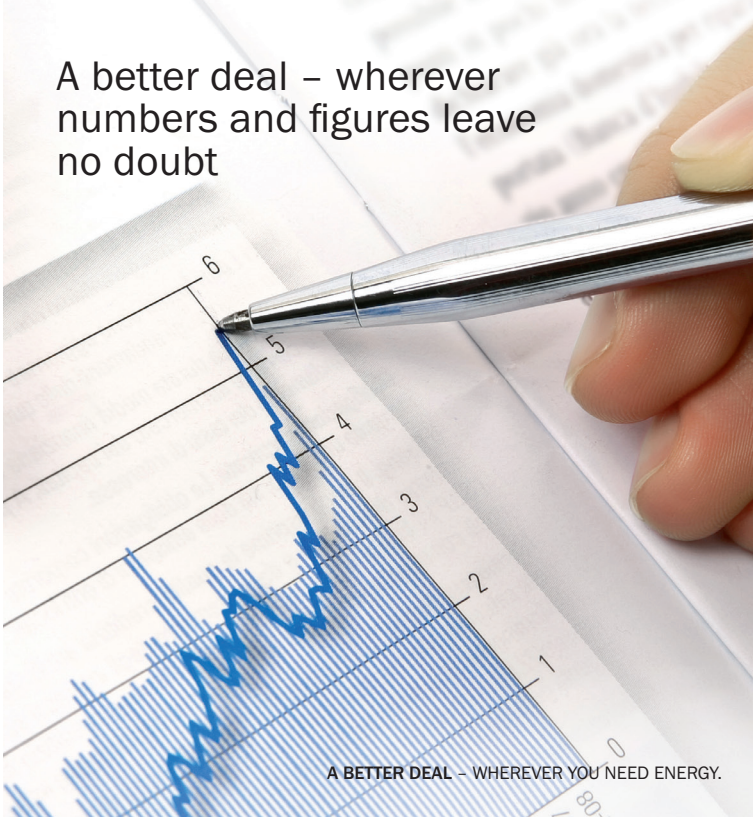
KEY STATISTICS 2009

E-CONTROL

A better deal – wherever numbers and figures leave no doubt



A BETTER DEAL – WHEREVER YOU NEED ENERGY.

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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.

In this brochure, E-Control presents 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.

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 Energie-Control GmbH

Overview

Economic indicators

Consumer price index (Jan 1990 = 100)						
	Total		Electricity		Natural gas	
	Annual average	Change	Annual average	Change	Annual average	Change
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	3.3%	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%

Source: Statistik Austria

Population (annual average)		
	Population numbers	Change
1990	7 677 850	
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%

Source: Statistik Austria

Gross domestic product (in constant year 2000 prices)		
	m € (rate of 2000)	Change
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%

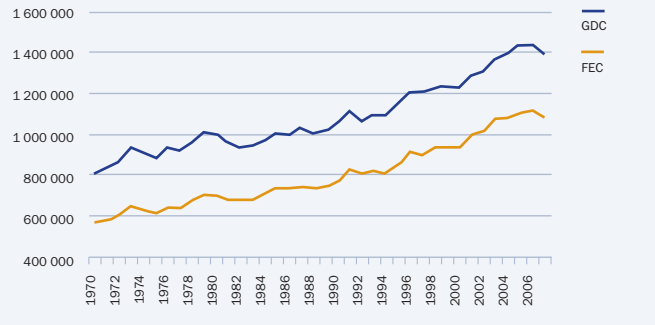
Source: Oesterreichische Nationalbank (OeNB)

Households in Austria (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

Source: Statistik Austria

Energy industry indicators

Gross domestic consumption and final energy consumption (TJ)



Source: Statistik Austria

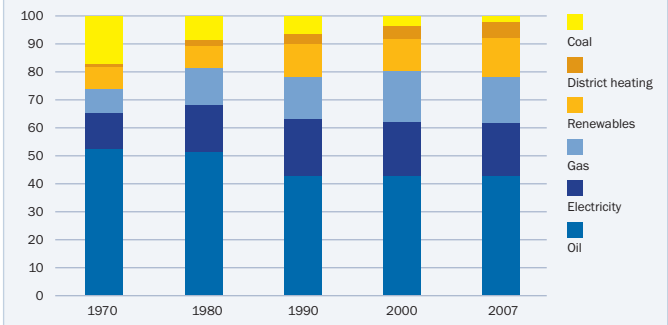
Gross domestic consumption and final energy consumption (TJ)

	1990	1995	2000	2001	2002
GDC	1 053 849	1 148 671	1 226 807	1 290 712	1 313 604
FEC	766 514	844 834	944 384	998 738	1 016 802
	2003	**2004**	**2005**	**2006**	**2007**
GDC	1 371 041	1 397 781	1 436 857	1 439 280	1 397 202
FEC	1 076 415	1 081 322	1 106 325	1 118 216	1 082 621

Source: Statistik Austria

ENERGY BALANCE

Energy mix in final energy consumption (%)



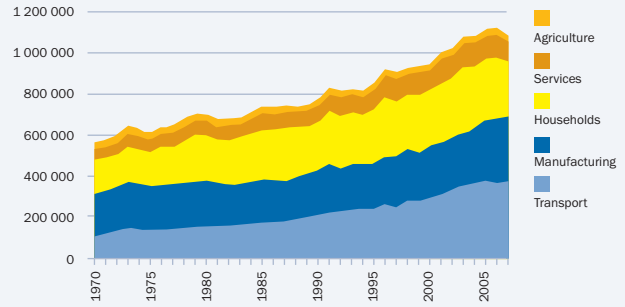
Source: Statistik Austria

Energy mix in final energy consumption (TJ)

	1970	1980	1990	2000	2007
Oil	295 334	360 085	327 578	399 002	456 067
Electricity	72 792	115 034	152 452	185 762	207 382
Gas	48 696	94 694	114 375	170 611	182 072
Renewables	46 377	54 224	93 135	109 244	152 931
District heating	4 933	13 847	25 636	43 045	58 277
Coal	99 101	63 549	53 338	36 719	25 893
Total	**567 233**	**701 433**	**766 514**	**944 384**	**1 082 621**

Source: Statistik Austria

Final energy consumption by sector (TJ)



Source: Statistik Austria

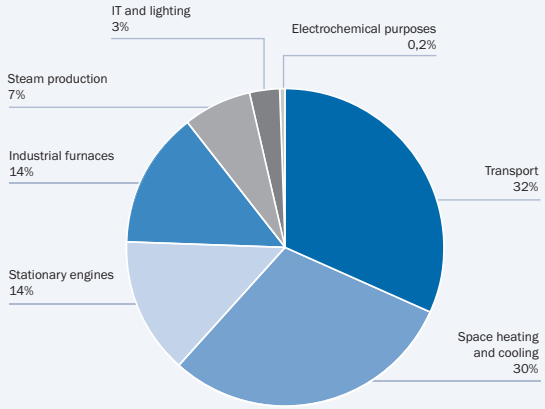
Final energy consumption by sector (TJ)

	Transport	Manufacturing	Households	Services	Agriculture	Total
1990	208 838	216 571	242 482	74 127	24 497	**766 514**
1995	244 689	218 416	262 860	96 369	22 499	**844 834**
2000	296 206	253 786	272 298	98 197	23 897	**944 384**
2001	312 070	249 989	291 943	119 408	25 329	**998 738**
2002	335 461	254 519	291 515	109 708	25 599	**1 016 802**
2003	359 032	252 126	318 062	119 849	27 345	**1 076 415**
2004	371 725	261 657	301 255	119 458	27 226	**1 081 322**
2005	384 980	283 142	302 464	109 158	26 581	**1 106 325**
2006	372 443	309 803	291 326	118 462	26 183	**1 118 216**
2007	378 690	314 121	262 643	101 621	25 547	**1 082 621**

Source: Statistik Austria

USEFUL ENERGY

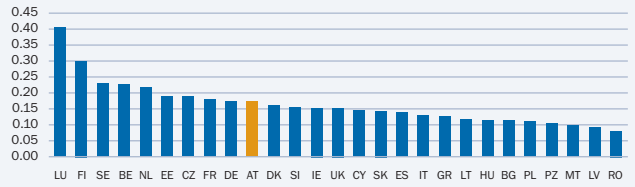
Useful energy categories in total final energy consumption (%)



Source: Statistik Austria

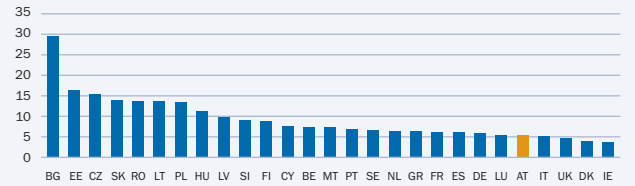
INTERNATIONAL ENERGY INDICATORS

Per capita energy consumption in EU countries (2006, TJ/inhabitant)



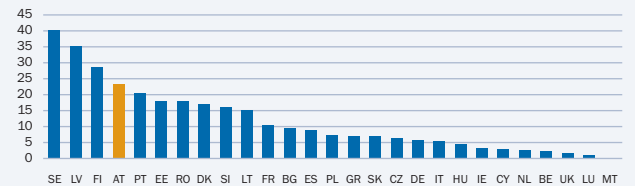
Source: EUROSTAT

Gross domestic consumption of energy divided by GDP (2006, TJ/m €)



Source: EUROSTAT

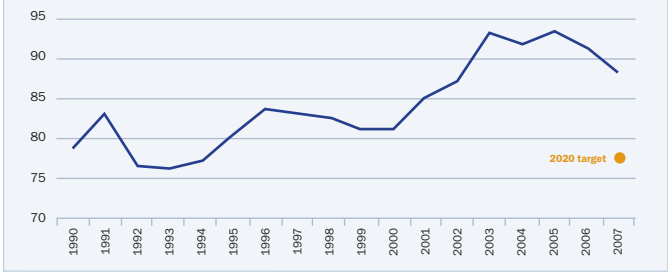
Renewables shares in EU MS according to the Renewables Directive (as of 2005, %)



Soruce: Official Journal of the European Union, 2009

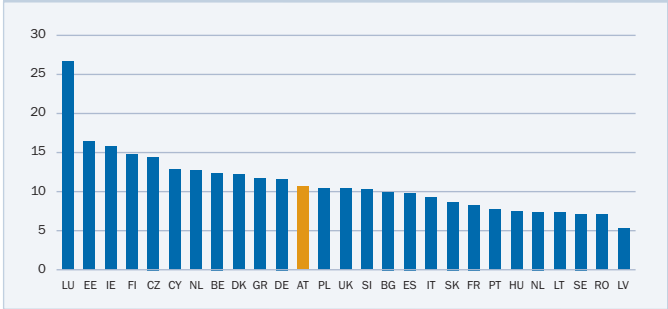
GREENHOUSE GAS EMISSIONS

Emissions in Austria and the 2020 target (1990 - 2007, m t CO_2 equivalents)



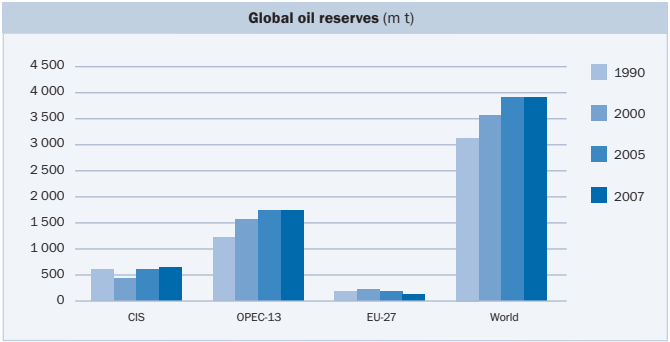
Source: Environment Agency Austria

Per capita emissions in EU countries (2007, t CO_2 equivalents)

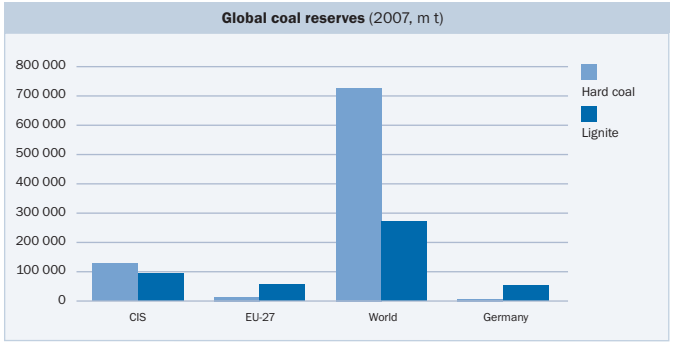


Source: EUROSTAT

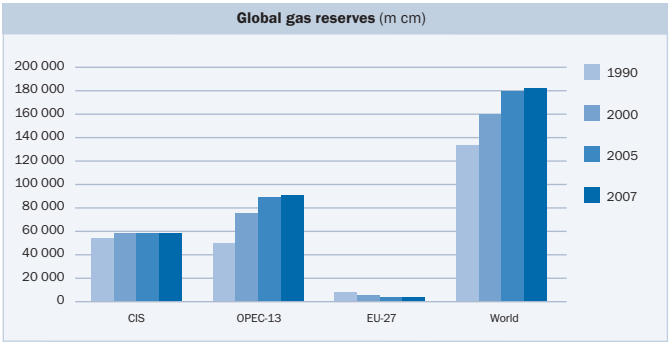
Energy reserves



Source: German Federal Institute for Geosciences and Natural Resources, Energy reserves (2009)



Source: German Federal Institute for Geosciences and Natural Resources, Energy reserves (2009)

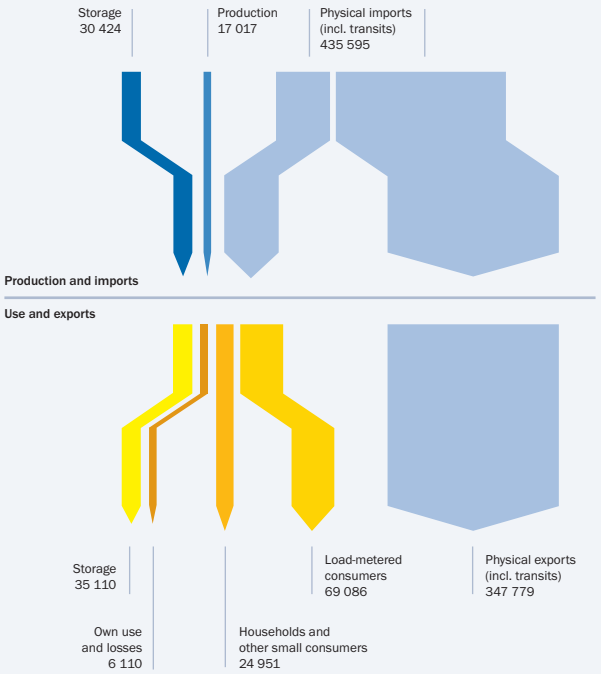


Source: German Federal Institute for Geosciences and Natural Resources, Energy reserves (2009)

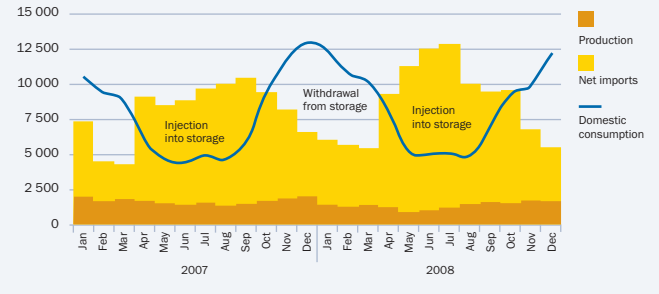
Operational statistics

Natural gas in Austria

Energy flow chart (2008, GWh)



Austrian natural gas balance (GWh)

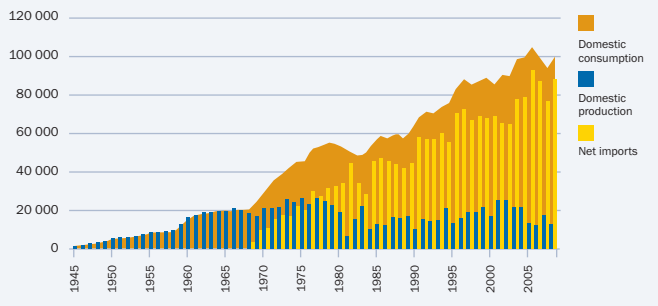


Austrian natural gas balance (2008)

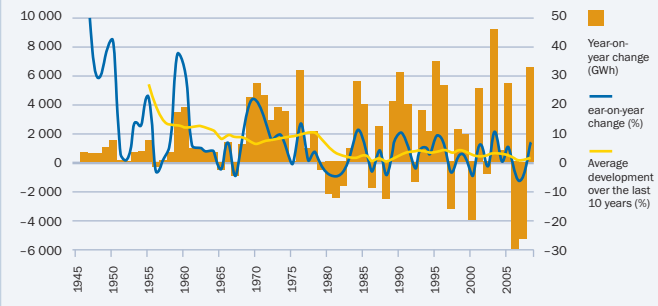
	GWh	m Nm³	year-on-year change
Imports (a)	435 595	39 207	5.6%
Production (a)	17 017	1 532	–17.1%
Withdrawal from storage (a)	30 424	2 738	15.1%
Production and imports = use and exports	**483 036**	**43 478**	**5.1%**
Exports (a)	347 779	31 303	3.5%
Injection into storage (a)	35 110	3 160	17.8%
Domestic consumption	100 148	9 014	6.9%
Own use and losses (b)	2 273	205	-7.5%
Own use and losses (c)	3 154	284	26.6%
Statistical difference (d)	1 492	134	–
Supply to consumers (e)	93 228	8 391	5.7%

(a) Physical flow data (for imports, exports and transits)
(b) Production and storage operation
(c) Transports (including tansits)
(d) Statistical difference between calculated and metered supply to consumers
(e) Supply to consumers (households, industry, chemical industry, refineries, thermal power plants etc.)

Natural gas consumption and supply (GWh)



Natural gas consumption trends



Austrian natural gas balance (GWh)

Year	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	0	80 514
2005	92 440	12 606	105 047	5 002	-350	100 395
2006	87 132	11 848	98 980	5 084	-52	93 948
2007	76 559	17 160	93 720	4 948	567	88 205
2008	**87 816**	**12 332**	**100 148**	**5 427**	**1 492**	**93 228**

Sources: Federal Ministry of Economics and Labour (for data up to 2002), E-Control (for data from 2002 onwards)

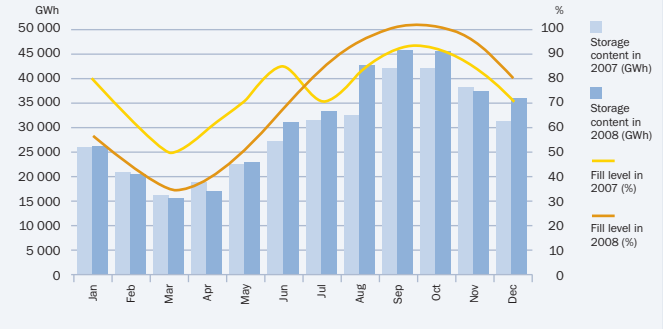
(a) Production and net storage movements
(b) Production, storage and grid operation
(c) Difference between calculated and metered supply to consumers (mainly included in own use and losses up to 2002)
(d) Supply to consumers (households, industry, chemical industry, refineries, thermal power plants etc.)

Austrian natural gas balance (2008)

	Physical flows (1)			
	Imports		Exports	
	GWh	m Nm³	GWh	m Nm³
Germany	33 649	3 029	39 602	3 565
Switzerland	–	–	779	70
Italy	–	–	259 375	23 346
Slovenia	–	–	20 220	1 820
Hungary	–	–	20 898	1 881
Slovakia	401 705	36 157	6 904	621
Czech Republic	241	22	–	–
Total	**435 595**	**39 207**	**347 779**	**31 303**

(1) Physical flows metered at Austrian borders, including transits

Natural gas storage at month end



Natural gas storage capacity*

	Storage volume* (GWh)		Maximum injection rate* (MWh/h)		Maximum withdrawal rate* (MWh/h)	
Year	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

* Includes all storage facilities on Austrian federal territory; excludes facilities in neighbouring countries

Domestic gas production (2007)

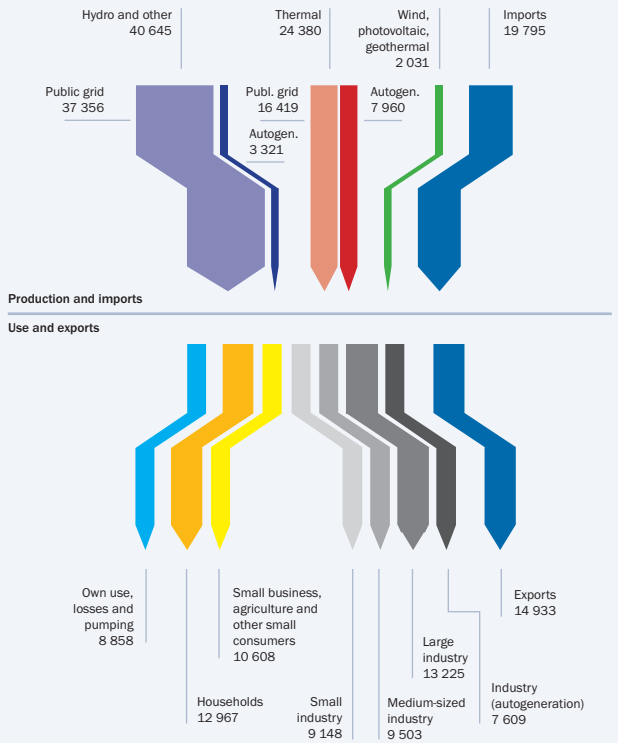
	Nm^3/h	MWh/h
Maximum production rate	**58 843**	**653 746**

Gas network length at year end (km)

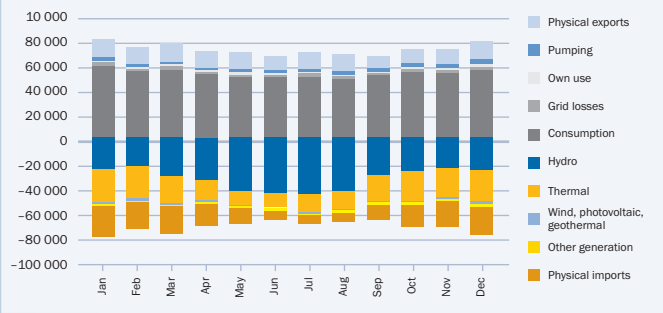
Year	Transmission lines	Transmission lines at grid level 2	Local grid and distribution lines at grid level 3
1990	1 887	2 582	n/a
1995	2 060	3 032	n/a
2000	2 377	3 266	n/a
2005	2 757	3 425	29 925
2006	2 757	3 466	30 784
2007	2 876	3 523	31 074
2008	2 876	3 556	31 861

Electricity in Austria

Energy flow chart (2008, GWh)



Total electricity balance (2008, GWh)

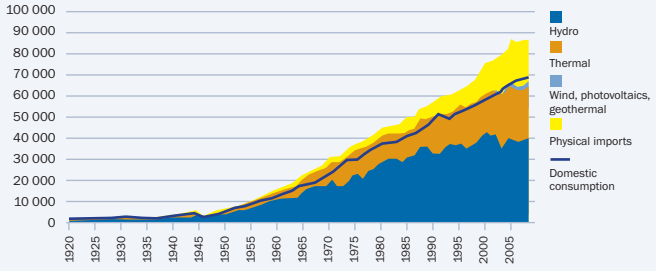


Total electricity balance (2008, GWh)

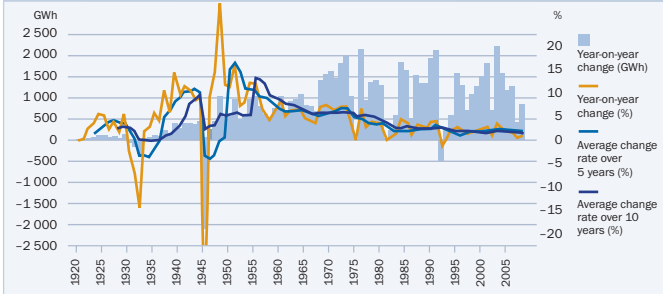
		2008	2007	Year-on-year change (GWh, %)	
Supply to consumers (1)		62 969	62 169	799	1.3%
Grid losses		3 686	3 700	–14	–0.4%
Own use		1 991	1 928	63	3.3%
Domestic consumption		68 646	67 798	848	1.3%
Pumping		3 273	2 986	287	9.6%
Physical exports		14 933	15 767	–833	–5.3%
Use and exports = production and imports		**86 852**	**86 551**	**301**	**0.3%**
Gross production	Hydro	40 677	39 164	1 514	3.9%
	Thermal	24 380	23 521	859	3.7%
	Renewables (2)	2 031	2 059	–28	–1.3%
	Other	–32	24	–	–
Physical imports		19 795	21 783	–1 988	–9.1%

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

Electricity consumption and supply (GWh)



Total domestic electricity consumption excl. pumping



Total electricity use (GWh)

	1990	1995	2000	2005	2006	2007	2008
Supply to consumers	43 995	47 722	53 751	60 465	61 827	62 169	62 969
Own use by power plants	1 563	1 556	1 566	2 051	2 016	1 928	1 991
Grid losses	2 971	3 328	3 195	3 567	3 531	3 700	3 686
Domestic consumption	48 529	52 606	58 512	66 083	67 373	67 798	68 646
Electricity for pumping	1 425	1 511	1 990	3 276	3 336	2 986	3 273
Physical exports	7 298	9 757	15 216	17 732	14 580	15 767	14 933
Use and exports	**57 252**	**63 874**	**75 718**	**87 091**	**85 289**	**86 551**	**86 852**

Gross total electricity generation and imports (GWh)

		1990	1995	2000	2005	2006	2007	2008
Gross generation	Run of river	23 424	27 008	31 048	26 972	26 574	27 027	28 223
	Pumped storage	9 068	11 469	12 413	12 602	11 465	12 137	12 454
	Total hydro	32 492	38 477	43 461	39 574	38 039	39 164	40 677
	Thermal	17 921	18 110	18 270	26 126	24 680	23 521	24 380
	Renewables (1)	–	–	67	1 347	1 766	2 059	2 031
	Other (2)	–	–	–	−312	−121	24	−32
Physical imports		6 839	7 287	13 920	20 355	20 925	21 783	19 795
Total		**57 252**	**63 874**	**75 718**	**87 091**	**85 289**	**86 551**	**86 852**

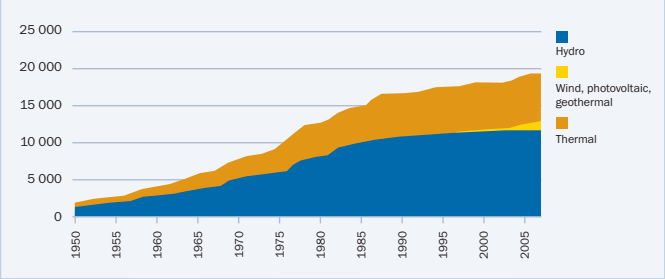
(1) Wind, photovoltaic and geothermal
(2) Electricity of unknown origin (from annual reporting) and statistical difference

Total generation mix (2008)

Energy source			GWh		Shares	
Hydropower	Run of river	>= 10 MW	23 823	35.5%	58.6%	
		< 10 MW	4 400	6.6%	10.8%	
	Pumped storage	>= 10 MW	12 039	18.0%	29.6%	
		< 10 MW	415	0.6%	1.0%	
	Total hydro		**40 677**	**60.7%**	**100.0%**	
Thermal	Fossil fuels and derivatives	Hard coal	5 524	8.2%		22.7%
		Lignite	0	0.0%		0.0%
		Derivatives (1)	1 374	2.0%		5.6%
		Oil derivatives (2)	1 244	1.9%		5.1%
		Natural gas	11 138	16.6%		45.7%
		Total	19 280	28.8%		79.1%
	Biofuels (3)	Solid	2 359	3.5%		9.7%
		Liquid	36	0.1%		0.1%
		Gaseous	950	1.4%		3.9%
		Sewage and landfill gas	19	0.0%		0.1%
		Total	3 365	5.0%		13.8%
	Other biofuels (4)		1 203	1.8%		4.9%
	Other fuels		533	0.8%		2.2%
	Total thermal		**24 380**	**36.4%**		**100.0%**
	(of which CHP)		(18 559)	(27.7%)		(76.1%)
Renewables	Wind (5)		2 011	3.0%	99.0%	
	Photovoltaics (5)		19	0.0%	0.9%	
	Geothermal (5)		2	0.0%	0.1%	
	Total renewables (5)		**2 031**	**3.0%**	**100.0%**	
Other energy sources (6)			–32	0.0%		
Total generation			**67 056**	**100.0%**		

(1) Coal products used for electricity generation
(2) Oil derivatives used for electricity generation
(3) Only biofuels as defined by Austrian law
(4) Biofuels as defined by community law, with exceptions (3)
(5) Injection by certified renewable power plants as defined by Austrian law
(6) Generation that can neither be broken down by primary energy source nor assigned to a type of power station

Generation capacity (MW)

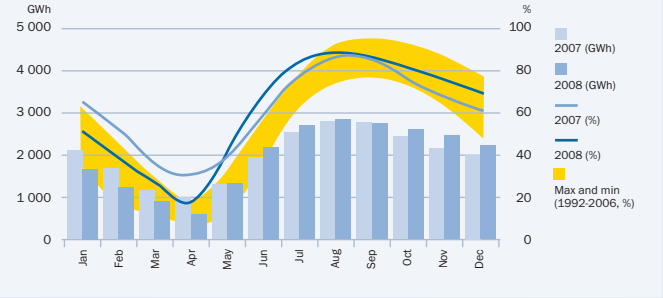


Maximum generation capacity at year end

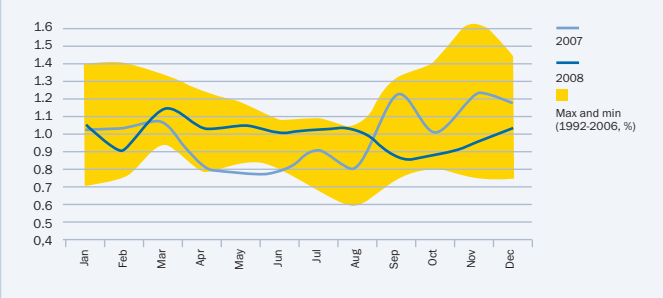
		1990	1995	2000	2005	2006	2007	2008
Gross maximum capacity (MW)	Run of river	–	–	5 256	5 318	5 350	5 368	5 373
	Pumped storage	–	–	6 407	6 519	6 517	6 652	7 008
	Hydro	10 947	11 306	11 664	11 837	11 867	12 020	12 381
	Renewables	–	–	49	849	985	1 010	1 014
	Thermal	5 740	6 134	6 315	6 527	6 592	6 379	7 348
	Total	16 687	17 440	24,435	25 732	25 961	26 061	27 751
Shares (%)	Hydro	65.6	64.8	47.7	46.0	45.7	46.1	44.6
	Renewables	–	–	0.2	3.3	3.8	3.9	3.7
	Thermal	34.4	35.2	25.8	25.4	25.4	24.5	26.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Net capacity (MW) *		16 233	16 959	17 532	18 703	18 930	18 907	20 179

* Estimated data

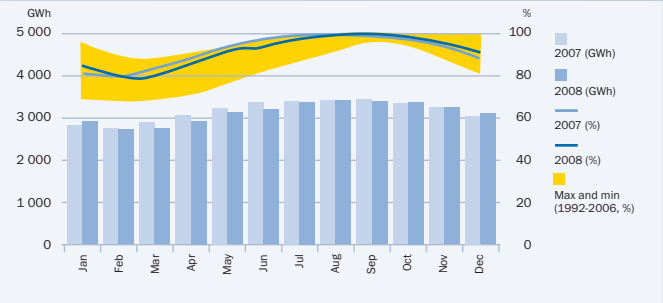
Reservoir capacity and fill levels



Energy capability factor of run-of-river power plants



Fuel stocks



Energy capability factor of run-of-river power plants (1)

2007	2008	1997-2006 max	1997-2006 min
0.96	1.00	1.16	0.87

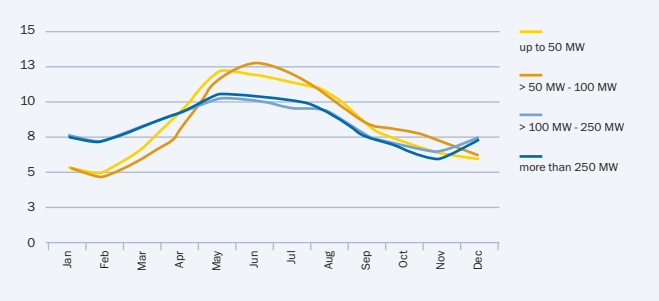
(1) Only including run-of-river power plants with a maximum capacity of at least 10 MW

Availability of power plants

Year	Average (non-)availability					
	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%
2002–2008 average	82.7%	38.2%	6.7%	91.2%	18.0%	2.3%

Only including generation units of public generators with a maximum capacity of at least 25 MW that inject into Austrian control areas

Control capacity distribution in the public grid (2008, %)



Firm capacity of hydropower plants* (2008)

Type of power plant	Up to 50 MW	50 MW - 100 MW	100 MW - 250 MW	more than 250 MW	Total
	MW				
Run-of-river plants with pondage	176	250	–	–	426
Run-of-river plants without pondage	148	83	444	310	985
Total	**324**	**333**	**444**	**310**	**1 411**
	Share in installed capacity (%)				
Run-of-river plants with pondage	46.0%	46.2%	–	–	46.1%
Run-of-river plants without pondage	34.1%	53.6%	38.5%	34.1%	37.2%
Total	**39.7%**	**47.8%**	**38.5%**	**34.1%**	**39.5%**

(*) Run-of-river hydropower plants with and without pondage, with a maximum capacity of more than 25 MW

Cogeneration

Year	Efficiency			Capacity		
	CHP		Conventional thermal	CHP		Conventional thermal
	Overall efficiency (1) %	Effective electric efficiency (2) %	Efficiency (3) %	Thermal capacity MW	Maximum capacity MW	Maximum capacity MW
2000	58.4	37.8	42.6	6 550	3 968	2 348
2005	54.4	35.2	42.7	7 356	4 471	2 056
2006	54.3	33.8	41.3	7 343	4 502	2 090
2007	54.5	33.6	39.3	7 599	4 341	2 038
2008	54.6	34.8	39.6	8 442	5 276	2 072

(1) Overall efficiency: electricity and heat output divided by fuel inputs
(2) Effective electric efficiency: electricity output divided by fuel input
(3) Efficiency (thermal power plants without cogeneration): electricity output divided by fuel input

Route length* at year end 2008

Voltage level	Overhead lines km	Overhead lines Share	Cables km	Cables Share	Total km
380 kV	1 262	0.5%	54	0.0%	**1 317**
220 kV	1 873	0.8%	3	0.0%	**1 876**
110 kV	6 066	2.6%	456	0.2%	**6 522**
1 kV - 110 kV	31 275	13.5%	33 044	14.3%	**64 320**
less than 1 kV	41 811	18.1%	115 258	49.9%	**157 069**
Total	**82 288**	**35.6%**	**148 816**	**64.4%**	**231 103**

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

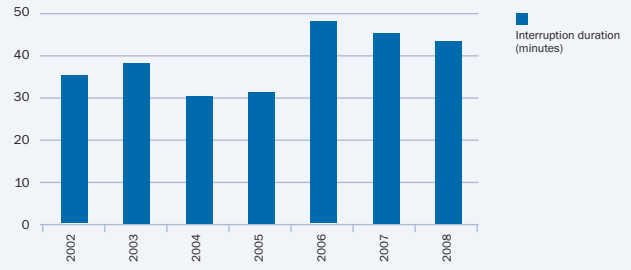
High voltage substations at year end 2008

Voltage level	Number of transformers	Power (MVA)
High voltage up to 100 kV	26	114
High voltage from 100 kV to 200 kV	1 001	39 958
High voltage over 200 kV	62	22 035
High voltage to high, medium and low voltage	1 089	62 107

Medium voltage substations at year end 2008

Voltage level	Number of transformers	Power (MVA)
Medium voltage to medium and low voltage	75 848	28 537

Quality of supply, unscheduled supply interruptions



Market statistics

Natural gas

Consumption structure

Supply to consumers					
Consumer category		**2007**	**2008**	**Average (*)**	**Share (*)**
Households	GWh	16 793	19 502	20 013	21.3%
Other small consumers	GWh	5 622	5 450	6 063	6.5%
Load-metered consumers	GWh	64 082	69 086	67 908	72.3%
Statistical difference	GWh	1 708	–809		
Total	**GWh**	**88 205**	**93 228**	**93 984**	**100.0%**

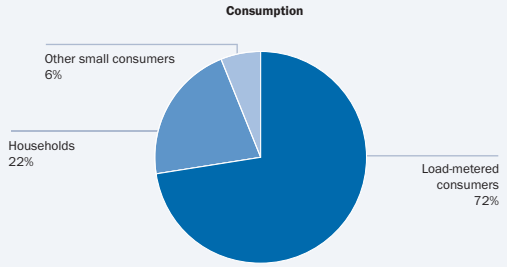
Number of metering points				
Consumer category		**2007**	**2008**	**Share (*)**
Households	1 000	1 278	1 282	94.9%
Other small consumers	1 000	68	68.12	4.9%
Load-metered consumers	1 000	3.25	3	0.2%
Total	**1 000**	**1 349**	**1 353**	**100.0%**

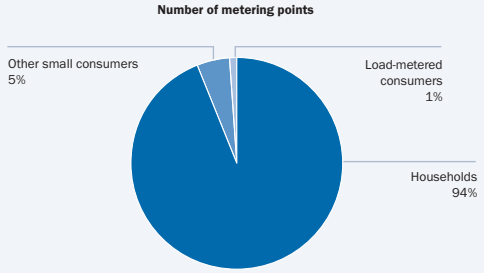
Average consumption per metering point				
Consumer category		**2007**	**2008**	**Average (*)**
Households	kWh/MP	13 140	15 216	15 743
Other small consumers	kWh/MP	82 651	79 997	92 242
Load-metered consumers	MWh/MP	19 741.9	19 270.9	22 568.3
Total	**kWh/MP**	**65 372**	**68 888**	**70 137**

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 metered consumption and individual reporting

(*) 2004-2008 average

Consumption structure





Consumption by grid zone

	Supply to consumers (GWh)			
Grid zone / federal province	2007	2008	Average (*)	Share (*)
Burgenland	1 994	1 933	2 074	2.2%
Carinthia	1 720	1 758	1 750	1.9%
Lower Austria	19 567	20 642	21 482	22.9%
Upper Austria	22 439	24 501	23 947	25.5%
Salzburg	3 451	3 553	3 694	3.9%
Styria	13 160	13 167	13 002	13.8%
Tyrol	3 099	3 190	3 053	3.2%
Vorarlberg	2 245	2 354	2 320	2.5%
Vienna	18 822	22 940	22 662	24.1%
Austria – Supply	86 497	94 037	93 984	100.0%
Austria – Statistical difference	1 708	-809		
Austria – Supply to consumers	88 205	93 228	93 984	100.0%

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

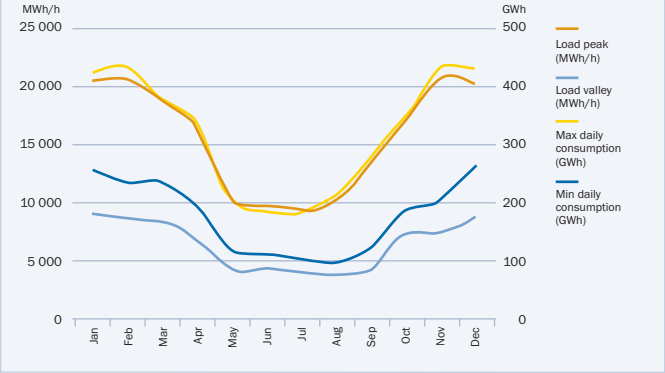
(*) 2004-2008 average

Metering points by grid zone

	Number of metering points (1,000)		
Grid zone / federal province	2007	2008	Share (*)
Burgenland	47.3	47.9	3.5%
Carinthia	14.0	14.2	1.0%
Lower Austria	285.5	287.9	20.9%
Upper Austria	148.4	151.0	10.9%
Salzburg	32.6	34.2	2.3%
Styria	63.9	65.0	4.7%
Tyrol	31.7	33.5	2.2%
Vorarlberg	32.3	31.1	2.4%
Vienna	693.6	688.5	52.1%
Total	1 349.3	1 353.3	100.0%

(*) 2004-2008 average

Load indicators



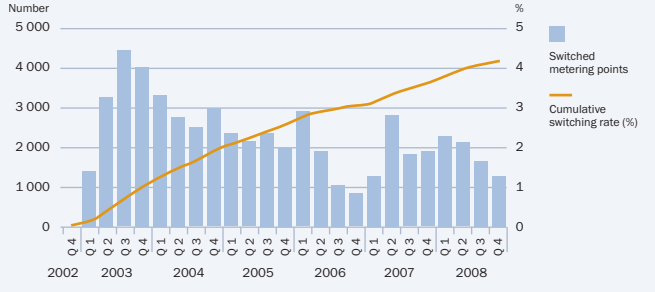
Load indicators

Year	Load peak	Load valley	Max. daily cons.	Min. daily cons.	Annual total	Utilisation period
	MWh/h	MWh/h	GWh	GWh	GWh	h
2002 (*)	22 708	–	485.0	–	28 012 *	1 234
2003	23 068	3 735	508.1	98.4	94 664	4 104
2004	23 073	3 510	491.5	90.2	95 016	4 118
2005	24 456	4 026	513.8	105.0	100 395	4 105
2006	24 835	3 756	548.6	99.0	93 948	3 783
2007	22 793	3 659	489.2	95.8	88 205	3 870
2008	20 834	3 874	434.3	97.9	93 228	4 475

(*) Only October through December

THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES

Number of supplier switches and switching rate*



Supplier switches by grid zone (*)

Grid zone / federal province	2004	2005	2006	2007	2008
Burgenland	32	50	66	144	171
Carinthia	76	37	15	89	65
Lower Austria	3 363	2 180	2 232	2 403	1 926
Upper Austria	1 535	1 273	963	1 041	1 475
Salzburg	85	78	73	84	44
Styria	42	158	197	521	641
Tyrol	–	–	–	–	–
Vorarlberg	–	–	–	–	45
Vienna	6 522	5 119	3 214	3 554	2 983
Total	**11 655**	**8 895**	**6 760**	**7 836**	**7 350**

Number of supplier switches and switching rate*

	Year				
Consumer category	2004	2005	2006	2007	2008
Households	10 850	8 058	5 996	6 744	6 194
Other small consumers	701	754	680	967	1,021
Load-metered consumers	104	83	84	125	135
Total	**11 655**	**8 895**	**6 760**	**7 836**	**7 350**
Households	0.9%	0.6%	0.5%	0.5%	0.5%
Other small consumers	1.1%	1.2%	1.1%	1.4%	1.5%
Load-metered consumers	4.1%	3.1%	2.9%	3.9%	3.8%
Total	**0.9%**	**0.7%**	**0.5%**	**0.6%**	**0.5%**

(*) By number of metering points

Switching rate by grid zone (*)

Grid zone / federal province	2004	2005	2006	2007	2008
Burgenland	0.1%	0.1%	0,1%	0.3%	0.4%
Carinthia	0.6%	0.3%	0.1%	0.6%	0.5%
Lower Austria	1.2%	0.8%	0.8%	0.8%	0.7%
Upper Austria	1.1%	0.9%	0.7%	0.7%	1.0%
Salzburg	0.3%	0.3%	0.2%	0.3%	0.1%
Styria	0.1%	0.3%	0.3%	0.8%	1.0%
Tyrol	–	–	–	–	–
Vorarlberg	–	–	–	–	0.1%
Vienna	0.9%	0.7%	0.5%	0.5%	0.4%
Total	**0.9%**	**0.7%**	**0.5%**	**0.6%**	**0.5%**

(*) By number of metering points

Electricity

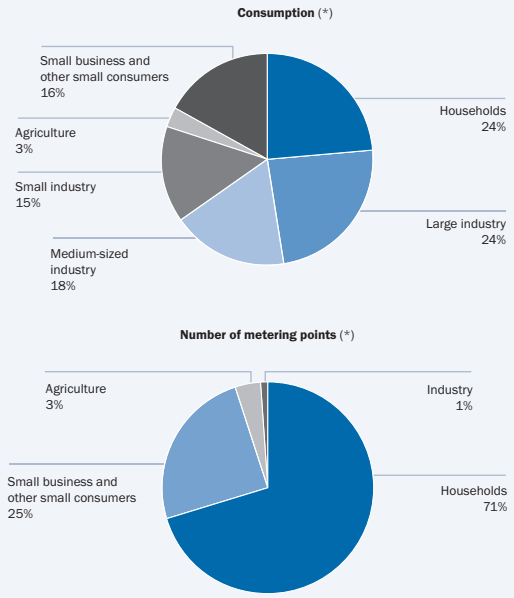
Consumption structure

Supply to consumers					
Consumer category		2007	2008	Average (*)	Share (*)
Households	GWh	12 746	12 967	12 783	23.8%
Small business and other small consumers	GWh	8 998	9 163	8 924	16.6%
Agriculture	GWh	1 449	1 445	1 448	2.7%
Small industry	GWh	8 946	9 148	7 891	14.7%
Medium-sized industry	GWh	9 346	9 503	9 695	18.0%
Large industry	GWh	13 183	13 225	13 008	24.2%
Statistical difference	GWh	–32	–92		
Total	**GWh**	**54 636**	**55 360**	**53 751**	**100.0%**

Number of metering points				
Consumer category		2007	2008	Share (*)
Households	1 000	4 063.5	4 093.7	70.9%
Small business and other small consumers	1 000	1 449.6	1 440.2	25.2%
Agriculture	1 000	196.7	195.6	3.4%
Small industry	1 000	28.8	30.2	0.5%
Medium-sized industry	1 000	1.8	1.9	0.0%
Large industry	1 000	0.2	0.2	0.0%
Total	**1 000**	**5 740.5**	**5 761.9**	**100.0%**

Average consumption per metering point				
Consumer category		2007	2008	Average (*)
Households	kWh/MP	3 137	3 168	3 177
Small business and other small consumers	kWh/MP	6 207	6 362	6 244
Agriculture	kWh/MP	7 369	7 388	7 409
Small industry	MWh/MP	310.9	302.8	290.6
Medium-sized industry	MWh/MP	5 340.7	5 014.9	4 247.8
Large industry	MWh/MP	66 581.0	60 115.2	65 832.1
Total	**kWh/MP**	**9 518**	**9 608**	**9 466**

Consumption structure



(*) 2004-2008 average

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

Consumption by grid zone

	Supply to consumers (GWh)			
Grid zone / federal province	2007	2008	Average (*)	Share (*)
Burgenland	1 496	1 550	1 483	2.8%
Carinthia	4 153	4 212	4 102	7.6%
Lower Austria	7 578	7 711	7 338	13.7%
Upper Austria	9 403	9 580	9 142	17.0%
Salzburg	3 463	3 508	3 406	6.3%
Styria	8 297	8 354	8 237	15.3%
Tyrol	5 552	5 568	5 499	10.2%
Vorarlberg	2 490	2 522	2 450	4.6%
Vienna	12 236	12 446	12 092	22.5%
Austria – Supply	54 669	55 452	53 751	100.0%
Austria – Statistical difference	–32	–92	–	–
Austria – Total	54 636	55 360	53 751	100.0%

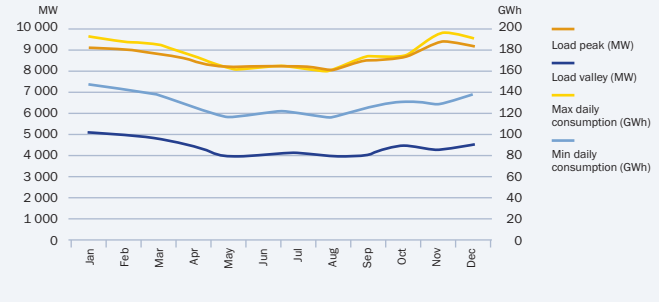
Statistical difference: difference between metered supply to consumers and individual reporting.
Negative values may result from discrepancies between the settlement period and calendar year.

Metering points by grid zone

	Number of metering points (1,000)		
Grid zone / federal province	2007	2008	Share (*)
Burgenland	191	193	3.3%
Carinthia	374	374	6.5%
Lower Austria	821	825	14.3%
Upper Austria	947	954	16.5%
Salzburg	404	407	7.0%
Styria	905	904	15.7%
Tyrol	449	447	7.7%
Vorarlberg	203	207	3.5%
Vienna	1 446	1 451	25.4%
Austria	5 741	5 762	100.0%

(*) 2004-2008 average

Public grid load indicators (2008)



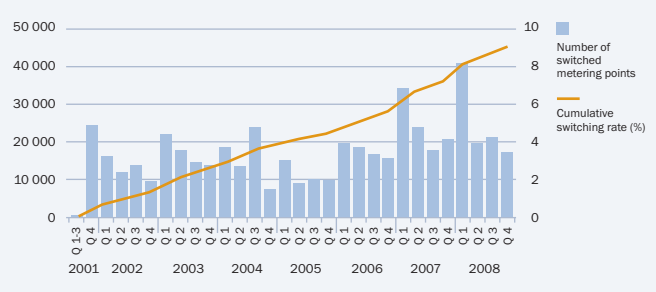
Public grid load indicators (as of September 2009)

Year	min. Pt Max	max. Pt Min	(Total) daily baseload supply	Annual baseload supply	Period	Period
	MW	MW	GWh	GWh	hours	days
2001	–	6 292	11 716.8	–	8 760	365
2002	4 913	6 189	39 813.1	29 489	8 760	365
2003	5 089	6 267	41 961.8	31 666	8 760	365
2004	5 006	6 438	42 652.3	30 772	8 784	366
2005	5 282	6 466	43 179.5	31 264	8 760	365
2006	5 664	6 801	44 628.3	33 539	8 760	365
2007	5 492	6 494	44 754.8	33 987	8 760	365
2008	5 588	6 406	45 223.0	35 016	8 784	366

MinPtMax: minimum daily peak
MaxPtMin: maximum daily valley
Total daily baseload supply: daily load valleys * 24h
Annual baseload supply: annual load valley * 24h * days

THE EFFECTS OF LIBERALISATION: ELECTRICITY SWITCHING RATES

Number of supplier switches and switching rate (*)



Supplier switches by grid zone (*)

Grid zone / federal province	2004	2005	2006	2007	2008
Burgenland	912	5 078	3 070	8 850	4 519
Carinthia	3 006	2 362	5 970	3 471	3 006
Lower Austria	11 158	6 322	13 252	18 381	14 767
Upper Austria	14 930	11 952	13 472	16 247	20 244
Salzburg	2 584	1 057	2 113	2 047	2 312
Styria	8 459	3 502	9 530	16 971	27 779
Tyrol	1 347	2 028	1 449	1 913	1 537
Vorarlberg	500	240	472	447	894
Vienna	19 539	12 125	24 854	28 690	23 835
Austria	**62 435**	**42 639**	**69 531**	**95 264**	**97 473**

Number of supplier switches and switching rate (*)

Consumer category	2004	2005	2006	2007	2008
Households	31 537	22 768	40 756	60 665	54 862
Other small consumers	28 017	17 883	26 314	32 111	39 724
Load-metered consumers	2 881	1 988	2 461	2 488	2 887
Total	**62 435**	**42 639**	**69 531**	**95 264**	**97 473**
Households	0.8%	0.6%	1.0%	1.5%	1.3%
Other small consumers	1.7%	1.1%	1.6%	2.0%	2.4%
Load-metered consumers	10.4%	7.0%	8.5%	8.1%	8.9%
Total	**1.1%**	**0.8%**	**1.2%**	**1.7%**	**1.7%**

(*) By number of metering points

Switching rate by grid zone (*)

Grid zone / federal province	2004	2005	2006	2007	2008
Burgenland	0.5%	0.2%	0.7%	0.9%	0.8%
Carinthia	0.8%	1.4%	0.8%	2.4%	1.2%
Lower Austria	1.4%	0.8%	1.6%	2.2%	1.8%
Upper Austria	1.6%	1.3%	1.4%	1.7%	2.1%
Salzburg	0.7%	0.3%	0.5%	0.5%	0.6%
Styria	1.0%	0.4%	1.1%	1.9%	3.1%
Tyrol	0.3%	0.5%	0.3%	0.4%	0.3%
Vorarlberg	0.3%	0.1%	0.2%	0.2%	0.4%
Vienna	1.4%	0.8%	1.7%	2.0%	1.6%
Austria	**1.1%**	**0.8%**	**1.2%**	**1.7%**	**1.7%**

(*) By number of metering points

Injection of green electricity and support volumes
(2007-2008)

Energy source	Injection (GWh)	Net support volumes (Mio €)	Share of supported green electricity in total supply	Average feed-in tariff paid (Cent/kWh)
2008			(1)	
Small hydro (supported)	945	53.1	1.7%	5.62
Other renewables	4 496	523.1	8.0%	11.64
Wind	1 988	154.8	3.6%	7.79
Solid biomass with high biog. share	1 900	258.5	3.4%	13.61
Gaseous biomass (*)	503	89.0	0.9%	17.71
Liquid biomass (*)	36	6.3	0.1%	17.71
Photovoltaic	17	10.4	0.0%	60.05
Sewage and landfill gas	50	3.8	0.1%	7.61
Geothermal	2	0.2	0.0%	11.15
Total small hydro and other renewables	**5 440**	**576.2**	**9.7%**	**10.59**
2007			(2)	
Small hydro (supported)	1 527	79.9	2.8%	5.24
Other renewables	4 230	457.6	7.7%	10.82
Wind	2 019	156.7	3.7%	7.76
Solid biomass with high biog. share	1 631	216.9	3.0%	13.30
Gaseous biomass (*)	440	60.7	0.8%	13.82
Liquid biomass (*)	71	9.8	0.1%	13.74
Photovoltaic	15	9.5	0.0%	62.39
Sewage and landfill gas	52	3.6	0.1%	7.06
Geothermal	2	0.2	0.0%	9.40
Total small hydro and other renewables	**5 757**	**538**	**10.5%**	**9.34**

(1) relating to supply to consumers from the public grid (2008: 55,946 GWh, forecast value)
(2) relating to supply to consumers from the public grid (2007: 54,688 GWh)
(*) Values for 2008 include the additional raw material payments of up to 4 cent/kWh according to the Green Electricity (Amendment) Act 2008
Source: OeMAG, preliminary values for February 2009

Wholesale Markets

Electricity Futures market (€/MWh)

Source: EEX

Electricity spot market (€/MWh)

Source: EXAA

Electricity Futures and Day-Ahead

	Peak		Base	
	Day-ahead average €/MWh	Y 2010 average €/MWh	Day-ahead average €/MWh	Y 2010 average €/MWh
2006	73.30	79.46	57.02	54.87
2007	56.16	79.52	42.78	54.92
January 2008	74.10	84.80	60.61	60.19
February 2008	74.00	85.65	63.13	61.12
March 2008	68.39	87.68	58.44	62.28
April 2008	88.91	90.66	73.49	64.25
May 2008	75.38	100.50	60.66	70.87
June 2008	103.00	111.21	81.00	77.61
July 2008	92.35	119.57	75.26	82.13
August 2008	79.48	112.81	66.56	79.08
September 2008	116.46	110.46	95.67	76.92
October 2008	118.35	103.26	94.09	71.14
November 2008	91.85	91.55	72.09	63.28
December 2008	73.42	85.19	58.33	57.98
January 2009	76.27	79.33	62.59	53.04
February 2009	60.76	68.85	51.48	47.16
March 2009	45.57	68.68	39.84	47.32
April 2009	41.68	74.58	35.72	51.86
May 2009	41.55	75.92	33.30	53.38
June 2009	42.33	74.00	35.13	51.82

Sources: EXAA, EEX

Gas and Coal Futures market

Sources: EEX, Energate

Natural Gas and Coal Futures

Y 2010					
	Gas average €/MWh	Coal average €/t		Gas average €/MWh	Coal average €/t
January 2008	24.19	69.07	October 2008	30.30	90.55
February 2008	25.21	77.08	November 2008	26.71	78.05
March 2008	26.31	77.78	December 2008	23.31	66.78
April 2008	28.59	79.09	January 2009	21.24	64.81
May 2008	33.68	94.68	February 2009	19.99	63.61
June 2008	37.98	114.25	March 2009	19.36	58.31
July 2008	39.42	120.83	April 2009	20.14	63.29
August 2008	36,44	120.42	May 2009	20.11	62.57
September 2008	35.33	110.97	June 2009	20.90	64.45

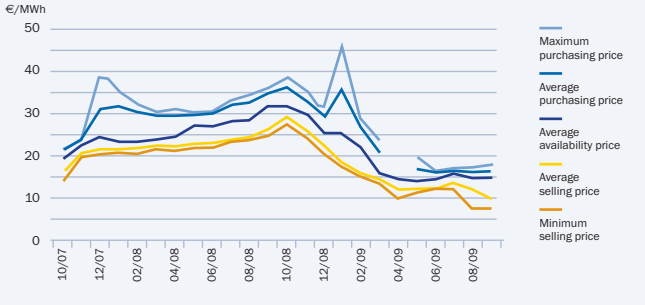
Sources: EEX, Energate

Natural Gas import prices

	2001 = 100	Year-on-year change (%)		2001= 100	Year-on-year change (%)
2001	100.00		2008	214.51	28.9%
2002	94.87	-5.4%	January 09	164.26	-30.6%
2003	98.49	3.7%	February 09	145.98	-12.5%
2004	96.77	-1.8%	March 09	134.22	-8.8%
2005	128.18	24.5%	April 09	118.14	-13.6%
2006	165.66	22.6%	May 09	114.80	-2.9%
2007	152.61	-8.5%	June 09	113.99	-0.7%

Source: Statistik Austria

Natural gas balancing energy prices



Source: Austrian Gas Clearing and Settlement (AGCS)

Brent oil price index (USD/barrel)

Source: Erdöl-Vereinigung (Union Pétrolière)

Brent oil price index (arithmetic average)

	€/ barrel	USD/ barrel	Change rate (% of € prices)
January 2008	62.63	92.15	–
February 2008	63.86	94.20	1.9%
March 2008	66.26	102.88	3.6%
April 2008	69.83	109.98	5.1%
May 2008	80.58	125.47	13.3%
June 2008	85.43	132.80	5.7%
July 2008	85.95	135.56	0.6%
August 2008	77.30	115.53	-11.2%
September 2008	70.63	101.51	-9.4%
October 2008	56.04	74.92	-26.0%
November 2008	42.46	55.57	-32.0%
December 2008	33.43	44.49	-27.0%
January 2009	34.69	45.80	3.6%
February 2009	34.39	43.97	-0.9%
March 2009	35.85	46.61	4.1%
April 2009	38.71	51.10	7.4%
May 2009	42.66	58.13	9.2%
June 2009	49.50	69.33	13.8%

Sources: Erdölvereinigung (Union Pétrolière), Oesterreichische Nationalbank (OeNB)

CO_2 emissions Futures market

Source: EEX

Futures CO_2 emissions Futures (Y 2010)

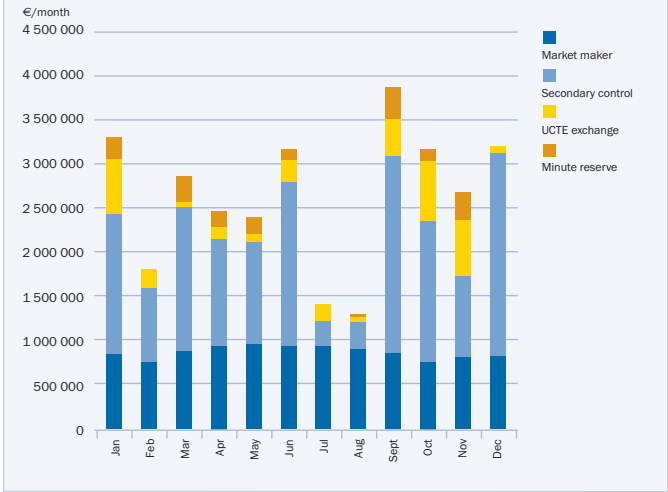
	Average €/t		Average €/t
2006	21.63	September 2008	25.85
2007	20.55	October 2008	22.36
January 2008	23.05	November 2008	18.22
February 2008	21.71	December 2008	16.23
March 2008	23.04	January 2009	13.53
April 2008	25.60	February 2009	10.00
May 2008	26.77	March 2009	12.11
June 2008	28.79	April 2009	13.96
July 2008	27.92	May 2009	15.59
August 2008	25.64	June 2009	13.98

Pellet price index

	2000	2005	2006	2007	2008	2009
2000 = 100	100.00	80.00	105.00	95.00	84.00	92.00
Year-on-year change (%)	–	–	23.8%	–10.5%	–13.1%	8.7%

Source: proPellets Austria

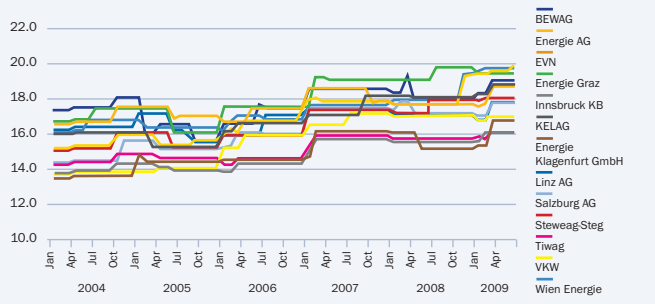
Balancing energy cost for electricity in the Eastern control area (2008)



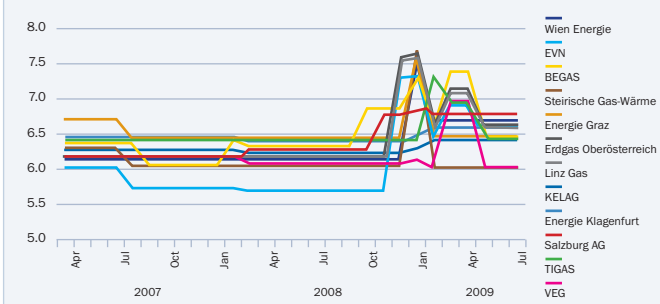
Source: Austrian Power Clearing and Settlement (APCS)

Retail

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



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



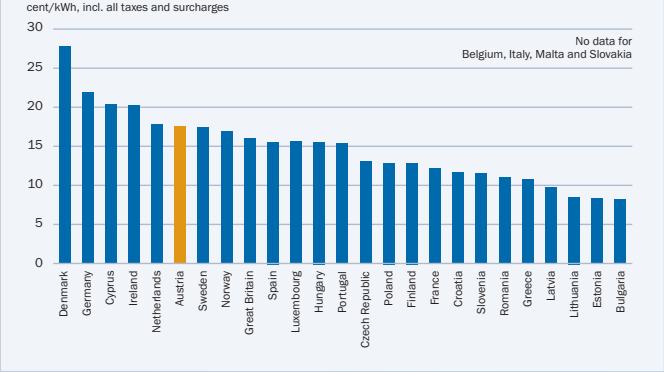
Development of electricity retail prices (3 500 kWh, cent/kWh)

	Incumbent energy prices excl. 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	7.3	3.93	10.80	7.17
Jul 2009	5.85	8.58	7.32	–	–	–

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

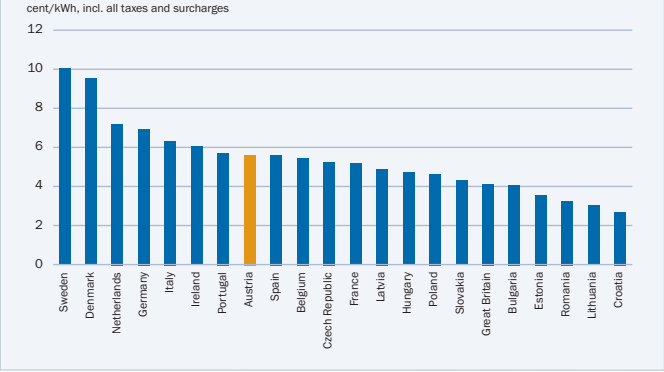
	Incumbent energy prices excl. general discounts, volume weighted			Energy prices of all suppliers, volume weighted		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Jan 2006	1.98	3.05	2.31	–	–	–
Jul 2006	2.26	3.05	2.60	–	–	–
Jan 2007	2.65	3.40	2.93	–	–	–
Jul 2007	2.55	3.40	2.85	–	–	–
Jan 2008	2.55	3.40	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	–	–	–

Household electricity prices in Europe (2 500 – 5 000 kWh, 2nd half of 2008)

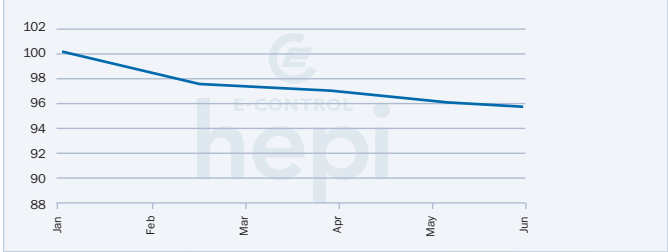


Source: Eurostat

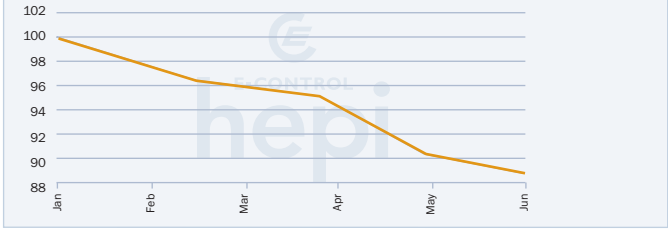
Household gas prices in Europe (23 260 kWh, 2nd half of 2008)



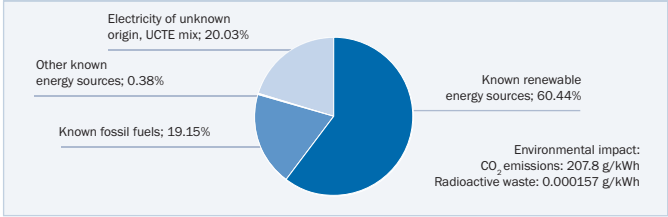
Household Energy Price Index for Europe, electricity price trends in 2009



Household Energy Price Index for Europe, gas price trends in 2009



Electricity labelling in Austria



Source: Eurostat

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 purposes 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 by them 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 Austria's borders, and all storage movements, regardless of whether the gas is destined for domestic or foreign consumption.

Natural gas conditions

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

- temperature: 0 °C
- humidity: 0 percent
- absolute pressure: 1 013.25 mbar

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

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, waste containing a high percentage of biogenous materials, landfill gas, sewage treatment plant gas, biogas, meat and bone meal, spent lye, 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 kWh (kilowatt hours), the heat of thermal energy in calories or joule. In the interest of comparability, solid, liquid or 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 (cf calorific values in different energy balances).

Units of measurement

1 V	=	1 volt				
1 A	=	1 ampere				
1 W	=	1 watt				
1 Hz	=	1 hertz	=	1 oscillation/sec		
1 J	=	1 joule	=	1 watt second (Ws)	=	$0.27778 \cdot 10^{-3}$ Wh
1 Wh	=	1 watt hour	=	$3.6 \cdot 10^{3}$ joule		

Most common multiple and sub-multiple prefixes

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

Units used

1 kV	=	1 kilovolt	=	1 000 Volt
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 terwatt 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	biofuel	biocombustibles
Wärmekraftwerk	thermal power plant	centrale thermique
Windkraftwerk	wind power plant	centrale eolienne
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	consommation des pompes
Haushalte	households	secteur résidentiel
sonstige Kleinkunden	other small consumers	autres clients profilés
lastganggemessene Kunden	load-metered consumers	clients mesurés (éligibles)
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: / From:	kg	t	lt	st	lb
	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: / From:	TJ	Gcal	Mtoe	MBtu	GWh
	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: / From:	US gal	UK gal	bbl	ft3	l	m^3
	Multiplikation mit:					
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 m^3	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: Statistik 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)				
Typical calorific values	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 m^3		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

Notes