

# 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 increase occurred.

In 2004, after their drop in 1999 (to 78.1% of their level in 1990), the primary energy sources reached 89.1% 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

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 2006 amounted to 46.9%. In 1990 the share of imports on 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 27.4% in 2006. In 1995 it amounted to 18.8% and in 2000 to 23.7%.

The rate of the CR energy independence (share of indigenous production on Primary Energy Sources) in 1995 corresponded to 80.6% in 2000 to 75.3% and in 2006 to 72.6%.

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 54.7% in 2000 and to 48.7% in 2006. The volume of used solid fuels was reduced in this period (from 1990 till 2006) by 33.2%. On the contrary, the natural gas share in primary energy sources increased. From 10.8% in 1990 to 15.6% in 1995 and to 17.3% in 2006. In the publication there are presented some preliminary data for 2007, 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 81.9% in 2006. At the same time, from 1990 to 2006, total amount of fuels used for these purposes was reduced by 119 PJ (by 16.4%).

Less efficient processes limitation, as generator gas (gas works gas) production in industrial coal gasification plants and mazout gasification, became evident here. (This production has not been reported from 2000.)

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 2006, there was produced 84 361 GWh of electric energy. From 1990 till 2006, efficiency in electricity production increased from 33.9% to 34.6%.

### **Final fuels and energy consumption**

Final consumption of fuels and energy used in national economy including households consumption decreased in 2006, in comparison with 1990, from 1303.2 PJ (62.8% of Primary Energy Sources) to 1 146.9 PJ (61.1% of Primary Energy Sources), i.e. by 156.3 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 2006 it was 16.0% 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 2006 the natural gas share equalled to 21.5%).

Electric energy share in the final consumption increased during these years by 3.9% - from 13.5% in 1990 to 17.4% in 2006.

In the final consumption structure by sectors there the industry share equalled to 48, 0% in 1990, 43.7% in 1996 and 40.0% in 2006. On the other hand, transport share increased up to 22.8% in 2006.

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

Their consumption decreased during following years to 250.7 PJ in 1995 (22.9% of their final consumption) and in 2006 to 273.8 PJ (i.e. 23.9% of the final consumption).

The structure of individual fuels kinds substitution was markedly changed at households final consumption (in % of the total final consumption) :

	<b>1990</b>	<b>1995</b>	<b>1998</b>	<b>2006</b>
<b>Solid Fuels</b>	47,1	33,0	21,5	27,6
<b>Liquid Fuels</b>	12,8	0,0	0,2	0,2
<b>Gaseous Fuels</b>	15,0	28,9	37,5	35,2
<b>Heat</b>	15,8	16,8	19,2	17,0
<b>Electricity</b>	9,3	21,3	21,6	20,0
<b>Total</b>	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:

<b>YEAR</b>	<b>GDP cp00 mill. CZK</b>	<b>PES PJ</b>	<b>Energ.dem.GDP GJ/thś. CZK00</b>	<b>Index 1990=100</b>
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	2 631 670	1 855,737	0,705	72,49
2006	2 799 044	1 878,713	0,671	69,00

From 1991, energy demandingness (intensity) of the gross domestic product formation had 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.