

ENERGY IN NORWAY

Production and consumption of electric energy in 2006

| | Preliminary figures | |
|--|---------------------|-----------------------|
| | GWh | % change 2005/2006 |
| Power production | 121663 | - 11.7 |
| + Imports | 9802 | |
| - Exports | 8947 | |
| = Gross consumption (total) | 122518 | - 2.6 |
| - Non-priority power ¹⁾ | 6500 | 16.2 |
| - Pumped storage power | 540 | |
| - Losses | 9514 | |
| = Net consumption, firm power | 105964 | - 0.3 |
| Of which: | | |
| Energy intensive industry | 31455 | |
| General consumption | 74509 | |
| Gross consumption, firm power | 114359 | - 2.7 |
| Of which: | | |
| Energy intensive industry | 32399 | - 10.1 |
| General consumption | 81960 | 0.6 |
| General consumption, gross, adjusted for temperature conditions | 85919 | 1.0 |

¹⁾ Estimated by NVE

2007 - EDITION

The production of electric energy in 2006 was 121.7 TWh, a decrease of 11.7% compared to 2005. 98.5% of the production was hydropower. Total inflow in 2006 was 92% of normal as against 120% in 2005. The energy content of the reservoirs at the end of 2006 was 56.5 TWh, which is 67.0% of the total capacity, a decrease of 8.7 TWh from the end of previous year.

During the past 10 years (1996-2006) an average annual increase in production of 1.5% is observed.

At the end of 2006, the production from the Norwegian hydropower system is estimated at 120.9 TWh for years with average inflow.

Domestic gross consumption was 122.5 TWh, a decrease of 2.6% compared to 2005. The gross general consumption increased by 0.6%. However, 2006 was considerable warmer than normal. Adjusted for temperature conditions, the general consumption increased by 1.0%. Average annual increase over the past 10 years has been 0.9%.

The maximum system power load in 2006 related to domestic consumption was 21575 MW.

In 2006, the power station installed capacity increased by 410 MW, an increase of 1.4%. Average annual increase in installed capacity over the past 10 years has been 0.5%.

As of 31 December 2005, the total installed capacity of the Norwegian power system (hydro, wind and thermal power stations) was 29176 MW, of which 98.0% is hydropower.

Data in this folder concerning the electricity supply for 2005 and earlier years, are all taken from Norwegian Official Statistics (Electricity Statistics). Information about individual power stations and reservoirs is obtained directly by the Norwegian Water Resources and Energy Directorate. The figures for 2006 are based on preliminary data from Statistics Norway and other sources, and must be regarded as approximate values. The table on oil and gas resources is based on information from the Directorate of Petroleum.

Statistics Norway is also the source for the tables giving district heating, production of important forms of energy, domestic deliveries of petroleum products, final energy consumption and the energy balance.

Units for power:
1 W (watt) = 1 Nm/s (newtonmeter/second)

Units for energy:
1 J (joule) = 1 Nm

Units for electric energy:

Prefixes:

| | | |
|---|--------|-------------|
| k | = kilo | = 10^3 |
| M | = mega | = 10^6 |
| G | = giga | = 10^9 |
| T | = tera | = 10^{12} |
| P | = peta | = 10^{15} |
| E | = exa | = 10^{18} |

1 kWh = 3.6 · 10⁶ J

Eg.: 1 kWh = 3.6 · 10⁶ J = 3.6 MJ

Energy content of selected fuels:

| | |
|----------------|-------------------------|
| Coal | 28.1 MJ/kg |
| Fuel wood | 16.8 MJ/kg |
| Petrol | 43.9 MJ/kg |
| Light fuel oil | 43.1 MJ/kg |
| Heavy fuel oil | 40.6 MJ/kg |
| Crude oil | 36.0 GJ/Sm ³ |
| Natural gas | 40.4 MJ/Sm ³ |

Hydropower potential as of 12.31.2006

(Mean annual production in GWh)

| County | Developed | Development licence granted | Remaining *) | Protected | Total |
|------------------|-----------|-----------------------------|--------------|-----------|--------|
| Østfold | 4194 | 9 | 54 | 20 | 4277 |
| Akershus | 923 | 0 | 0 | 72 | 995 |
| Oslo | 22 | 0 | 0 | 13 | 35 |
| Hedmark | 2396 | 7 | 752 | 2981 | 6135 |
| Oppland | 5740 | 153 | 2915 | 3960 | 12769 |
| Buskerud | 8292 | 69 | 1471 | 1077 | 10909 |
| Vestfold | 16 | 0 | 146 | 47 | 209 |
| Telemark | 11258 | 33 | 1414 | 760 | 13465 |
| Aust-Agder | 4408 | 219 | 1183 | 607 | 6417 |
| Vest-Agder | 9322 | 111 | 1258 | 981 | 11671 |
| Rogaland | 11648 | 580 | 2064 | 2239 | 16531 |
| Hordaland | 16123 | 303 | 5031 | 7843 | 29299 |
| Sogn og Fjordane | 13785 | 579 | 6723 | 6393 | 27480 |
| Møre og Romsdal | 6303 | 204 | 2518 | 4145 | 13170 |
| Sør-Trøndelag | 4470 | 82 | 676 | 2374 | 7602 |
| Nord-Trøndelag | 3162 | 50 | 671 | 3069 | 6951 |
| Nordland | 14659 | 168 | 7218 | 4920 | 26965 |
| Troms | 2652 | 23 | 2137 | 2012 | 6824 |
| Finnmark | 1514 | 23 | 566 | 1290 | 3393 |
| Total Norway | 120887 | 2610 | 36797 | 44803 | 205097 |

*) Including the following: Under licencing, under planning and remaining.

Oil and gas resources as of 12.31.2006

| | Oil | | Gas | | Total | |
|----------------------------|----------------------------|-----|----------------------------|-----|----------------------------|-----|
| | mill. Sm ³ o.e. | EJ | mill. Sm ³ o.e. | EJ | mill. Sm ³ o.e. | EJ |
| Originally reserves | 5687 | 205 | 2545 | 92 | 8232 | 296 |
| + Resources in fields | 429 | 15 | 156 | 6 | 585 | 21 |
| + Resources in discoveries | 160 | 6 | 494 | 18 | 654 | 24 |
| + Increased extraction | 170 | 6 | 100 | 4 | 270 | 10 |
| + Undiscovered | 1500 | 54 | 1900 | 68 | 3400 | 122 |
| - Sold | 3518 | 127 | 1055 | 38 | 4573 | 165 |
| = Remaining resources | 4428 | 159 | 4140 | 149 | 8568 | 308 |

Changes in production capacity in 2006 and 2007

| Power station and county | Maximum capacity (MW) | Mean annual production (GWh) |
|---|-----------------------|------------------------------|
| Changes in 2006 | | |
| Hemsil II, Buskerud | 16 | 34 |
| Grunnåi, Telemark | 15 | 54 |
| Breiava, Rogaland | 15 | 54 |
| Dalvatn, Rogaland | 15 | 45 |
| Aurland I, Sogn og Fjordane | 165 | 12 |
| Borgund, Sogn og Fjordane | 26 | 10 |
| Gartefjellet (wind power), Finnmark | 39 | 150 |
| Other changes | 119 | 508 |
| Net increase in production capacity in 2006 | 410 | 867 |

| | | |
|--|-----|------|
| Expected changes in 2007 | | |
| Hunsfoss, Vest-Agder | 14 | 65 |
| Kårstø (gas power), Rogaland | 420 | 3400 |
| Blåfalli-Vik, Hordaland | 150 | 107 |
| Byrkjelo, Sogn og Fjordane | 13 | 62 |
| Innvik, Sogn og Fjordane | 16 | 55 |
| Funna, Nord-Trøndelag | 11 | 13 |
| Melkøya (gas power), Finnmark | 215 | 1700 |
| Other changes | 106 | 366 |
| Expected net increase in production capacity in 2007 | 945 | 5768 |

The largest power stations in Norway as of 12.31.2006

| Power station | County | Max. capacity (MW) | Mean ann. production (GWh) |
|-----------------------|------------------|--------------------|----------------------------|
| Kvilldal | Rogaland | 1240 | 3517 |
| Sima | Hordaland | 1120 | 3441 |
| Tonstad | Vest-Agder | 960 | 4169 |
| Aurland I | Sogn og Fjordane | 840 | 2419 |
| Saurdal ¹⁾ | Rogaland | 640 | 1300 |
| Rana | Nordland | 500 | 2123 |
| Tokke | Telemark | 430 | 2221 |
| Tyin | Sogn og Fjordane | 374 | 1398 |
| Svartisen | Nordland | 350 | 1996 |
| Brokke | Aust-Agder | 330 | 1407 |
| Evanger | Hordaland | 330 | 1380 |
| Nedre Vinstra | Oppland | 308 | 1206 |
| Skjomen | Nordland | 300 | 1164 |
| Vinje | Telemark | 300 | 1003 |
| Kobbelv | Nordland | 300 | 733 |
| Aura | Møre og Romsdal | 290 | 1774 |

¹⁾ Pumped storage power station

The largest reservoirs in Norway as of 12.31.2006

| Reservoir | County | Max. reservoir capacity | |
|--------------------|--------------------------|-------------------------|------|
| | | mill. m ³ | GWh |
| Storglomvatn | Nordland | 3506 | 4589 |
| Blåsjø | Aust-Agder/Rogaland | 3105 | 7759 |
| Tustervatn-Røsvatn | Nordland | 2363 | 2063 |
| Svartevatn | Vest-Agder/Rogaland | 1398 | 2923 |
| Mjøsa | Hedmark/Oppland/Akershus | 1312 | 337 |
| Akersvatn | Nordland | 1276 | 1531 |
| Vatnedalsvatn | Aust-Agder | 1150 | 1967 |
| Møsvatn | Telemark | 1064 | 2270 |
| Altevatn | Troms | 1027 | 1145 |
| Kalvatn | Nordland | 706 | 847 |

Investment, price indices (1998 =100) and prices

| | 1990 | 1995 | 2000 | 2005 |
|--|------|------|------|------|
| Gross investment in electricity supply (mill. NOK) | 5772 | 4114 | 3915 | 7496 |
| Acquisition of fixed assets (mill. NOK) | | | | |
| - production plants | 1738 | 1180 | 834 | 3818 |
| - transmission lines | 859 | 365 | 269 | 369 |
| - distribution network | 2294 | 2140 | 2160 | 2364 |
| - other | 965 | 987 | 1081 | 1254 |
| Gross investment in % of total domestic investment | 4.6 | 2.2 | 1.4 | 2.1 |
| Repair and maintenance in | | | | |

| | | | | |
|---|------|------|------|------|
| electricity supply (mill. NOK) | 2148 | 1481 | - | - |
| Electricity price index, households | 86 | 93 | 95 | 140 |
| Oil price index, light fuel oil | 76 | 86 | 150 | 208 |
| Consumer price index | 84 | 94 | 106 | 115 |
| Price of electric energy to households (øre/kWh) | 45.7 | 49.7 | 50.4 | 74.8 |
| Price of useful energy ³⁾ for light fuel oil (øre/kWh) | 32.8 | 37.0 | 64.9 | 89.5 |

³⁾ Efficiency rate 0.8

Energy balance 2006 in PJ

| | Total | Coal and coke | Crude oil | Petroleum products | Natural gas and other gases | Water-fall energy | Electricity | Other |
|------------------------------------|-------|---------------|-----------|--------------------|-----------------------------|-------------------|-------------|-------|
| Primary production | 9884 | 67 | 4911 | 661 | 3687 | 507 | - | 51 |
| Imports | 240 | 39 | 16 | 148 | - | - | 35 | 1 |
| Exports | 8601 | 64 | 4232 | 901 | 3372 | - | 32 | 0 |
| Bunkers and stock changes | 47 | - 1 | 12 | 36 | 0 | - | - | - |
| Primary energy supply | 1476 | 43 | 683 | -128 | 314 | 507 | 3 | 53 |
| Conversion | 1241 | 3 | 599 | 121 | 0 | 507 | 2 | 10 |
| Secondary production | 1203 | 7 | - | 695 | 50 | - | 438 | 12 |
| Energy sector own use | 247 | - | - | 5 | 225 | - | 17 | 0 |
| Non-energy use | 68 | - | - | 43 | 25 | - | - | - |
| Statistical differences and losses | 323 | 8 | 85 | 108 | 87 | - | 33 | 2 |
| Final energy consumption | 800 | 40 | - | 291 | 28 | - | 389 | 53 |
| Of which: | | | | | | | | |
| Industry and mining | 286 | 40 | - | 28 | 25 | - | 176 | 17 |
| Transport | 215 | - | - | 212 | 1 | - | 3 | - |
| Other consumer groups | 299 | 0 | - | 51 | 2 | - | 210 | 36 |

District heating 1990 - 2006

| | Unit | 1990 | 1995 | 2000 | 2005 | 2006 |
|------------------------------------|-----------|-------|------|-------|-------|-------|
| Establishments | Number | 21 | 21 | 25 | 38 | 40 |
| Net production of district heating | TJ | 3300 | 4668 | 5777 | 9224 | 9883 |
| Losses | " | 291 | 399 | 531 | 765 | 903 |
| Delivered consumer: | | | | | | |
| Total | " | 3009 | 4269 | 5246 | 8460 | 8980 |
| Households | " | 975 | 977 | 758 | 1422 | 1602 |
| Other | " | 2034 | 3292 | 4488 | 7038 | 7378 |
| Average price (excl. VAT) | øre/kWh | 21.4 | 26.3 | 30.6 | 45.9 | 53.2 |
| Investment | mill. NOK | 195.5 | 75.6 | 236.0 | 750.0 | 893.7 |

Domestic deliveries of petroleum products 1990 - 2006 in mill. liter

| Products | 1990 | 1995 | 2000 | 2005 | 2006 |
|--------------------------|------|------|------|------|------|
| Petrol | 2413 | 2204 | 2189 | 2138 | 2057 |
| Auto-diesel | 1283 | 1622 | 1862 | 2431 | 2650 |
| Kerosene | 213 | 201 | 150 | 130 | 130 |
| Marine gas oil | 1242 | 1323 | 1494 | 1348 | 1433 |
| Light fuel oil | 914 | 736 | 564 | 542 | 571 |
| Heavy fuel oil | 444 | 344 | 193 | 283 | 451 |
| Other petroleum products | 1294 | 1519 | 1654 | 1690 | 1829 |
| Total | 7804 | 7949 | 8106 | 8562 | 9121 |

Production of important forms of energy 1990 - 2006

| | Unit | 1990 | 1995 | 2000 | 2005 | 2006 |
|-------------|-----------------------|--------|--------|--------|--------|--------|
| Coal | 1000 t | 303 | 292 | 632 | 1471 | 2395 |
| Crude oil | Mill. Sm ³ | 94542 | 156776 | 181181 | 148137 | 136577 |
| Natural gas | Mill. Sm ³ | 25479 | 27814 | 49748 | 84963 | 87613 |
| Electricity | GWh | 121848 | 123011 | 142816 | 137811 | 121663 |

Final energy consumption^{*)} 1990 - 2006 in PJ

| | 1990 | 1995 | 2000 | 2005 | 2006 |
|-----------------------|------|------|------|------|------|
| Coal and coke | 49 | 57 | 54 | 44 | 40 |
| Wood and black liquor | 38 | 42 | 50 | 45 | 43 |
| Gases | 4 | 12 | 21 | 24 | 28 |
| Petroleum products | 250 | 257 | 268 | 279 | 291 |
| Electricity | 349 | 374 | 394 | 399 | 389 |
| District heating | 3 | 4 | 5 | 9 | 9 |
| Total | 693 | 746 | 791 | 799 | 800 |

^{*)} Consumption by energy producing industries, consumption for non-energy purposes and losses in transportation and distribution are not included in the figures.

The leading hydropower producing countries in 2005

(Source: IEA)

| Country | Hydropower production | | Total electricity production | |
|-----------|-----------------------|---------------------------------|------------------------------|---------------------------------|
| | TWh | Ann. change 1995-2005 (%) | TWh | Ann. change 1995-2005 (%) |
| China | 397 | 7.6 | 2497 | 9.5 |
| Canada | 364 | 0.8 | 628 | 1.1 |
| Brazil | 337 | 2.9 | 403 | 3.9 |
| USA | 290 | -0.8 | 4268 | 1.8 |
| Russia | 175 | -0.1 | 951 | 1.0 |
| Norway | 137 | 1.2 | 138 | 1.2 |
| India | 100 | 3.2 | 699 | 5.3 |
| Japan | 86 | 0.5 | 1094 | 1.1 |
| Venezuela | 75 | 3.9 | 101 | 3.3 |
| Sweden | 73 | 0.7 | 155 | 0.5 |
| World | 2994 | 1.9 | 18235 | 3.2 |

Energy and electricity consumption for selected countries in 2005

(Source: IEA)

| Country | Total energy consumption ^{*)} | | Electricity consumption ^{**)} | |
|----------------|--|---------------------------------|--|---------------------------------|
| | Per capita (GJ) | Ann. change 1995-2005 (%) | Per capita (kWh) | Ann. change 1995-2005 (%) |
| Canada | 353 | 0.7 | 17307 | 0.5 |
| USA | 330 | 0.1 | 13640 | 0.8 |
| Norway | 291 | 2.4 | 25145 | 0.2 |
| Finland | 279 | 1.4 | 16123 | 1.8 |
| Australia | 250 | 1.4 | 11439 | 2.5 |
| Sweden | 242 | 0.2 | 15430 | 0.0 |
| Russia | 189 | 0.6 | 5786 | 1.0 |
| France | 184 | 0.8 | 7707 | 1.5 |
| Germany | 175 | 0.0 | 7111 | 1.3 |
| Japan | 174 | 0.4 | 8233 | 0.9 |
| New-Zealand | 172 | -0.5 | 9733 | 1.4 |
| United Kingdom | 162 | 0.2 | 6254 | 1.3 |
| Denmark | 152 | -0.6 | 6659 | 0.3 |
| Spain | 140 | 2.4 | 6147 | 4.5 |
| Italy | 132 | 1.2 | 5676 | 2.2 |
| South-Africa | 114 | 0.2 | 4848 | 0.6 |
| Poland | 102 | -0.6 | 3438 | 1.2 |
| Argentina | 69 | 0.2 | 2418 | 4.8 |
| Thailand | 65 | 3.6 | 1950 | 5.8 |
| China | 55 | 4.0 | 1781 | 9.4 |
| Turkey | 49 | 1.7 | 1898 | 5.0 |
| Brazil | 47 | 1.4 | 2013 | 2.4 |
| Egypt | 35 | 3.1 | 1226 | 3.0 |
| Angola | 26 | -0.2 | 142 | 8.1 |
| Vietnam | 26 | 4.2 | 573 | 15.8 |
| Tanzania | 22 | 3.7 | 61 | 1.8 |
| Mosambique | 22 | 1.9 | 467 | 25.3 |
| India | 21 | 0.4 | 480 | 3.3 |
| Pakistan | 21 | 1.1 | 456 | 4.0 |
| World | 75 | 0.9 | 2596 | 1.9 |

^{*)} Total primary energy supply (excl. bunkers)

^{**)} Total domestic consumption (excl. losses in distribution system)

Production and consumption of electric energy

| County | Max. capacity | Production | | Net consumption in 2005 incl. non-priority power | | | | | |
|------------------|------------------|------------|--------|--|---------------------------------|---------------------|---------------------------|----------------------------|---------------------------------|
| | | 12.31.2006 | 2006 | 2005 | Energy intensive industry | General consumption | | | |
| | Total | | | | | Other industries | Services and transport | Households and agriculture | |
| | | | | | | | | Total | Per capita (households only) |
| (MW) | (GWh) | (GWh) | (GWh) | (GWh) | (GWh) | (GWh) | (GWh) | (kWh) | |
| Østfold | 847 | 4647 | 4684 | 405 | 5 508 | 2 516 | 1095 | 1 897 | 6 579 |
| Akershus | 177 | 975 | 990 | 100 | 6 787 | 323 | 2717 | 3 747 | 7 184 |
| Oslo | 15 | 86 | 53 | 64 | 8 758 | 541 | 4514 | 3 703 | 6 977 |
| Hedmark | 528 | 2110 | 2585 | - | 2 900 | 509 | 934 | 1 457 | 6 369 |
| Oppland | 1516 | 5795 | 6029 | - | 3 482 | 791 | 1097 | 1 594 | 6 824 |
| Buskerud | 1965 | 9054 | 9650 | - | 5 284 | 1 928 | 1329 | 2 027 | 6 889 |
| Vestfold | 3 | 15 | 11 | 55 | 3 391 | 470 | 1117 | 1 804 | 7 374 |
| Telemark | 2542 | 12789 | 13101 | 2 442 | 3 301 | 1 059 | 878 | 1 364 | 7 495 |
| Aust-Agder | 1160 | 4219 | 4321 | 269 | 1 527 | 250 | 501 | 776 | 6 762 |
| Vest-Agder | 2059 | 9255 | 9454 | 3 524 | 2 323 | 420 | 764 | 1 139 | 6 512 |
| Rogaland | 3358 | 11971 | 12696 | 5 072 | 5 810 | 837 | 1846 | 3 127 | 7 008 |
| Hordaland | 3848 | 14213 | 20103 | 3 987 | 6 083 | 435 | 2212 | 3 436 | 7 217 |
| Sogn og Fjordane | 3703 | 12656 | 15795 | 5 700 | 1 587 | 247 | 521 | 819 | 6 555 |
| Møre og Romsdal | 1475 | 6075 | 7885 | 5 978 | 3 610 | 669 | 1118 | 1 823 | 6 874 |
| Sør-Trøndelag | 1065 | 4481 | 5467 | 1 329 | 4 034 | 288 | 1680 | 2 066 | 6544 ¹⁾ |
| Nord-Trøndelag | 715 | 2593 | 3609 | 470 | 3 619 | 1 943 | 625 | 1 051 | 6544 ¹⁾ |
| Nordland | 3240 | 16232 | 16627 | 5 535 | 4 200 | 712 | 1357 | 2 131 | 8 462 |
| Troms | 565 | 2789 | 2848 | 576 | 2 670 | 234 | 1002 | 1 434 | 8 865 |
| Finnmark | 393 | 1647 | 1840 | - | 1 395 | 81 | 592 | 722 | 9 378 |
| Svalbard | 20 | 66 | 65 | - | 59 | 7 | 22 | 30 | - |
| Total Norway | 29196 | 121663 | 137811 | 35506 | 76325 | 14261 | 25917 | 36147 | 7108 |

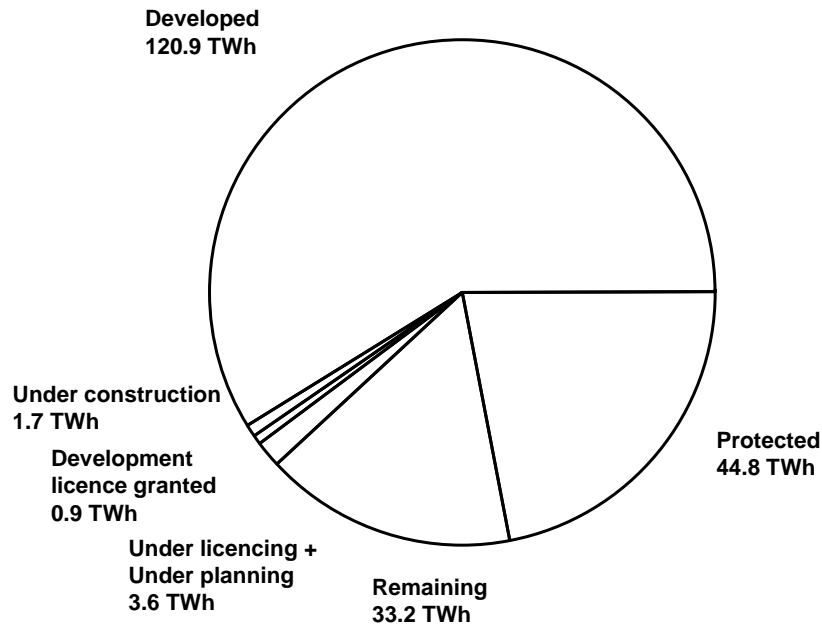
¹⁾ Total Sør- and Nord-Trøndelag

Production and consumption of electric energy 1985 - 2005 in GWh

| | 1985 | 1990 | 1995 | 2000 | 2004 | 2005 | Ann. Change 1995-2005 (%) |
|--|--------|--------|--------------------|---------------------|--------------------|--------------------|---------------------------------|
| Hydropower production | 102946 | 121382 | 122487 | 142289 | 109291 | 136452 | 1.1 |
| + Thermal and wind power production | 346 | 466 | 524 | 527 | 1181 | 1359 | |
| = Total production | 103292 | 121848 | 123011 | 142816 | 110472 | 137811 | 1.1 |
| + Imports | 4083 | 334 | 2300 | 1474 | 15334 | 3653 | |
| - Exports | 4627 | 16241 | 8962 | 20529 | 3842 | 15695 | |
| = Gross consumption (total) | 102748 | 105941 | 116349 | 123761 | 121964 | 125769 | 0.8 |
| - Pumped storage power | 804 | 339 | 1367 | 673 | 728 | 1091 | |
| - Electric boilers | 4821 | 6670 | 7514 ¹⁾ | 10518 ¹⁾ | 4869 ¹⁾ | 5592 ¹⁾ | |
| - Losses | 10013 | 7894 | 10018 | 12173 | 11614 | 12846 | |
| = Net consumption, firm power | 87110 | 91038 | 97450 | 100397 | 104753 | 106240 | 0.9 |
| - Energy intensive industry | 30030 | 29584 | 28369 | 30521 | 34646 | 34984 | 2.1 |
| = General consumption | 57080 | 61454 | 69081 | 69876 | 70107 | 71256 | 0.3 |
| Of which: | | | | | | | |
| Households and agriculture | 29960 | 30864 | 35587 | 35685 | 33847 | 35404 | - 0.5 |
| Pulp and paper industry, mining and other industry, construction site power | 12488 | 13903 | 14115 | 12731 | 14695 | 13299 | - 0.6 |
| Services and transport | 14632 | 16687 | 19379 | 21460 | 21565 | 22553 | 1.5 |
| General consumption adjusted for temperature conditions | 54973 | 64565 | 69557 | 73882 | 73081 | 74360 | 0.7 |

¹⁾ Non-priority power

Hydropower potential as of 12.31.2006 (mean annual production)



Useful energy excluding energy intensive industry and transport

