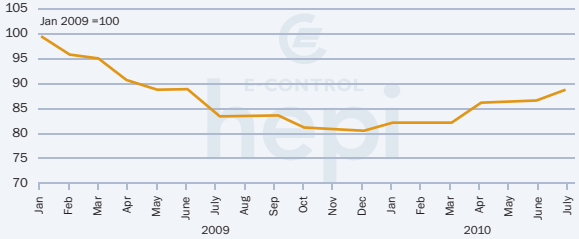


Source: Eurostat

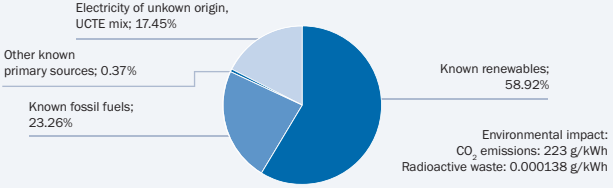
Household Energy Price Index for Europe (HEPI) - electricity in 2009/2010



Household Energy Price Index for Europe (HEPI) - gas in 2009/2010



Electricity labelling in Austria in 2008



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.

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 electricitiy 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 inlcudes 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 Austrias borders, and all storage movements, regardless of whether the gas is destined for domestic or foreign consumption.

Natural gas conditions

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

temperature: 0 °C

humidity: 0 percent

absolute pressure: 1 013.25 mbar

Latest valid calorific value (kWh/Nm^3): 11.14

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)	=	$0.27778 \cdot 10^{-3}$ Wh
1 Wh	=	1 watt hour	=	3.6×10^{3} joule		

Most common multiple and sub-multiple prefixes

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

Units used

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

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

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

Multilingual terms

Deutsch	English	Français
Laufkraftwerk	run-of-river power plant	centrale gravitaire
Speicherkraftwerk	storage power plant	station de pompage-turbinage
Wasserkraftwerk	hydropower plant	centrale hydroélectrique
Steinkohle	hard coal	houille
Braunkohle	lignite	lignite
Derivat	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)	energie utile (consommation)
Heizwert	net calorific value	pouvoir calorifique inférieur
Brennwert	gross calorific value	pouvoir calorifique supérieur

International conversion factors

Units of mass					
To:	kg	t	lt	st	lb
From:	Multiply by:				
kg Kilogramme	**1**	0.001	9.84×10^{-4}	1.102×10^{-3}	22 046
t Tonne	1 000	**1**	0.984	1.1023	2 204.6
lg Long ton	1 016	1.016	**1**	1.120	2 240
st Short ton	907.2	0.9072	0.893	**1**	2 000
lb Pound	0.454	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}	**1**

Source: IEA

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

Sources: Eurostat, IEA

Units of volume						
To:	US gal	UK gal	bbl	ft3	l	m^3
From:	Multiply by:					
US gal US gallon	**1**	0.8327	0.02381	0.1337	3.785	0.0038
UK gal UK gallon	1.201	**1**	0.02859	0.1605	4.546	0.0045
bbl Barrel	42.0	34.97	**1**	5.615	159	0.159
ft3 Cubic foot	7.48	6.229	0.1781	**1**	28.3	0.0283
l Litre	0.2642	0.22	0.0063	0.0353	**1**	0.001
m^3 Cubic metre	264.2	220	6.289	35.3147	1 000	**1**

Source: IEA

Calorific values in different energy balances

Statistics Austria, arithmetic means			
Energy source	**Gigajoule / ...**	**Gross domestic consumption**	**Final energy consumption**
Hard coal	t	28.69	30.53
Lignite	t	20.91	20.91
Coke oven coke	t	29.00	29.00
Crude oil	t	42.72	–
Petrol	t	43.29	43.16
Other kerosene	t	43.30	43.30
Diesel	t	42.80	42.80
Gas oil	t	42.80	42.80
Fuel oil	t	39.63	41.40
Lubricants	t	7.79	31.36
Natural gas	1 000 cu m	36.36	36.52
Solid and liquid waste	t	11.64	15.39
Fuelwood	t	14.31	14.31
Biofuels	t	10.46	11.05
Geothermal energy etc.	MWh	3.59	3.60
District heat	MWh	–	3.60
Hydropower	MWh	3.60	–
Wind and photovoltaics	MWh	3.60	–
Electric energy	MWh	3.60	3.60

Source: Statistics Austria

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

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

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

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

Notes

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