

Development of the Czech Republic

Fuel and energy economy

from 1990

Development of the primary energy sources

Energy inputs into the Czech Republic national economy were permanently decreasing from 1990 till 1994. This degressive tendency was interrupted in 1995 and 1996, when primary energy sources (PES) increase occurred.

In 2007, after their drop in 1999 (to 78.1% of their level in 1990), the primary energy sources reached 90.4% of their level in 1990. Primary Energy Sources (PES) increase in 2003 was caused, above all, by the first block of nuclear power station Temelin launching (heat produced from fuel cells).

| Y E A R | Primary Energy Sources PJ | Index 1990 = 100 |
|---------|------------------------------|---------------------|
| 1990 | 2076 | 100,0 |
| 1995 | 1749 | 84,2 |
| 1996 | 1823 | 87,8 |
| 1997 | 1745 | 84,1 |
| 1998 | 1659 | 79,9 |
| 1999 | 1621 | 78,1 |
| 2000 | 1657 | 79,8 |
| 2001 | 1693 | 81,6 |
| 2002 | 1703 | 82,0 |
| 2003 | 1816 | 87,5 |
| 2004 | 1850 | 89,1 |
| 2005 | 1856 | 89,4 |
| 2006 | 1879 | 90,5 |
| 2007 | 1877 | 90,4 |

National economy dependence on energy sources imports has further been increasing till 1998 (47% of Primary Energy Sources), in 2000 this dependence dropped to 44% and in 2007 amounted to 45.5%. In 1990 the share of imports in primary energy sources corresponded to 32.1% and in 1995 to 41.5%.

Dependence on import (active balance share of import-export in Primary Energy Sources) amounted to 25.1% of PES in 2007. In 1995 it amounted to 18.8% of PES and in 2000 to 23.7% of PES.

The rate of the CR energy independence (share of indigenous production in Primary Energy Sources) in 1995 corresponded to 80.6% in 2000 to 75.3% and in 2007 to 72.7%.

Onward structure change, in favour of noble kinds of energy, became evident in reduction

of solid fuels share in primary energy sources from 64.9% in 1990 and 57.4% in 1995 to 50.7% in 1999. It increased again in 2000 up to 54.7% and amounted 50.5% in 2007. The volume of used solid fuels was reduced in this period (from 1990 till 2007) by 29.6%. On the contrary, the natural gas share in primary energy sources increased. From 10.8% in 1990 to 15.6% in 1995 and to 15.8% in 2007.

In the publication there are presented some preliminary data for 2008, too. Within the frame of this analysis, these figures are not commented above all and because of their incompleteness.

Processes of fuels upgrading, heat and electricity production

Gross efficiency of energy products production in fuels upgrading processes increased from 80.7% in 1990 to 81.7% in 2007. At the same time, from 1990 to 2007, total amount of fuels used for these purposes was reduced by 142 PJ (by 16.2%).

Less efficient processes limitation, as generator gas (gas works gas) production in industrial coal gasification plants and briquettes, coke-oven coke and liquid fuels production became evident here in 2007.

In 1990, the electric energy production in the CR equalled to 62 558 GWh. After marked drop in production from 1991 till 1994 there was produced 60 847 GWh of electric energy in 1995 and rise in production during next years kept on. In 2007, there was produced 88 199 GWh of electric energy.

Final fuels and energy consumption

Final consumption of fuels and energy used in national economy including households consumption decreased in 2007, in comparison with 1990, from 1303.2 PJ (62.8% of Primary Energy Sources) to 1 127.5 PJ (60.1% of Primary Energy Sources), i.e. by 175.7 PJ.

At this time the final energy consumption structure gradually changed in favour of noble kinds of energy at lowering the solid fuels consumption. While in 1990 the final consumption of solid fuels equalled to 27.5%, in 2007 it was 15.8% of the total final consumption.

Its weight has been transferred, above all, to natural gas - its share in total final consumption increased from 13.6% in 1990 (incl. town gas) to 23% in 2003, i.e. by 9.4%.

(In 2007 the natural gas share equalled to 20.6%).

Electric energy share in the final consumption increased during these years by 3.1% - from 13.5% in 1990 to 17.9% in 2007.

In the final consumption structure by sectors there the industry share equalled to 48, 0% in 1990, 43.7% in 1996 and 39.6% in 2007. On the other hand, transport share increased up to 24.6% in 2007.

The households consumed 330.2 PJ in 1990 (25.4% of the final consumption).

Their consumption decreased during following years to 250.7 PJ in 1995 (22.9% of the final consumption) and in 2007 to 247.2 PJ (i.e. 21.9% of the final consumption).

The structure of individual fuels kinds substitution was markedly changed at households

final consumption (in % of the total final consumption) :

| | 1990 | 1995 | 1998 | 2007 |
|----------------------|-------------|-------------|-------------|-------------|
| Solid Fuels | 47,1 | 33,0 | 21,5 | 27,9 |
| Liquid Fuels | 12,8 | 0,0 | 0,2 | 0,2 |
| Gaseous Fuels | 15,0 | 28,9 | 37,5 | 34,9 |
| Heat | 15,8 | 16,8 | 19,2 | 15,6 |
| Electricity | 9,3 | 21,3 | 21,6 | 21,3 |
| Total | 100,0 | 100,0 | 100,0 | 100,0 |

Energy demandingness (intensity) of the national economy (GDP)

Energy demandingness (intensity) of the CR national economy, represented by means of the primary energy sources consumption to thousand CZK of the gross domestic product (at 2000 constant prices), developed as follows:

| YEAR | GDP cp00 mill. CZK | PES PJ | Energ.dem.GDP GJ/th. CZK00 | Index 1990=100 |
|-------------|-------------------------------|-------------------|---------------------------------------|---------------------------|
| 1990 | 2 134 177 | 2 076,100 | 0,973 | 100,00 |
| 1991 | 1 886 612 | 1 937,500 | 1,027 | 105,57 |
| 1992 | 1 877 179 | 1 788,700 | 0,953 | 97,95 |
| 1993 | 1 879 056 | 1 749,500 | 0,931 | 95,71 |
| 1994 | 1 920 396 | 1 683,900 | 0,877 | 90,14 |
| 1995 | 2 033 699 | 1 749,400 | 0,860 | 88,43 |
| 1996 | 2 115 605 | 1 823,300 | 0,862 | 88,59 |
| 1997 | 2 100 143 | 1 744,700 | 0,831 | 85,40 |
| 1998 | 2 084 203 | 1 658,800 | 0,796 | 81,82 |
| 1999 | 2 112 121 | 1 621,000 | 0,767 | 78,89 |
| 2000 | 2 189 169 | 1 656,660 | 0,757 | 77,79 |
| 2001 | 2 242 943 | 1 693,089 | 0,755 | 77,60 |
| 2002 | 2 285 488 | 1 703,326 | 0,745 | 76,61 |
| 2003 | 2 367 818 | 1 815,851 | 0,767 | 78,83 |
| 2004 | 2 474 006 | 1 849,515 | 0,748 | 76,85 |
| 2005 | 2 630 273 | 1 855,737 | 0,706 | 72,53 |
| 2006 | 2 808 784 | 1 879,334 | 0,669 | 68,78 |
| 2007 | 2 975 921 | 1 877,339 | 0,631 | 64,85 |

From 1991, energy demandingness (intensity) of the gross domestic product formation had, with exception of 1996, a down tendency. In 2003, there occurred a slight increase due to heat amount produced in nuclear power plant Temelin and onwards it has its downward tendency again.