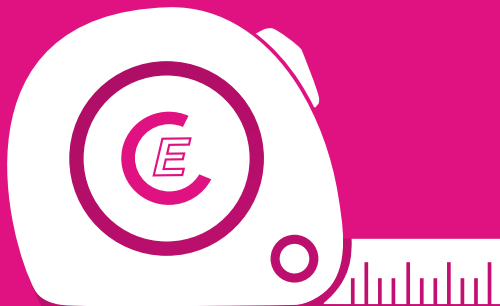


KEY STATISTICS 2020

# AUSTRIAN ENERGY MEASURED IN NUMBERS.



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# Preface

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

The statistics brochure at hand presents general information such as economic and energy data as well as quantity statistics in a clear and concise way. In addition, it also provides extensive information about market statistics, such as the effects of liberalisation on the Austrian electricity and gas markets, figures relating to the retail and wholesale industry, and much more.

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.



Andreas Eigenbauer  
Executive Director  
E-Control



Wolfgang Urbantschitsch  
Executive Director  
E-Control

## Austrian energy statistics

Energy supply is crucial for our daily lives and for our economy, and energy statistics carry particular importance as well; this is also reflected in the way powers and duties in this field are distributed. While Statistics Austria is involved, most statistical duties lie directly with the Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology. By virtue of section 92 Elektrizitätswirtschafts- und -organisationsgesetz (Electricity Act) 2010 and section 147 Gaswirtschaftsgesetz (Gas Act) 2011, the Minister entrusts the duties related to electricity and gas supply as well as statistics to the regulatory authority E-Control.

Though this construction deviates from the usual Austrian distribution of competences, the operational statistics produced by the regulatory authority E-Control are firmly integrated into the Austrian statistical system and represent the main primary statistical source for the electricity and gas part of the Austrian energy balance.

A major difference between statistics drawn up by Statistics Austria and those produced by E-Control consists in that the former must comply with the rules for energy balances and in particular for international comparability, while the latter depict commodity flows and the Austrian market.

This means different approaches to reflecting energy transformation and an exclusive focus of the energy balance on the energetic use of primary energy sources.

For instance, any use of electrical energy or gas is counted as (potential) consumption in E-Control's operational statistics, i.e. we consider that it forms part of the market. The energy balance e.g. counts gas used in power plants as part of transformation when looking at primary energy use but as part of the electricity/heat balance (depending what it is transformed into) when looking at final energy. When gas is used e.g. by the chemical industry, it appears as non-energetic use (not as energetic use in chemical processes).

The documentation accompanying the energy balance for 2015 for the first time contained a detailed referencing that enabled going back and forth between the two approaches.

### **The economic situation in 2019**

The Austrian economy expanded by 1.6% compared to the previous year. Statistics Austria detected a 1.5% rise in consumer prices, while, in terms of CPI, gas prices increased by 0.6% and electricity prices by 3.8%.

### **Consumption trends in 2019 (\*)**

Electricity and gas consumption moved in opposite directions in 2019. Gas use rose by 3.8% to reach 94.2 TWh or 8.3 billion (bn) normal cubic metres (n cu m), which presents an increase in consumption compared to the previous year. Electricity use in Austria fell by 0.4% or 0.3 TWh, and stood at 66.4 TWh, i.e. the upwards tendency of the last years was interrupted by this decrease.

It resulted in 2019 from a 0.4% reduction in electricity consumption by households, increases among small businesses (by 3.3%), and decreases among the medium-sized industry (by 0.3%), and large industry (by 5.9%). The latter two of these categories accounted for over 40% of the electricity consumption in 2019, channelled through only 1% of metering points.

Households used 16.8 TWh gas overall in 2019, non-households 77.3 TWh.

### **Energy inputs in 2019**

Domestic natural gas production declined further by 9% or close to 1 TWh. Withdrawals from storage stood at 36.4 TWh (down by 47.7%) and there were injections of 99 TWh (an increase of 3.1%). Net imports were at a record high of 121.4 TWh.

(\*) Please note that in contrast to Statistics Austria, E-Control's consumption data only relate to final customer's electricity consumption. As a result, the numbers may deviate from those of Statistics Austria, for example, from the ones used in E-Control's Green Electricity Report.

Domestic electricity production increased considerably by 8% to reach 73 TWh, including a 7.3% rise in electricity generated from hydropower. Production from thermal power plants grew by 5%. However, electricity generated from biofuels declined by 6.5%.

Net imports fell by 5.8 TWh and stood at 3.1 TWh. The physical imports declined by 2 TWh or 7.2% and exports increased by 2.2 TWh or 20%.

### Storage situation at year-end 2019

Austrian gas storage held 91 TWh at year-end 2019, making for a 97.2% fill level. This corresponds to 95.6% of domestic gas consumption in 2019.

Overall, gas storage facilities with a capacity of 93.7 TWh or 8.3 billion (bn) normal cubic metres (n cu m) TWh are located on Austrian territory. The hourly withdrawal capacity is 45 GWh or 4 billion n cu m.

Fill levels of Austrian electricity storage at year-end 2019 stood at 2.2 TWh (66.4%). With the installed capacity of 8.6 GW, electricity storage in Austria has an overall capacity of 3.3 TWh.

### Market structures and consumer behaviour in 2019

About 94% of the over 1.2 m customers on the Austrian gas market are households, but they only account for 18% of consumption. Non-households (including gas-fired power plants) make for more than 82% of the gas consumed.

A total of 81.200 gas consumers (metering points) switched suppliers in 2019, which results in a 6.2% switching rate. Most switchers (76,300) were households. The switching rate of 5.1% among non-household consumers is a little lower than that of households (6.3%). Overall, 2019 was the second most active switching year in Austria, with the highest rates noted in Upper Austria (9.1%), Carinthia (7.3%) and Lower Austria (7.1%).

On the electricity side, Austria has 6.2 m electricity metering points for 4.7 m customers. 81% of these metering points, and 87% of customers, are households, which means the non-household sector accounts for no more than 18% of metering points and 13% of customers. Looking at consumption, the picture is reversed: non-households account for about 76%, households are just shy of 25%.

Overall, more than 264,000 electricity metering points were switched to different suppliers in 2019, i.e. the overall switching rate was 4.2%. Large industrial customers were least active, with a switching rate of 0.8%, which is considerably lower than the Austrian mean value. Medium-sized industry (5.7%), other small customers (4.7%) and households (4.2%) were more involved.

In terms of regional differences, the highest switching rates were observed in Upper Austria (6.4%), Vienna (4.7%) and Lower Austria (4.5%).



# Overview

## Economic indicators

Consumer price index, Jan 2010 = 100						
	Total		Electricity		Natural gas	
	Annual average	Change in % (*)	Annual average	Change in % (*)	Annual average	Change in % (*)
1995	78.2		73.9		58.6	
2000	83.8	1.4	78.3	1.2	66.1	2.4
2005	92.7	2.0	83.0	1.2	82.8	4.6
2010	101.5	1.8	100.3	3.9	99.9	3.8
2015	112.3	2.0	106.5	1.2	112.9	2.5
2016	113.3	0.9	107.7	1.1	110.7	-1.9
2017	115.7	2.1	101.8	-5.4	109.0	-1.6
2018	118.0	2.0	102.7	0.9	103.3	-5.2
<b>2019</b>	<b>119.8</b>	<b>1.5</b>	<b>106.6</b>	<b>3.8</b>	<b>103.9</b>	<b>0.6</b>

(\*) average / from 2016 year-on-year rates of change

Source: Statistics Austria

Gross domestic product		
	m€ (rate of 2010)	Change in % (*)
1995	219 276	
2000	254 069	3.0
2005	277 307	1.8
2010	295 897	1.3
2015	311 856	1.1
2016	318 350	2.1
2017	326 234	2.5
2018	334 128	2.4
<b>2019</b>	<b>339 518</b>	<b>1.6</b>

(\*) average / from 2016 year-on-year rates of change

Source: Statistics Austria, calculations by E-Control

The economic context for the electricity and gas statistics

Population, annual average		
	Population numbers	Change in % (*)
1995	7 948 278	
2000	8 011 566	0.2
2005	8 225 278	0.5
2010	8 361 069	0.3
2015	8 629 519	0.6
2016	8 739 806	1.3
2017	8 795 073	0.6
2018	8 837 707	0.5
<b>2019</b>	<b>8 877 637</b>	<b>0.5</b>

(\*) average / from 2016 year-on-year rates of change

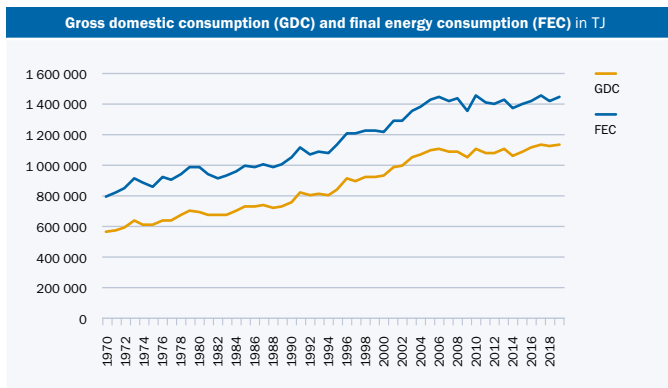
Source: Statistics Austria

Households				
	Single-person households	Multi-person households	Total	Average household size (persons)
1995	892 546	2 200 689	3 093 235	2.54
2000	976 630	2 260 453	3 237 083	2.45
2005	1 198 477	2 276 865	3 475 342	2.34
2010	1 300 166	2 323 587	3 623 753	2.28
2015	1 418 449	2 398 317	3 816 766	2.22
2016	1 429 495	2 435 324	3 864 819	2.22
2017	1 438 325	2 451 767	3 890 092	2.22
2018	1 456 593	2 459 500	3 916 093	2.22
<b>2019</b>	<b>1 480 122</b>	<b>2 469 741</b>	<b>3 949 863</b>	<b>2.21</b>

Source: Statistics Austria

Relevant Austrian population indicators

## Energy industry indicators



Source: Statistics Austria

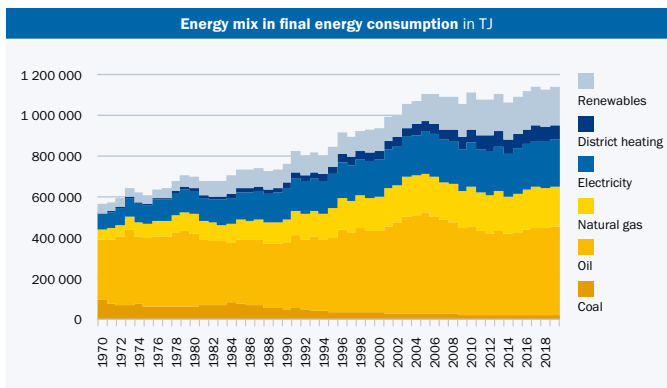
**Gross domestic consumption and final energy consumption in TJ**

	Gross domestic consumption	Final energy consumption
1995	1 140 024	845 681
2000	1 224 809	936 077
2005	1 438 069	1 104 152
2010	1 458 261	1 115 996
2015	1 410 837	1 095 641
2016	1 425 898	1 123 724
2017	1 457 371	1 141 033
2018	1 423 370	1 125 947
<b>2019 (*)</b>	<b>1 451 101</b>	<b>1 140 450</b>

(\*) provisional figures  
Source: Statistics Austria

Main economic and energy consumption indicators

## ENERGY BALANCE



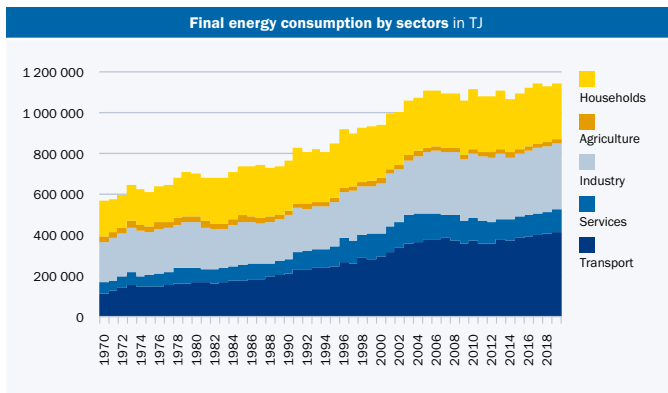
Source: Statistics Austria

Energy mix in final energy consumption in TJ							
	Coal	Oil	Natural gas	Electricity	District heating	Renewables	Total
1995	36 723	364 903	144 611	166 122	35 015	98 307	<b>845 681</b>
2000	32 838	401 577	167 475	182 948	41 689	109 550	<b>936 077</b>
2005	24 939	496 351	194 044	206 998	51 027	130 793	<b>1 104 152</b>
2010	19 800	434 045	198 368	215 403	66 424	181 956	<b>1 115 996</b>
2015	18 401	409 793	189 524	220 263	69 516	188 145	<b>1 095 641</b>
2016	19 643	421 127	196 780	223 339	72 517	190 319	<b>1 123 724</b>
2017	18 358	428 936	200 498	226 406	75 423	191 412	<b>1 141 033</b>
2018	17 795	429 999	197 535	227 068	70 730	182 820	<b>1 125 947</b>
<b>2019(*)</b>	<b>17 010</b>	<b>438 292</b>	<b>197 582</b>	<b>228 652</b>	<b>73 162</b>	<b>185 752</b>	<b>1 140 450</b>

(\*) provisional figures

Source: Statistics Austria

The input side of the Austrian energy balance



Source: Statistics Austria

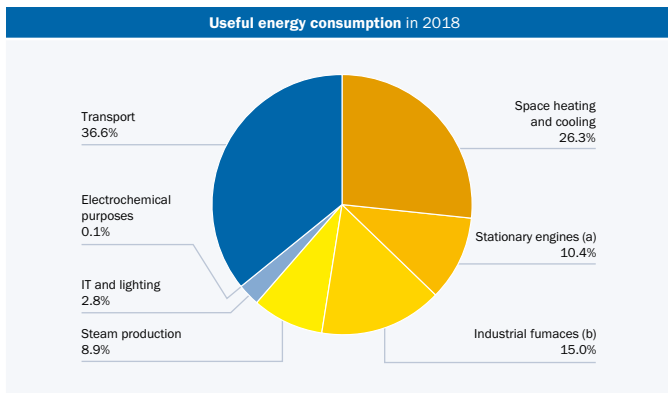
**Final energy consumption by sectors in TJ**

	Households	Agriculture	Industry	Services	Transport	Total
1995	263 055	22 674	219 498	95 948	244 506	<b>845 681</b>
2000	259 940	22 389	249 209	111 992	292 548	<b>936 077</b>
2005	277 332	22 240	300 649	123 797	380 134	<b>1 104 152</b>
2010	295 985	22 530	317 366	109 680	370 434	<b>1 115 996</b>
2015	277 540	22 944	307 826	103 783	383 548	<b>1 095 641</b>
2016	288 549	23 198	318 787	101 182	392 009	<b>1 123 724</b>
2017	291 227	23 438	320 205	109 823	396 340	<b>1 141 033</b>
2018	272 111	22 403	323 654	105 327	402 452	<b>1 125 947</b>
<b>2019(*)</b>	<b>272 951</b>	<b>22 280</b>	<b>323 098</b>	<b>110 965</b>	<b>411 156</b>	<b>1 140 450</b>

(\*) provisional figures  
Source: Statistics Austria

The output side of the Austrian energy balance

## USEFUL ENERGY



Source: Statistics Austria

Useful energy consumption in 2018		
	TJ	Share in %
Space heating and cooling	296 531	26.3
Stationary engines (a)	117 218	10.4
Industrial furnaces (b)	168 547	15.0
Steam production	99 720	8.9
IT and lighting	31 589	2.8
Electrochemical purposes	587	0.1
Transport	411 755	36.6
<b>Total</b>	<b>1 125 947</b>	<b>100.0</b>

(a) Cooling and freezing, and electrical appliances in the household sector

(b) Warm water and cooking in the household sector

Source: Statistics Austria

Uses of energy in Austria as reflected in the energy balance (this and next page)

**Natural gas – useful energy consumption in 2018**

	TJ	Share in %	Share in total in %
Space heating and cooling	77 533	39.3	6.9
Stationary engines (a)	2 442	1.2	0.2
Industrial furnaces (b)	55 511	28.1	4.9
Steam production	50 745	25.7	4.5
IT and lighting	4	0.0	0.0
Electrochemical purposes	0	0.0	0.0
Transport	11 301	5.7	1.0
<b>Total</b>	<b>197 535</b>	<b>100.0</b>	<b>17.5</b>

(a) Cooling and freezing, and electrical appliances in the household sector

(b) Warm water and cooking in the household sector

Source: Statistics Austria

**Electricity – useful energy consumption in 2018**

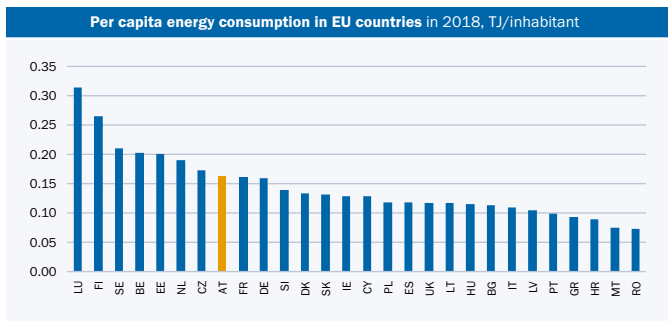
	TJ	Share in %	Share in total in %
Space heating and cooling	25 059	11.0	2.2
Stationary engines (a)	103 340	45.5	9.2
Industrial furnaces (b)	51 387	22.6	4.6
Steam production	3 326	1.5	0.3
IT and lighting	31 585	13.9	2.8
Electrochemical purposes	587	0.3	0.1
Transport	11 783	5.2	1.0
<b>Total</b>	<b>227 068</b>	<b>100.0</b>	<b>20.2</b>

(a) Cooling and freezing, and electrical appliances in the household sector

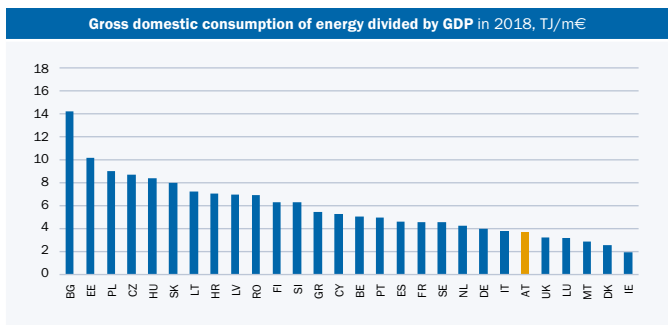
(b) Warm water and cooking in the household sector

Source: Statistics Austria

## INTERNATIONAL ENERGY INDICATORS



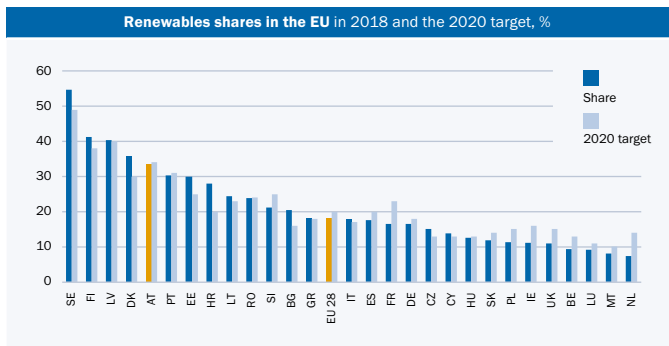
Source: Eurostat



Source: Eurostat

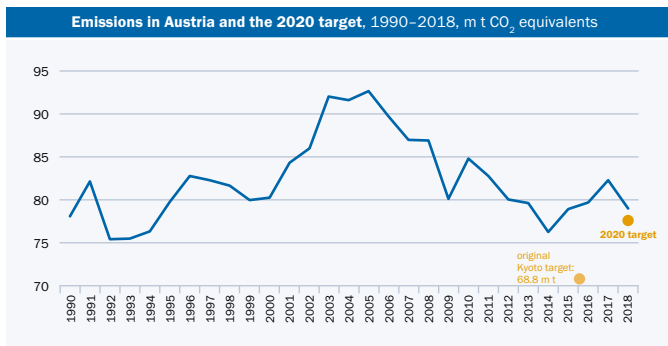
Austrian energy indicators in the international context



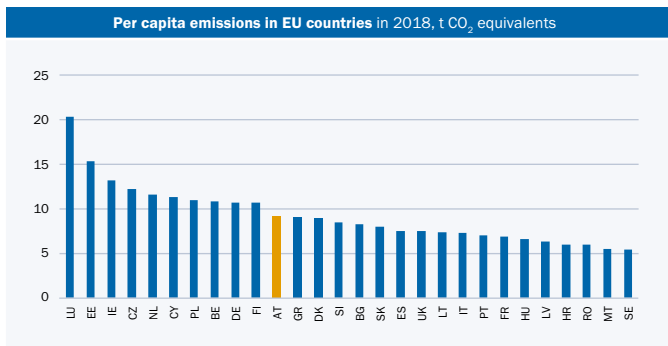


Source: Eurostat

## GREENHOUSE GAS EMISSIONS



Source: Environment Agency Austria

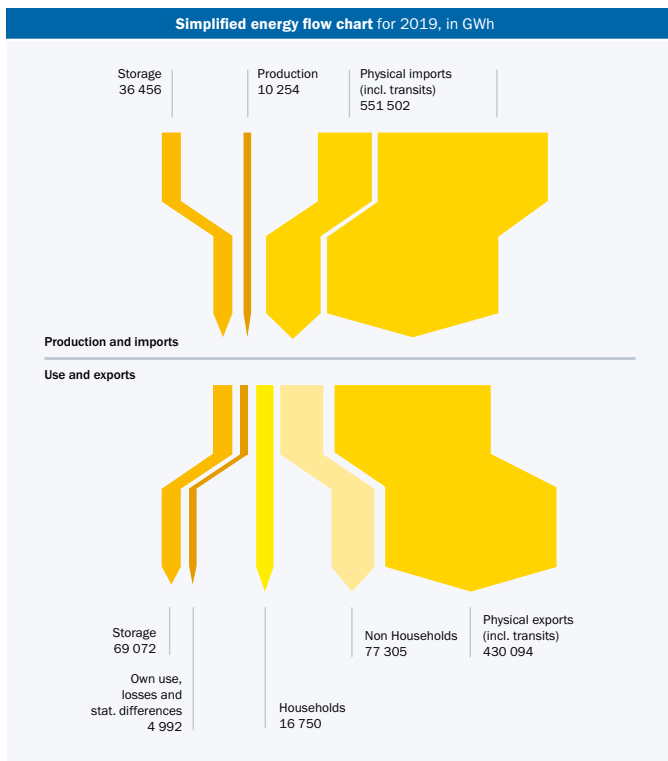


Source: Eurostat

Austrian emissions compared to emissions in other countries

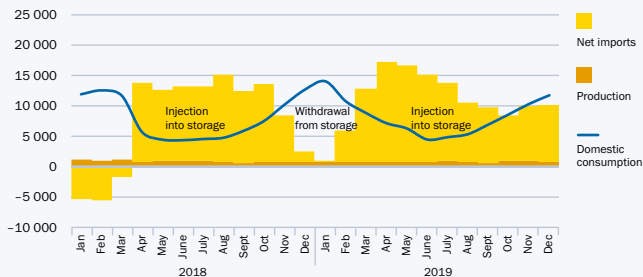
# Operational statistics

## Natural gas in Austria



Flow chart for natural gas in Austria

### Natural gas balance in GWh



### Natural gas balance for 2019

	m Nm <sup>3</sup>	GWh	Year-on-year change in %
<b>Supply to consumers (a)</b>	<b>8 337</b>	<b>94 210</b>	<b>3.8</b>
Own use and losses (b) and statistical differences (c)	428	4 837	—
<b>Domestic consumption</b>	<b>8 765</b>	<b>99 047</b>	<b>3.1</b>
Injection into storage (d)	6 113	69 072	-0.8
Exports (d)	38 061	430 094	-2.9
<b>Consumption and exports = production and imports</b>	<b>52 939</b>	<b>598 213</b>	<b>-1.7</b>
Imports (d)	48 805	551 502	4.5
Production (d)	894	10 102	-9.0
Injection of biogas (d)	13	152	-11.0
Withdrawal from storage (d)	3 226	36 456	-47.7

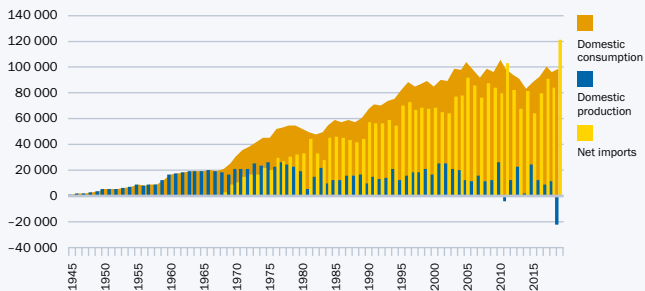
(a) Supply to consumers (here: households, industry, chemical industry, refineries, thermal power plants etc.)

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

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

(d) Physical flow data (imports and exports include transits)

### Natural gas consumption and supply in GWh



### Natural gas balance in GWh

	Supply to consumers (d)	Statistical difference (c)	Own use and losses (b)	Domestic consumption	Net imports	Domestic production (a)
1995	79 631	1	3 265	82 897	70 275	12 621
2000	80 514		4 612	85 126	68 635	16 491
2005	100 420	-401	4 065	104 083	92 019	12 065
2010	102 093	803	2 873	105 769	79 817	25 952
2015	84 585	-343	4 398	88 641	64 091	24 550
2016	87 966	-57	4 914	92 822	80 369	12 452
2017	95 163	-281	5 603	100 485	91 412	9 072
2018	90 720	278	5 046	96 044	84 632	11 413
<b>2019</b>	<b>94 210</b>	<b>-174</b>	<b>5 010</b>	<b>99 047</b>	<b>121 408</b>	<b>-22 361</b>

(a) Production and net storage movements

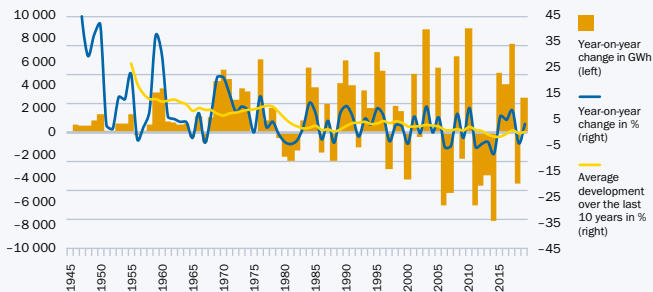
(b) For production, storage and transports (including transits)

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

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

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

### Natural gas consumption trends in GWh and %



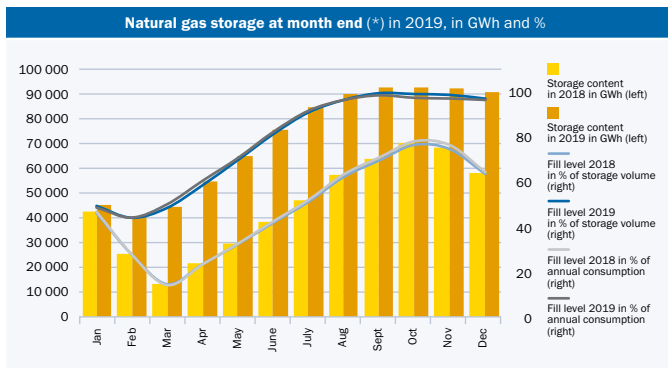
### Physical imports and exports of natural gas in 2019

	Imports (*)		Exports (*)	
	in m Nm <sup>3</sup>	in GWh	in m Nm <sup>3</sup>	in GWh
Germany	6 695	75 650	2 529	28 580
Switzerland	0	2	59	671
Italy			27 684	312 828
Slovenia			1 409	15 918
Hungary			4 310	48 708
Slovakia	42 110	475 841	2 070	23 388
Czech Republic	1	10		
<b>Total</b>	<b>48 805</b>	<b>551 502</b>	<b>38 061</b>	<b>430 094</b>

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

Main natural gas indicators for Austria (pages 19 – 21)

## Natural gas infrastructure in Austria



(\*) Includes all storage facilities on the Austrian territory.

Natural gas storage facilities (*)			
	Storage volume in GWh	Max. injection rate in MWh per hour	Max. withdrawal rate in MWh per hour
2005	32 202	13 254	14 887
2010	51 906	21 966	25 905
2015	92 685	36 272	44 817
2016	94 971	37 412	45 872
2017	91 774	36 166	44 260
2018	91 774	35 830	44 596
<b>2019</b>	<b>93 684</b>	<b>35 458</b>	<b>45 058</b>

(\*) Includes all storage facilities on the Austrian territory.

Domestic gas production		
	Max. production rate in MWh per hour	Max. production rate in 1,000 Nm <sup>3</sup> per hour
2010	2 319	207
2015	1 982	176
2016	1 611	142
2017	1 682	149
2018	1 743	154
<b>2019</b>	<b>1 391</b>	<b>123</b>

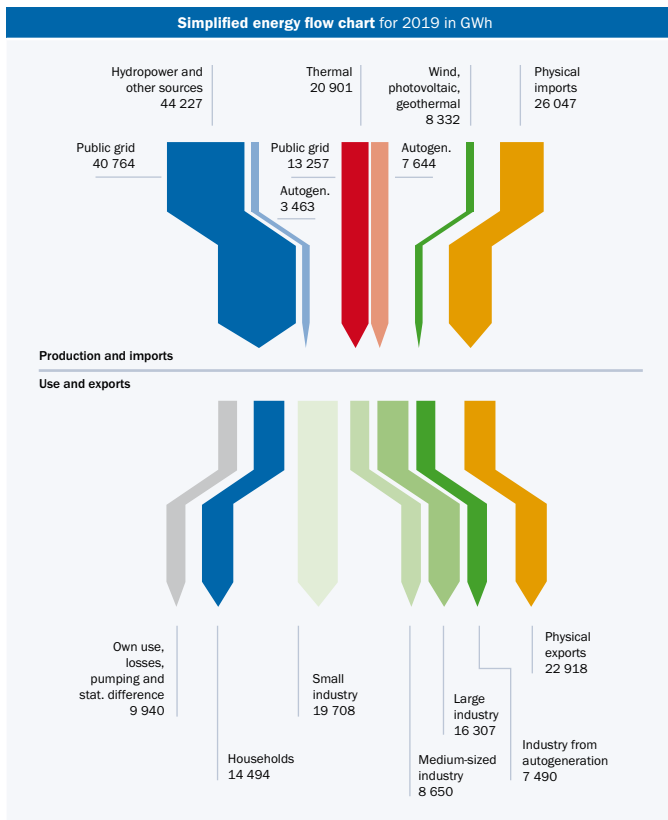
Network length at year end in km			
	Grid level 1, including transmission lines	Distribution lines at grid level 2	Local grids and distribution lines at grid level 3
2000 (*)	2 377	3 266	n.a.
2005	2 757	3 425	30 195
2010	3 143	3 685	33 027
2015	3 089	4 096	35 115
2016	3 092	4 111	35 625
2017	3 091	4 115	38 746
2018	3 091	4 100	38 998
<b>2019</b>	<b>3 486</b>	<b>3 801</b>	<b>39 229</b>

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

Key figures on natural gas infrastructure in Austria (pages 22 and 23)

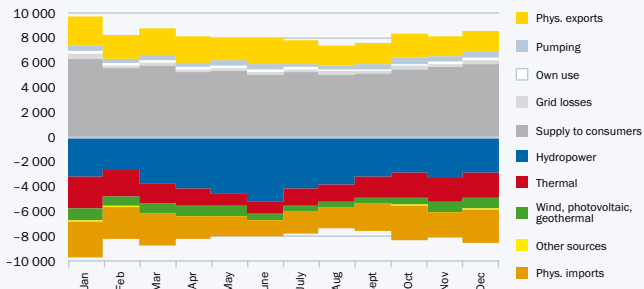


## Electricity in Austria (total electricity supply)



Electricity flow chart for Austria

### Electricity balance 2019, in GWh

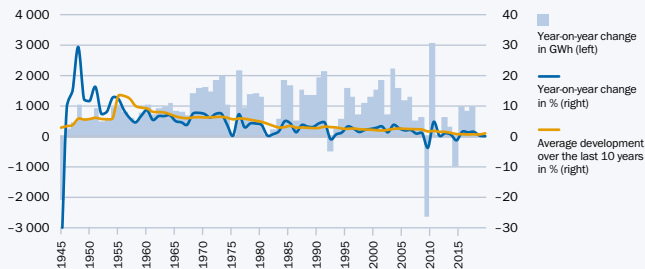


### Electricity balance 2019

	2018 in GWh	2019 in GWh	Year-on-year change in GWh	Year-on-year change in %	
Supply to consumers (1)	66 638	66 366	-272	-0.4	
Grid losses	3 147	3 305	158	5.0	
Own use	2 117	2 092	-25	-1.2	
<b>Domestic consumption</b>	<b>71 902</b>	<b>71 763</b>	<b>-139</b>	<b>-0.2</b>	
Pumping	5 025	4 826	-199	-4.0	
Physical exports	19 129	22 918	3 789	19.8	
<b>Use and exports = generation and imports</b>	<b>96 056</b>	<b>99 507</b>	<b>3 451</b>	<b>3.6</b>	
Gross generation	Hydro	41 184	44 187	3 003	7.3
	Thermal	19 899	20 901	1 003	5.0
	Renewables (2)	6 851	8 332	1 481	21.6
	Other sources	46	40		
Physical imports	28 076	26 047	-2 029	-7.2	

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

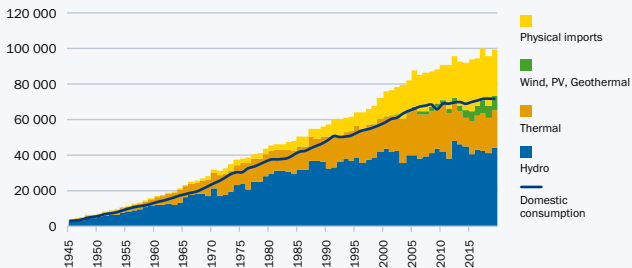
(2) Photovoltaics, wind and geothermal

**Electricity consumption trends in GWh and %****Electricity balance in GWh**

	Supply to consumers	Own use	Grid losses	Domestic consumption	Electricity for pumping	Physical exports	Use and exports = generation and imports
1995	47 722	1 556	3 328	<b>52 606</b>	1 511	9 757	<b>63 874</b>
2000	53 751	1 566	3 195	<b>58 512</b>	1 990	15 216	<b>75 718</b>
2005	60 465	2 051	3 567	<b>66 083</b>	3 276	17 732	<b>87 091</b>
2010	63 308	2 089	3 534	<b>68 931</b>	4 576	17 472	<b>90 979</b>
2015	64 494	1 980	3 443	<b>69 917</b>	4 907	19 328	<b>94 151</b>
2016	65 373	2 025	3 342	<b>70 740</b>	4 339	19 207	<b>94 286</b>
2017	66 231	2 143	3 337	<b>71 711</b>	5 545	22 817	<b>100 072</b>
2018	66 638	2 117	3 147	<b>71 902</b>	5 025	19 129	<b>96 056</b>
2019	66 366	2 092	3 305	<b>71 763</b>	4 826	22 918	<b>99 507</b>

Austrian electricity indicators (pages 25 – 28)

### 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		
1995	38 477	18 110			56 587	7 287	63 874
2000	43 461	18 270	67		61 798	13 920	75 718
2005	39 574	26 126	1 347	-312	66 735	20 355	87 091
2010	41 575	27 384	2 096	16	71 070	19 909	90 979
2015	40 465	18 833	5 421	43	64 762	29 389	94 151
2016	42 916	19 043	5 900	60	67 919	26 366	94 286
2017	42 088	21 272	7 337	14	70 710	29 362	100 072
2018	41 184	19 899	6 851	46	67 980	28 076	96 056
2019	44 187	20 901	8 332	40	73 460	26 047	99 507

Gross generation mix in 2019						
Energy source			GWh	Share in %		
Hydropower	Run of river	up to 10 MW	5 417	7.4	12.3	
		over 10 MW	24 534	33.4	55.5	
	Pumped storage	up to 10 MW	554	0.8	1.3	
		over 10 MW	13 682	18.6	31.0	
	<b>Total hydro</b>			<b>44 187</b>	<b>60.2</b>	<b>100.0</b>
Thermal	Fossil fuels and derivatives	Hard coal	1 482	2.0	7.1	
		Lignite			0.0	
		Coal derivatives (1)	1 938	2.6	9.3	
		Oil derivatives (1)	615	0.8	2.9	
		Natural gas	11 397	15.5	54.5	
		<b>Total</b>	<b>15 431</b>	<b>21.0</b>	<b>73.8</b>	
	Biofuels	Solid (2)	2 397	3.3	11.5	
		Liquid (2)	0	0.0	0.0	
		Gaseous (2)	573	0.8	2.7	
		Sewage and landfill gases (2)	32	0.0	0.2	
		<b>Total (2)</b>	<b>3 001</b>	<b>4.1</b>	<b>14.4</b>	
	Other biofuels (3)		1 434	2.0	6.9	
	Other fuels		1 035	1.4	5.0	
	<b>Total thermal (of which CHP)</b>			<b>20 901 (19 571)</b>	<b>28.5 (26.6)</b>	<b>100.0 (93.6)</b>
	Renewables	Wind (4)		7 420	10.1	89.1
Photovoltaics (4)		912	1.2	10.9		
Geothermal (4)		0	0.0	0.0		
<b>Total renewables (4)</b>		<b>8 332</b>	<b>11.3</b>	<b>100.0</b>		
Other sources (5)			40	0.1		
<b>Total</b>			<b>73 460</b>	<b>100.0</b>		

(1) Coal and oil derivatives used for electricity generation

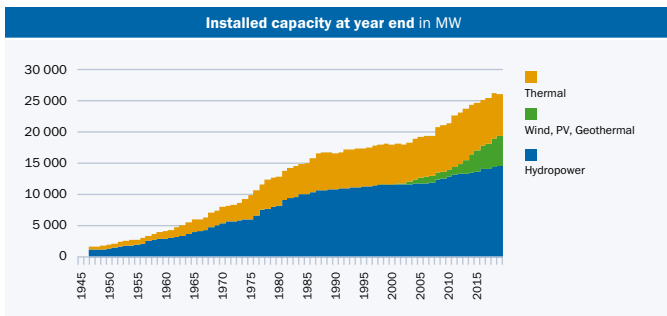
(2) Only biofuels as defined by Austrian law

(3) Biofuels as defined by Union law, except for (2)

(4) Injection by certified renewable power plants as defined by Austrian law

(5) Generation that can neither be broken down by primary energy source nor assigned to a type of power station

## Power plants in Austria

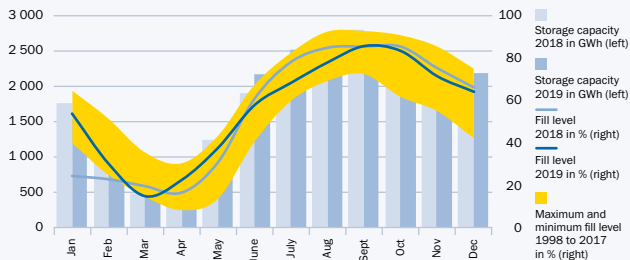


**Installed capacity at year end in MW**

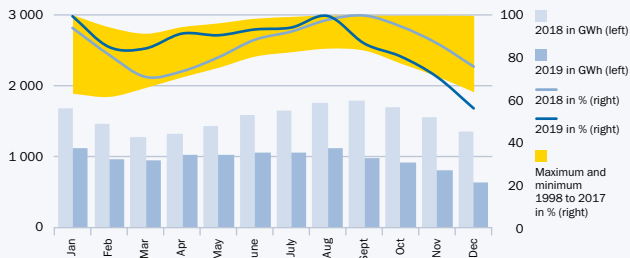
Gross maximum capacity							
	Hydropower plants			Wind, PV, Geothermal	Thermal	Total	Net maximum capacity
	Run of river	Pumped storage	Total				
1995	—	—	11 306	—	6 134	17 440	16 959
2000	5 256	6 407	11 664	49	6 315	18 028	17 532
2005	5 347	6 491	11 837	841	6 534	19 213	18 703
2010	5 412	7 520	12 932	1 054	7 433	21 419	20 844
2015	5 662	7 987	13 650	3 362	7 768	24 780	24 177
2016	5 700	8 418	14 118	3 764	7 323	25 204	24 624
2017	5 716	8 435	14 151	4 080	7 183	25 415	24 842
2018	5 723	8 795	14 517	4 505	7 192	26 214	25 637
<b>2019</b>	<b>5 795</b>	<b>8 803</b>	<b>14 597</b>	<b>4 828</b>	<b>6 731</b>	<b>26 156</b>	<b>25 606</b>

Key figures on electricity infrastructure in Austria (pages 29 – 34)

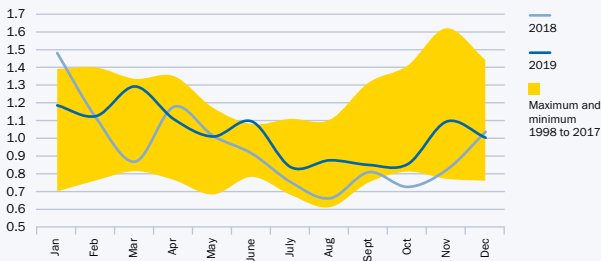
### Storage capacity and fill levels at month end – large reservoirs of public generators, in GWh and %



### 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

2018	2019	1998 to 2017 maximum	1998 to 2017 minimum
0.93	1.02	1.16	0.87



**Energy availability – power plants of public generators (\*), in %**

	Thermal power plants			Pumped storage power plants		
	Availability factor	Utilisation factor	Outages	Availability factor	Utilisation factor	Outages
2000	76.7	32.6	5.9	93.6	18.6	2.6
2005	85.3	42.7	5.3	93.3	19.7	1.1
2010	84.3	35.9	15.0	84.2	18.7	7.7
2015	80.4	12.1	13.7	93.0	17.3	2.3
2016	79.1	16.1	13.7	88.8	15.6	2.2
2017	76.5	21.1	20.1	90.7	15.4	3.6
2018	83.6	18.5	16.4	93.2	15.7	4.3
<b>2019</b>	<b>80.4</b>	<b>26.1</b>	<b>9.4</b>	<b>91.0</b>	<b>16.0</b>	<b>6.1</b>

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

**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	68.9	49.5	42.8	6 648	3 964	2 351
2005	69.9	52.9	41.5	7 545	4 511	2 023
2010	72.7	57.2	40.2	8 680	5 761	1 672
2015	72.0	52.5	37.7	8 667	6 063	1 705
2016	75.1	56.9	36.9	8 977	6 424	898
2017	74.1	56.7	37.1	8 969	6 188	996
2018	74.9	57.7	33.3	9 083	6 460	731
<b>2019</b>	<b>74.2</b>	<b>57.7</b>	<b>32.7</b>	<b>8 947</b>	<b>6 295</b>	<b>435</b>

(1) Electricity and heat output divided by total fuel input

(2) Electricity output divided total by fuel input minus heat output

(3) Electricity output divided by fuel input

<b>Firm capacity in 2019 – run-of-river plants of public generators (*)</b>					
Type of power plant	Up to 50 MW	50 MW to 100 MW	100 MW to 250 MW	Over 250 MW	Total
<b>Capacity in MW</b>					
Run-of-river plants with pondage	204	250	–	–	<b>454</b>
Run-of-river plants without pondage	126	83	444	310	<b>963</b>
<b>Total run-of-river plants</b>	<b>330</b>	<b>333</b>	<b>444</b>	<b>310</b>	<b>1 418</b>
<b>Share in maximum capacity in %</b>					
Run-of-river plants with pondage	40.3	46.3	–	–	<b>43.4</b>
Run-of-river plants without pondage	38.7	53.6	38.5	34.1	<b>37.9</b>
<b>Total run-of-river plants</b>	<b>39.7</b>	<b>47.9</b>	<b>38.5</b>	<b>34.1</b>	<b>39.5</b>

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

## Public grid in Austria

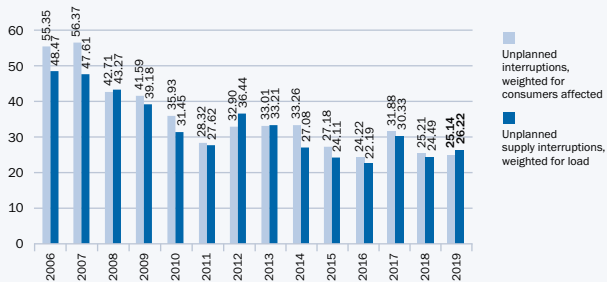
Route length (*) of the public grid at year-end 2019					
Voltage level	Overhead lines		Cables		Total km
	km	Share in %	km	Share in %	
380 kV	1 386	0.6	53	0.0	<b>1 439</b>
220 kV	1 909	0.8	7	0.0	<b>1 916</b>
110 kV	6 148	2.5	733	0.3	<b>6 881</b>
1 kV to 110 kV	23 652	9.8	44 606	18.5	<b>68 258</b>
Up to 1 kV	29 844	12.3	133 357	55.2	<b>163 201</b>
<b>Total</b>	<b>62 939</b>	<b>26.0</b>	<b>178 756</b>	<b>74.0</b>	<b>241 695</b>

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

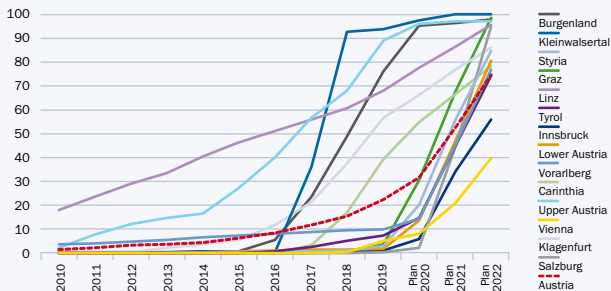
High voltage substations in the public grid at year-end 2019		
Voltage level	Number of transformers	Total capacity in MVA
Primary voltage up to 200 kV	1 043	45 848
Primary voltage over 200 kV	87	30 865
<b>High voltage to high, medium and low voltage</b>	<b>1 130</b>	<b>76 713</b>

Medium voltage substations in the public grid at year-end 2019		
Voltage level	Number of transformers	Total capacity in MVA
<b>Medium voltage to medium and low voltage</b>	<b>79 839</b>	<b>32 950</b>

### Interruption of electricity supply, in minutes



### Smart meters installed until the end of 2019 and roll-out planned until 2022, in %



The figure above testifies to the quality of electricity supply in Austria. The figure below provides an overview of the smart meters installed until the end of 2019 as well as of the roll-out planned until 2022, expressed in percentage terms.

# Market statistics

## Austrian gas market

Consumption structure					
Supply to consumers					
Consumer category	Unit	2018	2019	Change absolute	Change in %
Households	GWh	16 194	16 750	556	3.4
Small business and industry (1)	GWh	8 335	8 530	194	2.3
Medium-sized industry (2)	GWh	7 570	8 098	528	7.0
Large industry (3)	GWh	58 597	60 678	2 081	3.6
Statistical difference	GWh	25	156		
<b>Total supply to consumers</b>	<b>GWh</b>	<b>90 720</b>	<b>94 210</b>	<b>3 490</b>	<b>3.8</b>
Number of metering points (MP)					
		Number of metering points (MP)		Number of Consumer (Cs)	
Consumer category	Unit	2018	2019	2018	2019
Households	1 000	1 226.7	1 220.5	1 176.6	1 170.4
Small business and industry (1)	1 000	86.6	87.3	68.5	68.8
Medium-sized industry (2)	1 000	7.2	7.1	0.9	0.9
Large industry (3)	1 000	3.2	2.9	0.2	0.2
<b>Total number of metering points</b>	<b>1 000</b>	<b>1 323.6</b>	<b>1 317.7</b>	<b>1 246.2</b>	<b>1 240.3</b>
Average consumption (per MP)					
		Average consumption (per MP)		Average consumption (per Cs)	
Consumer category	Unit	2018	2019	2018	2019
Households	kWh/..	13 201	13 724	13 764	14 311
Small business and industry (1)	kWh/..	96 270	97 749	121 724	123 932
Medium-sized industry (2)	MWh/..	1 057.8	1 138.4	8 174.5	8 957.6
Large industry (3)	MWh/..	18 438.2	21 223.3	288 653.6	311 166.8
<b>Total</b>	<b>kWh/..</b>	<b>68 538.0</b>	<b>71 494.7</b>	<b>72 800.0</b>	<b>75 958.0</b>

(1) annual withdrawal up to 2.8 GWh

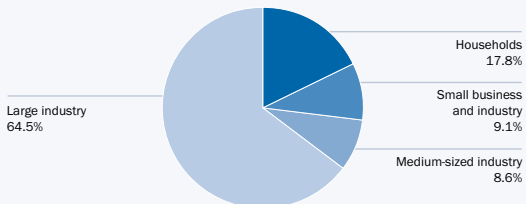
(2) annual withdrawal from 2.8 GWh/a to 28 GWh

(3) annual withdrawal exceeding 28 GWh

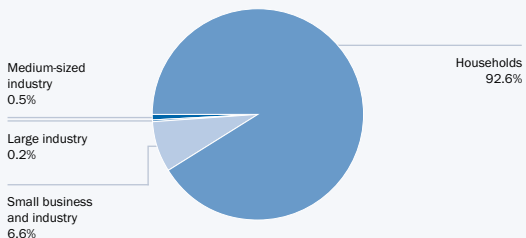
Statistical difference: Difference between metered consumption and individual reporting. Negative values may result from discrepancies between the settlement period and calendar year

Structure of the Austrian natural gas market in terms of consumer groups and areas within Austria (pages 36 – 38)

### Consumption structure – supply to consumers 2019



### Consumption structure – number of metering points 2019

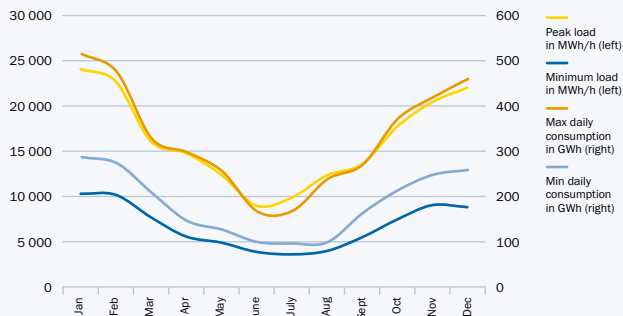


Consumption structure – supply to consumers by grid zone in GWh					
Federal province / grid zone	2018	2019	Change absolute	Change in %	
Burgenland	2 331	2 335	4	0.2	
Carinthia	1 995	1 924	-71	-3.6	
Lower Austria	19 743	18 699	-1 044	-5.3	
Upper Austria	22 287	24 697	2 410	10.8	
Salzburg	3 018	3 134	116	3.8	
Styria	14 161	14 006	-155	-1.1	
Tyrol	4 133	4 297	164	4.0	
Vorarlberg	2 331	2 428	97	4.2	
Vienna	20 696	22 535	1 839	8.9	
Austria	Statistical difference	25	156	–	–
	<b>Total supply to consumers</b>	<b>90 720</b>	<b>94 210</b>	<b>3 490</b>	<b>3.8</b>

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	2018	2019	Change absolute	Change in %
Burgenland	52.2	52.6	0	0.7
Carinthia	13.8	13.7	0	-0.2
Lower Austria	294.3	294.4	0	0.0
Upper Austria	144.1	143.1	-1	-0.7
Salzburg	36.6	36.7	0	0.4
Styria	67.4	67.6	0	0.4
Tyrol	53.5	54.7	1	2.4
Vorarlberg	36.5	37.0	1	1.4
Vienna	625.4	617.8	-8	-1.2
<b>Austria</b>	<b>1 323.6</b>	<b>1 317.7</b>	<b>-6</b>	<b>-0.4</b>

### Load indicators for 2019 in MWh/h and GWh



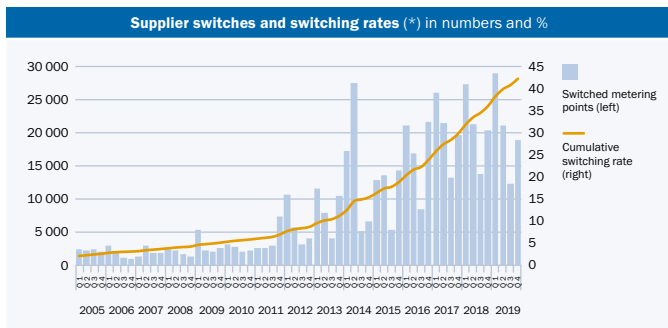
### Load indicators

	Annual peak load	Annual minimum load	Maximum daily minimum load	Maximum daily consumption	Minimum daily consumption	Peak load utilisation period
Year	MWh/h	MWh/h	MWh/h	GWh	GWh	h
2015	20 673	3 286	14 234	432	90	4 092
2016	24 591	3 585	18 228	525	90	3 577
2017	27 115	3 510	22 280	604	96	3 510
2018	27 169	3 470	21 113	596	96	3 339
<b>2019</b>	<b>23 975</b>	<b>3 596</b>	<b>18 926</b>	<b>513</b>	<b>95</b>	<b>3 929</b>

Load indicators of natural gas supply in Austria



## THE EFFECTS OF LIBERALISATION: GAS SWITCHING RATES



(\*) By number of metering points

Supplier switches and switching rates (*)					
	2005	2010	2015	2018	2019
<b>Number of supplier switches</b>					
Households	8 058	8 018	42 662	77 842	76 303
Small business and industry		1 711	3 330	4 423	4 685
Medium-sized industry	837	54	58	196	225
Large industry		16	9	246	21
<b>Total</b>	<b>8 895</b>	<b>9 799</b>	<b>46 059</b>	<b>82 707</b>	<b>81 234</b>
<b>Switching rates in %</b>					
Households	0.6	0.6	3.4	6.3	6.3
Small business and industry		2.2	4.3	5.1	5.4
Medium-sized industry	1.2	6.0	6.9	2.7	3.2
Large industry		8.5	4.6	7.7	0.7
<b>Total</b>	<b>0.7</b>	<b>0.7</b>	<b>3.4</b>	<b>6.2</b>	<b>6.2</b>

(\*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2010	2015	2018	2019
Burgenland	50	139	1 160	2 093	2 406
Carinthia	37	28	585	1 076	995
Lower Austria	2 180	3 142	12 557	19 149	20 780
Upper Austria	1 273	1 582	7 972	12 641	13 041
Salzburg	78	65	568	1 352	1 261
Styria	158	643	3 172	3 932	4 142
Tyrol	–	2	400	1 465	1 458
Vorarlberg	–	2	304	845	1 059
Vienna	5 119	4 196	19 341	40 154	36 092
<b>Austria</b>	<b>8 895</b>	<b>9 799</b>	<b>46 059</b>	<b>82 707</b>	<b>81 234</b>

(\*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2010	2015	2018	2019
Burgenland	0.1	0.3	2.3	4.0	4.6
Carinthia	0.3	0.2	4.2	7.8	7.2
Lower Austria	0.8	1.1	4.3	6.5	7.1
Upper Austria	0.9	1.1	5.5	8.8	9.1
Salzburg	0.3	0.2	1.6	3.7	3.4
Styria	0.3	1.0	4.7	5.8	6.1
Tyrol	–	0.0	0.8	2.7	2.7
Vorarlberg	–	0.0	0.9	2.3	2.9
Vienna	0.7	0.6	2.9	6.4	5.8
<b>Austria</b>	<b>0.7</b>	<b>0.7</b>	<b>3.4</b>	<b>6.2</b>	<b>6.2</b>

(\*) By number of metering points

Gas switching rates (pages 40 – 41)

## Austrian electricity market (public grid)

Consumption structure					
Supply to consumers					
Consumer category	Unit	2018	2019	Change	
Households	GWh	14 551	14 494	-57	-0.4%
Small business and industry	GWh	19 078	19 708	630	3.3%
Medium-sized industry	GWh	8 679	8 650	-30	-0.3%
Large industry	GWh	17 320	16 307	-1 014	-5.9%
Own use from the public grid	GWh	-490	-475		
Statistical difference	GWh	231	192		
<b>Total supply to consumers</b>	<b>GWh</b>	<b>59 369</b>	<b>58 876</b>	<b>-493</b>	<b>-0.8%</b>
Number of metering points				... of consumer	
Consumer category	Unit	2018	2019	2018	2019
Households	1 000	5 034.5	5 049.3	4 080.6	4 095.7
Small business and industry	1 000	1 070.6	1 092.6	603.3	624.5
Medium-sized industry	1 000	31.5	33.8	1.0	1.1
Large industry	1 000	31.3	35.3	0.2	0.2
<b>Total number of metering points</b>	<b>1 000</b>	<b>6 167.8</b>	<b>6 210.8</b>	<b>4 685.2</b>	<b>4 721.5</b>
Average consumption per metering point				... per consumer	
Consumer category	Unit	2018	2019	2018	2019
Households	kWh/...	2 890	2 871	3 566	3 539
Small business and industry	kWh/...	17 820	18 038	31 621	31 559
Medium-sized industry	kWh/...	275 861	256 063	8 305 672	8 091 500
Large industry	kWh/...	553 502	462 584	71 868 027	68 514 958
<b>Total</b>	<b>kWh/...</b>	<b>9 626</b>	<b>9 480</b>	<b>12 671</b>	<b>12 470</b>

Households: residential sector

Small business and other small consumers: Consumers with an annual withdrawal from the public grid of less than 4 GWh

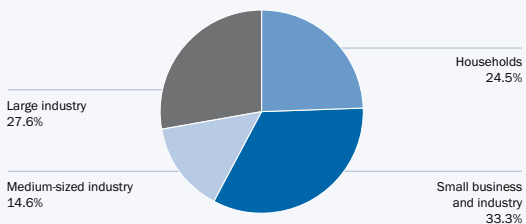
Medium-sized industry: Consumers with an annual withdrawal from the public grid between 4 GWh and 20 GWh

Large industry: Consumers with an annual withdrawal from the public grid of more than 20 GWh

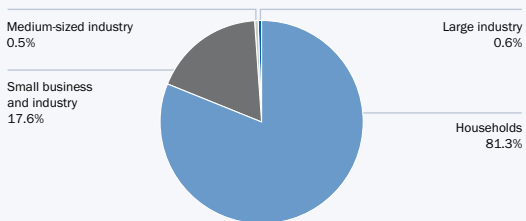
Own use from the public grid is no final consumption (no further breakdown)

Statistical difference: Difference between metered consumption and individual reporting.

### Consumption structure – supply to consumers 2019



### Consumption structure – number of metering points 2019



**Consumption structure – supply to consumers by grid zone in GWh**

Federal province / grid zone		2018	2019	Change	
Burgenland		1 695	1 656	-40	-2.3%
Carinthia		4 318	4 242	-76	-1.8%
Lower Austria		8 634	8 608	-26	-0.3%
Upper Austria		11 338	11 067	-271	-2.4%
Salzburg		3 663	3 711	48	1.3%
Styria		8 859	8 803	-57	-0.6%
Tyrol		5 711	5 725	13	0.2%
Vorarlberg		2 667	2 703	37	1.4%
Vienna		12 743	12 645	-99	-0.8%
Austria	Own use from the public grid	-490	-475	-	-
	Statistical difference	231	192	-	-
	<b>Total supply to consumers</b>	<b>59 369</b>	<b>58 876</b>	<b>-493</b>	<b>-0.8%</b>

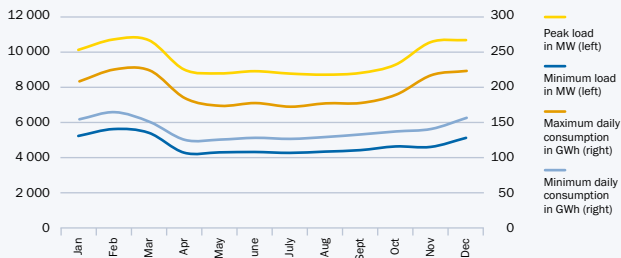
Own use from the public grid is no final consumption (no further breakdown)

Statistical difference: Difference between metered consumption and individual reporting.

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

Federal province / grid zone	Number of metering points		Number of consumer	
	2018	2019	2018	2019
Burgenland	214.5	217.8	169.8	171.9
Carinthia	393.3	395.3	281.1	282.8
Lower Austria	858.4	863.0	657.6	667.6
Upper Austria	1 037.3	1 042.7	742.0	741.1
Salzburg	439.6	441.4	281.1	283.3
Styria	947.2	952.0	694.9	702.7
Tyrol	487.1	491.3	378.4	382.9
Vorarlberg	240.9	243.7	193.3	193.2
Vienna	1 549.5	1 563.7	1 287.1	1 295.9
<b>Austria</b>	<b>6 167.8</b>	<b>6 210.8</b>	<b>4 685.2</b>	<b>4 721.5</b>

### Load indicators for 2019 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	
2015	10 066	4 075	6 554	45 958	6 071	0.69
2016	10 397	4 085	6 969	46 777	5 947	0.68
2017	10 578	4 085	7 170	47 687	5 919	0.68
2018	10 721	4 255	7 351	48 040	5 862	0.67
<b>2019</b>	<b>10 670</b>	<b>4 138</b>	<b>7 152</b>	<b>47 581</b>	<b>5 857</b>	<b>0.67</b>

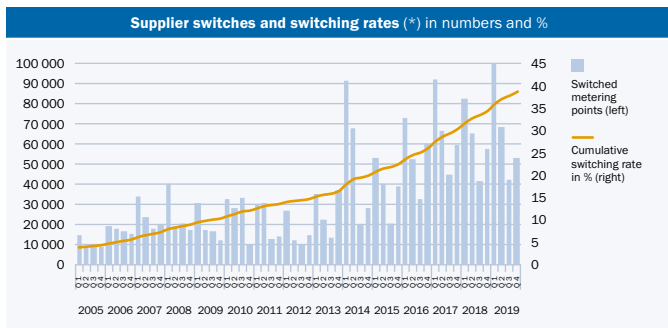
Peak load utilisation time = consumption / peak load [during reference period]

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

Structure of the Austrian electricity market in terms of consumer groups and areas within Austria (pages 42 – 44)

Load indicators of electricity supply in Austria (this page)

## THE EFFECTS OF LIBERALISATION: ELECTRICITY SWITCHING RATES



(\*) By number of metering points

Supplier switches and switching rates (*)					
	2005	2010	2015	2018	2019
<b>Number of supplier switches</b>					
Households	22 768	69 781	102 571	209 177	<b>210 635</b>
Small business and industry	19 686	34 387	50 039	36 893	<b>51 109</b>
Medium-sized industry	164	224	163	843	<b>1 926</b>
Large industry	21	10	35	269	<b>287</b>
<b>Total</b>	<b>42 639</b>	<b>104 402</b>	<b>152 808</b>	<b>247 182</b>	<b>263 957</b>
<b>Switching rates in %</b>					
Households	0.6	1.7	2.3	4.2	<b>4.2</b>
Small business and industry	1.2	2.1	3.0	3.4	<b>4.7</b>
Medium-sized industry	6.3	12.2	8.2	2.7	<b>5.7</b>
Large industry	11.0	5.2	16.7	0.9	<b>0.8</b>
<b>Total</b>	<b>0.8</b>	<b>1.8</b>	<b>2.5</b>	<b>4.0</b>	<b>4.2</b>

(\*) By number of metering points

Supplier switches (*) by grid zone					
Federal province / grid zone	2005	2010	2015	2018	2019
Burgenland	335	1 402	3 826	5 707	<b>6 446</b>
Carinthia	5 078	3 760	13 795	18 689	<b>16 759</b>
Lower Austria	6 322	21 580	17 570	32 416	<b>38 917</b>
Upper Austria	11 952	20 077	36 731	60 768	<b>66 810</b>
Salzburg	1 057	1 476	3 757	6 974	<b>7 173</b>
Styria	3 502	26 180	32 533	33 501	<b>38 846</b>
Tyrol	2 028	1 706	4 140	9 657	<b>11 170</b>
Vorarlberg	240	607	2 221	3 389	<b>3 754</b>
Vienna	12 125	27 614	38 235	76 081	<b>74 082</b>
<b>Austria</b>	<b>42 639</b>	<b>104 402</b>	<b>152 808</b>	<b>247 182</b>	<b>263 957</b>

(\*) By number of metering points

Switching rates (*) by grid zone in %					
Federal province / grid zone	2005	2010	2015	2018	2019
Burgenland	0.2	0.7	1.9	2.7	<b>3.0</b>
Carinthia	1.4	1.0	3.5	4.8	<b>4.2</b>
Lower Austria	0.8	2.6	2.1	3.8	<b>4.5</b>
Upper Austria	1.3	2.1	3.6	5.9	<b>6.4</b>
Salzburg	0.3	0.4	0.9	1.6	<b>1.6</b>
Styria	0.4	2.9	3.5	3.5	<b>4.1</b>
Tyrol	0.5	0.4	0.9	2.0	<b>2.3</b>
Vorarlberg	0.1	0.3	1.0	1.4	<b>1.5</b>
Vienna	0.8	1.9	2.5	4.9	<b>4.7</b>
<b>Austria</b>	<b>0.8</b>	<b>1.8</b>	<b>2.5</b>	<b>4.0</b>	<b>4.2</b>

(\*) By number of metering points

Electricity switching rates (pages 46 – 47)



Green electricity injection and support payments (Austria, 2019 and 2018)				
Primary energy source	Injection in GWh	Net support in m €	Supported green electricity share in total supply, in %	Average support in cent/kWh
<b>2019</b>			(1)	
<b>Supported small hydro</b>	<b>1 333.6</b>	<b>78.7</b>	<b>2.3</b>	<b>5.90</b>
<b>Other renewables</b>	<b>9 072.6</b>	<b>998.6</b>	<b>15.4</b>	<b>11.01</b>
Wind	6 207.7	564.5	10.5	9.09
Wastes with high biog. fraction	1 581.8	195.4	2.7	12.35
Biogas (*)	561.4	97.6	1.0	17.38
Liquid biomass	0.2	0.0	0.0003	6.16
Photovoltaics	707.3	140.3	1.20	19.84
Sewage and landfill gas	14.0	0.8	0.02	5.59
Geothermal	0.2	0.0	0.0003	5.25
<b>Total small hydro and other renewables</b>	<b>10 406.2</b>	<b>1 077.3</b>	<b>17.7</b>	<b>10.35</b>
<b>2018</b>			(2)	
<b>Supported small hydro</b>	<b>1 505.6</b>	<b>82.9</b>	<b>2.5</b>	<b>4.78</b>
<b>Other renewables</b>	<b>8 278.6</b>	<b>963.7</b>	<b>14.0</b>	<b>11.64</b>
Wind	5 060.6	463.5	8.5	8.67
Wastes with high biog. fraction	2 013.7	260.4	3.4	13.38
Biogas (*)	568.0	98.8	1.0	17.53
Liquid biomass	0.1	0.0	0.0001	13.21
Photovoltaics	620.4	140.1	1.05	26.56
Sewage and landfill gas	15.8	0.8	0.03	4.58
Geothermal	0.2	0.0	0.0004	3.48
<b>Total small hydro and other renewables</b>	<b>9 784.2</b>	<b>1 046.5</b>	<b>16.5</b>	<b>10.70</b>

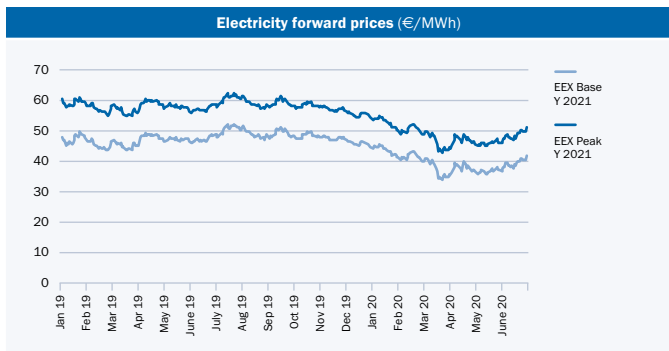
(\*) incl. operation markups

(1) Relating to the total electricity supplied to consumers from the public grid in 2019, i.e. 58 912 GWh (as of 05/2020)

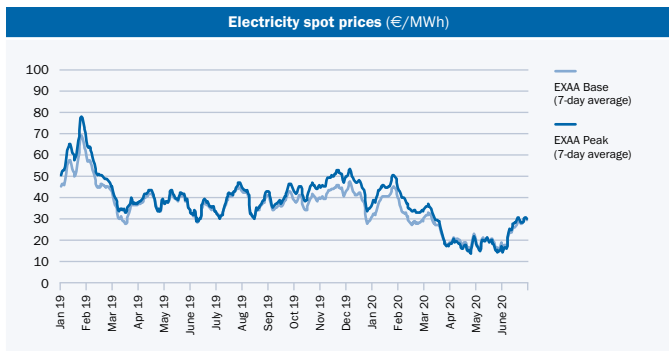
(2) Relating to the total electricity supplied to consumers from the public grid in 2018, i.e. 59 268 GWh (as of 05/2020)

Source: Green power settlement agent OeMAG, E-Control, May 2020 – preliminary values

## Wholesale markets



Source: EEX



Source: EXAA

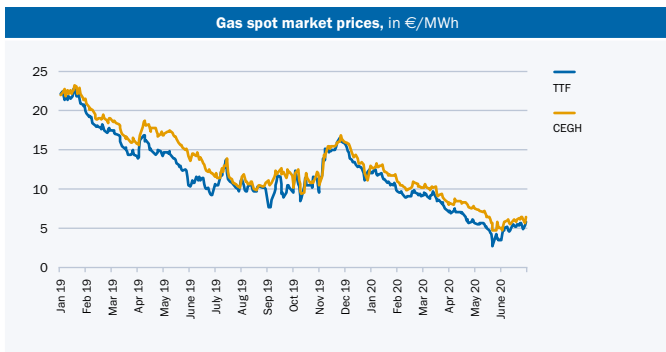
Price developments in a variety of relevant wholesale markets (pages 49 – 55)

<b>Electricity forward and spot prices in €/MWh</b>				
	<b>EEX Base</b>		<b>EEX Peak</b>	
	<b>Day-ahead average</b>	<b>Y 2021 average</b>	<b>Day-ahead average</b>	<b>Y 2021 average</b>
2018	46.29	41.16	50.04	52.35
2019	40.16	47.66	43.39	58.20
2020	26.45	39.50	28.20	48.59
January 2019	57.32	47.42	65.04	59.37
February 2019	46.73	45.21	51.02	57.12
March 2019	33.23	45.29	36.29	56.60
April 2019	38.74	47.98	39.83	59.11
May 2019	38.60	47.27	39.34	58.06
June 2019	33.20	47.15	33.77	57.24
July 2019	39.54	50.46	40.60	60.51
August 2019	37.16	48.93	38.02	58.90
September 2019	37.64	49.34	40.06	59.34
October 2019	39.43	48.41	44.38	58.47
November 2019	42.63	47.67	48.92	57.40
December 2019	38.04	46.09	43.78	55.44
January 2020	40.31	43.63	45.34	52.83
February 2020	29.55	41.71	35.07	50.54
March 2020	25.19	37.56	26.86	46.53
April 2020	19.49	37.76	18.29	46.89
May 2020	18.22	36.86	17.07	46.04
June 2020	25.86	39.29	26.63	48.51

Source: EXAA, EEX

Gas spot market prices, in €/MWh					
	TTF (NL) average	CEGH (AT) average		TTF (NL) average	CEGH (AT) average
2018	19.80	20.65	September 2019	9.65	11.64
2019	13.58	14.81	October 2019	10.35	10.94
2020	7.58	8.70	November 2019	14.68	14.84
January 2019	21.47	22.09	December 2019	13.16	13.82
February 2019	18.04	19.21	January 2020	11.08	12.14
March 2019	15.69	17.17	February 2020	9.23	10.27
April 2019	15.13	17.16	March 2020	8.54	9.46
May 2019	13.28	16.11	April 2020	6.52	8.04
June 2019	10.47	13.27	May 2020	4.61	6.25
July 2019	10.96	11.49	June 2020	5.00	5.81
August 2019	10.14	10.57			

Sources: ICIS Heren, CEGH

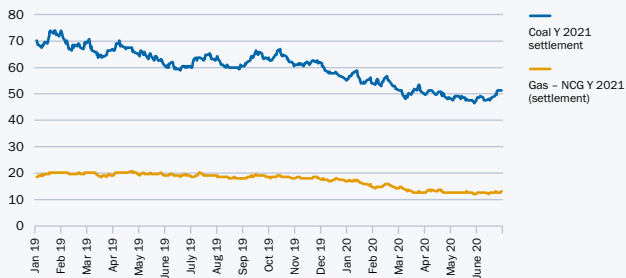


Sources: ICIS Heren, CEGH

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

Y 2021					
	Gas average	Coal average		Gas average	Coal average
2018	18.82	68.52	September 2019	18.75	63.68
2019	19.01	64.05	October 2019	18.47	63.63
January 2019	19.75	71.27	November 2019	18.23	61.75
February 2019	19.89	68.58	December 2019	17.44	58.15
March 2019	19.42	66.08	January 2020	16.27	55.96
April 2019	20.05	67.34	February 2020	15.01	54.28
May 2019	19.63	63.93	March 2020	13.33	50.80
June 2019	19.10	60.22	April 2020	13.04	49.92
July 2019	19.13	63.08	May 2020	12.62	48.19
August 2019	18.37	60.72	June 2020	12.60	48.98

Source: EEX, ICE

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

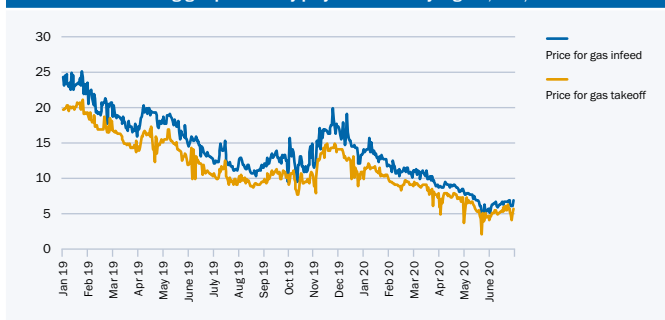
Source: EEX, ICE

### Gas import price (2009 = 100)

	Import index	Change in %		Import index	Change in %
2009	100.00		2017	89.16	14.79
2010	111.16	11.16	2018	109.36	22.66
2011	132.78	19.44	2019	85.95	-21.40
2012	146.56	10.38	January 2020	80.31	-6.56
2013	147.29	0.50	February 2020	70.80	-11.84
2014	122.20	-17.03	March 2020	62.71	-11.43
2015	108.96	-10.83	April 2020	55.65	-11.26
2016	77.67	-28.72	May 2020	48.45	-12.94

Source: Statistics Austria

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



Source: Austrian Gas Clearing and Settlement (AGCS)

**Brent oil forward market (next month) in €/barrel and \$/barrel**

	€/barrel	USD/barrel	Month-on-month change of € in %
2018	60.88	71.72	
2019	57.18	64.09	
January 2019	52.72	60.18	
February 2019	56.79	64.46	7.73
March 2019	59.30	67.03	4.42
April 2019	63.58	71.57	7.20
May 2019	62.55	70.06	-1.62
June 2019	55.73	62.95	-10.90
July 2019	57.23	64.20	2.68
August 2019	53.41	59.42	-6.67
September 2019	56.54	62.21	5.85
October 2019	53.90	59.57	-4.67
November 2019	56.64	62.59	5.08
December 2019	58.44	65.09	3.18
January 2020	54.52	60.53	-6.71
February 2020	50.80	55.38	-6.83
March 2020	35.18	38.97	-30.74
April 2020	30.12	32.96	-14.40
May 2020	31.30	33.90	3.92
June 2020	36.34	40.90	16.13

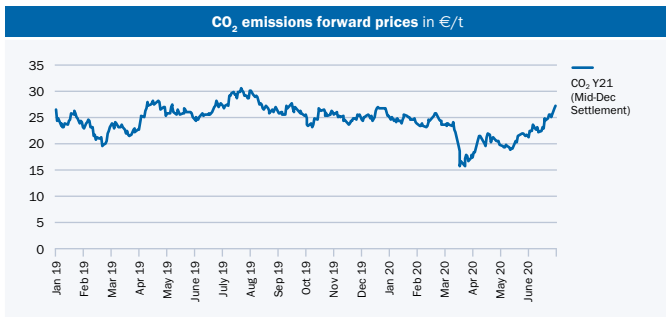
Source: ICE, Oesterreichische Nationalbank (OeNB)

**Brent oil forward market in €/barrel**

Source: ICE, Oesterreichische Nationalbank (OeNB)

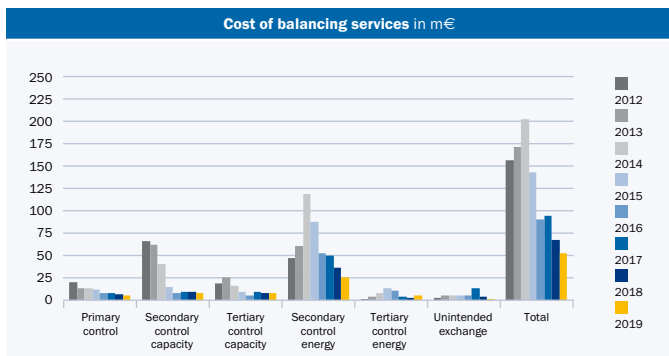
CO <sub>2</sub> emissions forward prices in €/t			
	EEX CO <sub>2</sub> Y21 (MidDec)		EEX CO <sub>2</sub> Y21 (MidDec)
2018	16.96	September 2019	26.37
2019	25.62	October 2019	25.27
January 2019	24.53	November 2019	24.96
February 2019	22.03	December 2019	25.68
March 2019	22.90	January 2020	24.70
April 2019	26.55	February 2020	24.37
May 2019	26.17	March 2020	20.17
June 2019	25.95	April 2020	20.47
July 2019	28.87	May 2020	20.41
August 2019	27.69	June 2020	23.89

Source: EEX



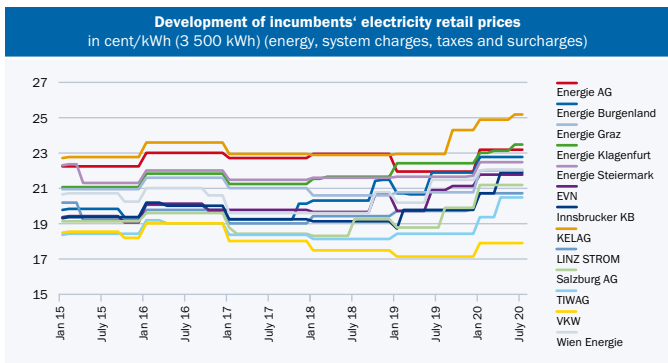
Source: EEX





Source: APG, own calculations

## Retail markets



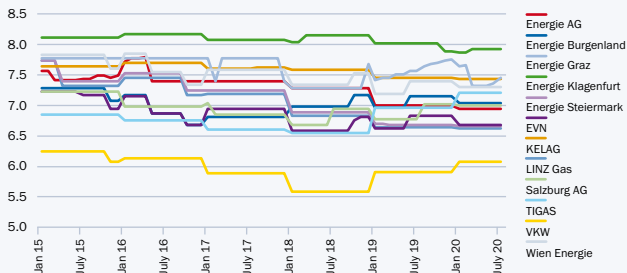
Source: E-Control, tariff calculator

**Development of electricity retail prices in cent/kWh**

Energy prices of all suppliers				
	1st quartile	Median	3rd quartile	weighted average
January 2015	6.053	6.488	7.314	6.891
July 2015	5.870	6.211	6.958	6.657
January 2016	5.439	6.980	6.096	—
July 2016	5.346	6.935	5.961	—
January 2017	5.250	5.829	6.647	6.031
July 2017	5.260	5.790	6.610	6.021
January 2018	5.157	5.814	6.515	6.044
July 2018	5.295	5.920	6.710	6.201
January 2019	5.680	6.311	6.940	6.542
July 2019	5.838	6.490	7.125	6.948

Retail price developments for electricity and gas (pages 57 – 58)

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

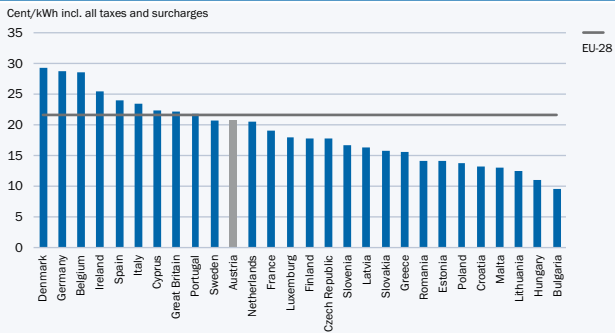


Source: E-Control, tariff calculator

### Development of gas retail prices in cent/kWh

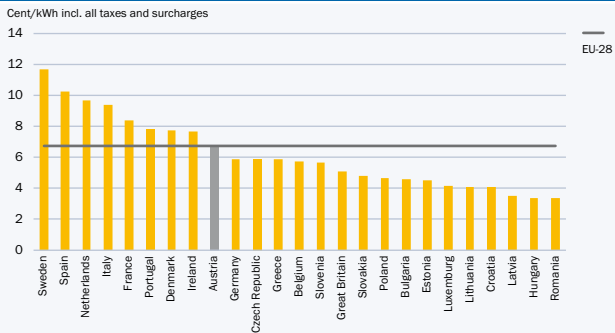
	Energy prices of all suppliers				weighted average
	1st quartile	Median	3rd quartile		
January 2015	3.150	3.330	3.526	—	
July 2015	3.097	3.270	3.512	—	
January 2016	2.792	3.117	3.363	—	
July 2016	2.639	3.009	3.182	—	
January 2017	2.643	2.988	3.176	3.092	
July 2017	2.650	2.956	3.167	3.122	
January 2018	2.509	2.861	3.128	3.054	
July 2018	2.607	2.913	3.198	3.218	
January 2019	2.564	2.918	3.169	3.164	
July 2019	2.680	3.032	3.209	3.240	

### Household electricity prices in Europe, H2 2019 (2 500 – 5 000 kWh)

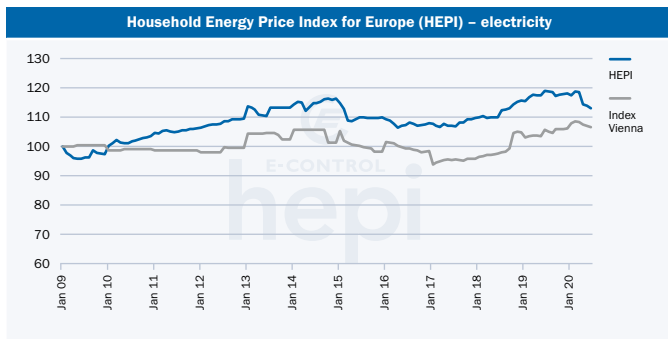


Source: Eurostat (as of 3rd July 2019)

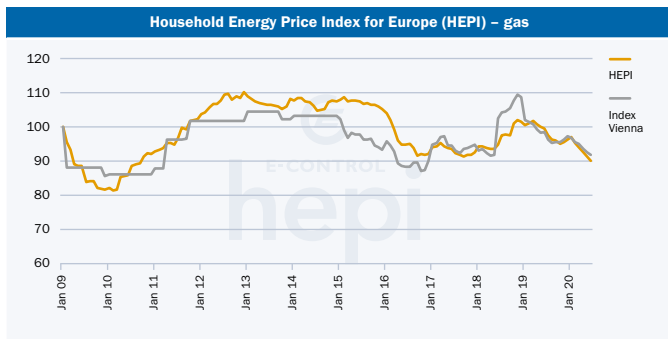
### Household gas prices in Europe, H2 2019 (5 555.6 – 55 556 kWh)



Source: Eurostat (as of 3rd July 2019)



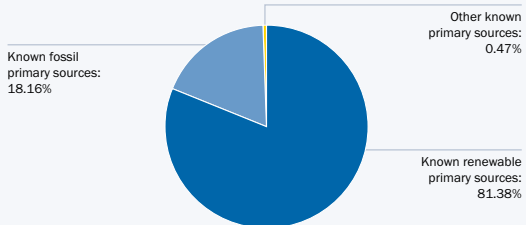
Sources: E-Control, MEKH and VaasaETT Ltd.



Sources: E-Control, MEKH and VaasaETT

International electricity and gas price comparisons (pages 59 – 60)

## Electricity labelling in Austria in 2019



Austrian electricity labelling in 2019

# 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 for Sustainability and Tourism.

Statistical work on electricity and gaseous energy carriers is conducted by E-Control (section 52 Electricity Act and section 59 Natural Gas Act). The details and scope of this statistical work and regulations on the publication of the results are contained in the Electricity Statistics Ordinance 2016 (issued by the Ministry of Science, Research and Economy, FLG II no 17/2016) and the Gas Statistics Ordinance 2017 (issued by E-Control's Executive Board, FLG II no 417/2017).

The results of data collection and analyses are published on our website at [www.e-control.at/en/statistics](http://www.e-control.at/en/statistics).

## Glossary

**Final energy consumption** in energy statistics is the consumption of energy for any purpose other than transformation into other forms of energy. Final energy is the useful energy available to a consumer (e.g. for heating, lighting, mechanical uses). Neither transformation losses nor transport losses or natural gas supplied to gas-fired power stations are part of final energy consumption.

**Supply to consumers** in gas and electricity statistics is the energy withdrawn from the grid or autogenerated by consumers (final customers) and consumed by them. The concept embraces both gas supplied to gas-fired power plants and electricity supplied to refineries. This also holds for the electricity generated by refineries in their own power plants and used to process oil.

**Gross domestic consumption** in energy statistics is the energy needed to cover all domestic energy demand. Apart from final energy consumption and final non-energy consumption, it includes transformation losses, own use of the energy sector and non-energetic uses of fossil fuels (e.g. the use of coal for making electrodes). Please note that breakdown according to individual energy sources or regional breakdown of the gross domestic consumption might yield negative values where export rates are high.

**Useful energy consumption** in energy statistics is the final energy consumption minus consumption losses (depending on the equipment's efficiency e.g. in lighting, heating or cooling devices). Useful energy can normally be broken down into space heating and cooling, process heat (steam production and industrial furnaces), mechanical uses (stationary engines), transport, IT and lighting, and electrochemical uses.

**Electricity and natural gas balances** in electricity and natural gas statistics cover the respective markets and rely solely on physical flow data. Please note that the electricity balance includes the total gross electricity production at the generator terminals (i.e. also electricity produced in pumped storage plants) but also energy consumption for pumping. The natural gas balance includes all imports and exports metered at Austria's borders, and all storage movements, regardless of whether the gas is destined for domestic or foreign consumption.

#### **Natural gas conditions**

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

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

humidity: 0 percent

absolute pressure: 1 013.25 mbar

Latest valid calorific value ( $\text{kWh}/\text{Nm}^3$ ): 11.3



**Public grid** means the grid in the Austrian control areas APG, TIRAG (up to 2010) and VKW (up to 2011 incl. VIW) as well as the Austrian supply areas connected to foreign control areas.

**Fossil fuels** are fuels from natural resources formed from biomass through natural processes over time. The term is also used to refer to secondary fuels produced from primary fossil fuels (e.g. coke or gasoline).

**Renewable energy** is generated from geothermal energy, solar power or gravity, i.e. from non-finite energy sources, or from biomass as a finite energy source.

Please note that electricity statistics differentiate between (i) hydropower, (ii) wind, solar and geothermal energy, and (iii) biofuels; renewables shares are itemised according to generation types.

**Biofuels** as used in the Austrian Green Electricity Act are in particular the following renewable, non-fossil energy sources: biomass, wastes containing a high biogenous fractions, landfill and sewage gas, biogas, meat and bone meal, black liquor, and sewage sludge.

**Units of mass and volume** are physical units for the purpose of metering mass or volume in different states of matter (solid, liquid, gaseous), such as litres or cubic metres.

**Energy units** quantify a fuel's or energy source's energy content. Electric energy and hydropower are measured in kilowatt hours (kWh), the heat of thermal energy in calories or joule. In the interest of comparability, solid, liquid and gaseous fuels may also be measured in energy units; converting physical into energy units is achieved by means of conversion factors that relate one unit of a fuel to the heat produced from it (see the calorific values in different energy balances).

## Units of measurement

1 V	=	1 volt		
1 A	=	1 ampere		
1 W	=	1 watt		
1 Hz	=	1 hertz	=	1 oscillation/sec
1 J	=	1 joule	=	1 watt second (Ws) = $0.27778 \cdot 10^3$ Wh
1 Wh	=	1 watt hour	=	$3.6 \cdot 10^3$ 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 ( $\mu$ )
$10^9$ 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
<hr/>		
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
<hr/>		
1 kJ	= 1 kilojoule	= 1 000 J
1 MJ	= 1 megajoule	= 1 000 kJ
1 GJ	= 1 gigajoule	= 1 000 MJ
1 TJ	= 1 terajoule	= 1 000 GJ

## Multilingual terms

Deutsch	English	Français
Laufkraftwerk	run-of-river power plant	centrale gravitaire
Speicherkraftwerk	storage power plant	station de pompage-turbinage
Wasserkraftwerk	hydropower plant	centrale hydroélectrique
Steinkohle	hard coal	houille
Braunkohle	lignite	lignite
Derivate	derivative	dérivés
Erdgas	natural gas	gaz naturel
Fossile Brennstoffe	fossil fuels	combustibles fossiles
Biogene Brennstoffe	biofuels	biocombustibles
Wärmeleistung	thermal power plant	centrale thermique
Windkraftwerk	wind power plant	centrale éolienne
Photovoltaikanlage	solar/ photovoltaic power plant	centrale photovoltaïque
Geothermie	geothermal energy	géothermie
Speicherentnahme	storage withdrawal	prélèvement
Speichereinpressung	storage injection	stockage
Eigenverbrauch	own use/ consumption	usage propre
Verlust / Netzverlust	(grid) losses	pertes en ligne
Pumpstromaufwand / Verbrauch f. Pumpspeicherung	consumption for pumped storage / pumping	consommation des pompes
Haushalte	households	secteur résidentiel
Sonstige Kleinkunden	other small consumers	autres clients profilés
Lastganggemessene Kunden	load-metered consumers	clients mesurés
Inlandstromverbrauch	domestic electricity consumption	consommation intérieure
Abgabe an Endkunden	supply to consumers	livraison aux consommateurs
Energetischer Endverbrauch	final energy consumption	consommation finale d'énergie
Nutzenergie(verbrauch)	useful energy (consumption)	énergie utile (consommation)
Heizwert	net calorific value	pouvoir calorifique inférieur
Brennwert	gross calorific value	pouvoir calorifique supérieur

## International conversion factors

Units of mass					
To:	kg	t	lt	st	lb
From:	Multiply by:				
<b>kg</b> Kilogramme	<b>1</b>	0.001	$9.84 \times 10^{-4}$	$1.102 \times 10^{-3}$	2.2046
<b>t</b> Ton	1 000	<b>1</b>	0.984	1.1023	2 204.6
<b>lg</b> Long ton	1 016	1.016	<b>1</b>	1.120	2 240
<b>st</b> Short ton	907.2	0.9072	0.893	<b>1</b>	2 000
<b>lb</b> Pound	0.454	$4.54 \times 10^{-4}$	$4.46 \times 10^{-4}$	$5.0 \times 10^{-4}$	<b>1</b>

Source: IEA

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

Source: Eurostat, IEA

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

Source: IEA

## Calorific values in the Austrian energy balance

Statistics Austria, arithmetic means over the past five years			
Energy source	Gigajoule / ...	Gross domestic consumption	Final energy consumption
Hard coal	t	28.48	27.762
Lignite	t	20.71	20.711
Brown coal briquettes	t	19.80	19.800
Coke oven coke	t	28.65	28.652
Crude oil	t	42.50	–
Petrol	t	40.99	41.378
Diesel	t	42.39	42.394
Gas oil	t	42.86	42.858
Fuel oil	t	41.12	41.455
Natural gas	1 000 cu m	36.42	36.418
Industrial waste	t	14.53	17.436
Fuelwood	t	14.31	14.311
Biofuels	t	11.85	13.042
Geothermal energy	MWh	3.60	3.600
District heat	MWh	–	3.600
Hydropower	MWh	3.60	–
Wind and photovoltaics	MWh	3.60	–
Electric energy	MWh	3.60	3.600

Source: Statistics Austria





## Editorial

### **Publisher and proprietor:**

E-Control

Rudolfsplatz 13a, A-1010 Vienna

phone: +43 1 24 7 24-0

fax: +43 1 24 7 24-900

e-mail: [office@e-control.at](mailto:office@e-control.at)

[www.e-control.at](http://www.e-control.at)

twitter: [www.twitter.com/energiecontrol](https://www.twitter.com/energiecontrol)

facebook: [www.facebook.com/energie.control](https://www.facebook.com/energie.control)

### **Editorial responsibility:**

Andreas Eigenbauer and Wolfgang Urbantschitsch,

Executive Directors, E-Control

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