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## **Energetika**

CENIA, česká informační agentura životního prostředí  
2008

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## KEY MESSAGES

Electricity and heat generation and consumption negatively impact the environment and represent a major human contribution to global climate change. Since 1990, energy sector emissions in the Czech Republic have significantly dropped; nevertheless, the energy sector remains one of the industries that most strongly impacts the environment, since as much as 66% of all greenhouse gas emissions come from stationary sources.

The main source for electricity generation in the Czech Republic is lignite (66%), followed by nuclear power (30%).

Energy generation from renewable energy sources has increased by approximately 10% on a year-to-year basis in the Czech Republic, but the share of all energy from renewable energy sources is less than 3.8%.

The Czech Republic's objective resulting from its commitments with the EU is to achieve an 8% share of electricity generated from renewable energy sources in domestic electricity generation by 2010. A 4.7% share was achieved in 2007.

The relatively high energy intensity of the Czech economy and the large proportion of fossil energy sources for generating electricity negatively impact the environment.

The EU target is to achieve a 20% increase in energy efficiency, a 20% decrease in CO<sub>2</sub> emissions and a 20% share of renewable energy sources.



## REFERENCES AND OTHER INFORMATION

- ☉ CENIA, the Czech Environmental Information Agency – <http://www.cenia.cz>
- ☉ Ministry of the Environment (MoE) – <http://www.mzp.cz>
- ☉ Ministry of Industry and Trade (MIT) – <http://www.mpo.cz>
- ☉ Energy Regulatory Office (ERO) – <http://www.ero.cz>
- ☉ Czech Statistical Office (CSO) – <http://www.czso.cz>
- ☉ Everything you want to know about energy, but are afraid to ask – <http://www.energetika.cz>
- ☉ Construction, technological equipment for buildings and energy savings – <http://www.tzb-info.cz>
- ☉ Information about electricity generation, distribution and use – <http://www.energetik.cz>
- ☉ RES catalogue – <http://www.zdrojeenergie.cz>
- ☉ Alternative fuels for transportation – <http://www.hybrid.cz>
- ☉ Energy saving appliances – <http://www.usporiespotrebice.cz>
- ☉ The EU and energy – <http://www.europa.eu/pol/ener>



### THE ENVIRONMENT OF THE CZECH REPUBLIC

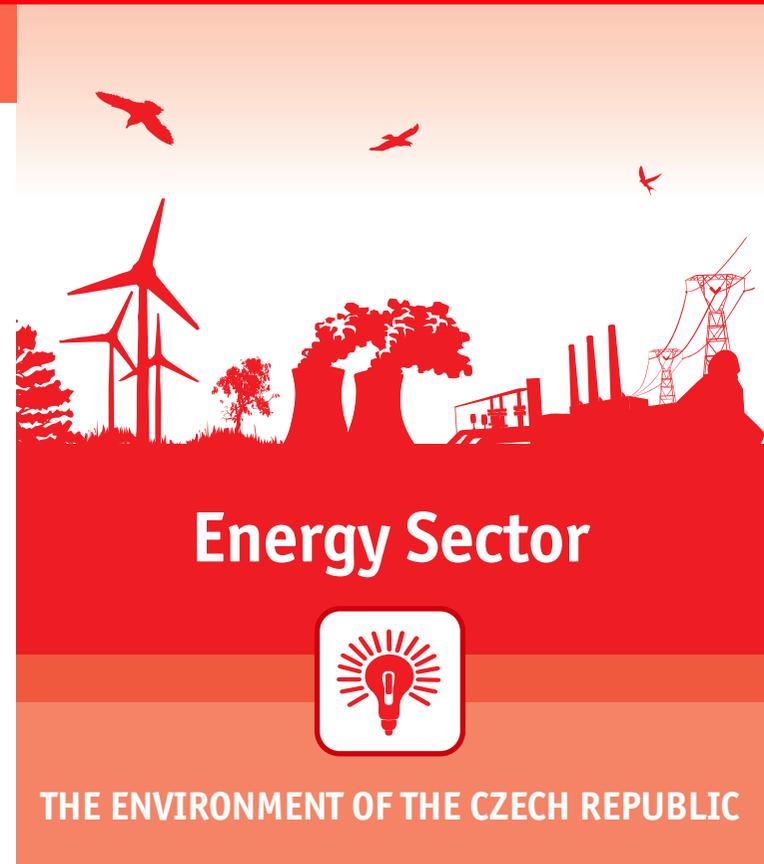
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# Energy Sector



## THE ENVIRONMENT OF THE CZECH REPUBLIC



STATE ENVIRONMENTAL  
FUND OF THE  
CZECH REPUBLIC

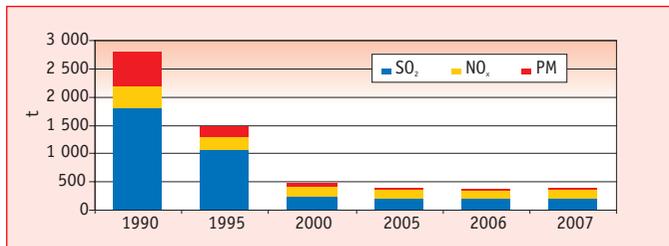


## THE DEVELOPMENT OF ENERGY SECTOR EMISSIONS

The state of the Czech Republic's environment has been affected by the state and development of the energy sector. During the 1990s, the energy sector underwent major changes related to reducing its environmental impact. Between 1990 and 2007, emissions of SO<sub>2</sub> from the energy sector dropped by 88%, NO<sub>x</sub> by 60% and particulate matters (PM) by 96% in the Czech Republic. This significant decrease in emissions was achieved because of the installation of modern desulphurizers and flue-dust separators, as well as the modernisation of boilers and technological changes.

### ☉ The emissions of selected pollutants from fuel combustion in stationary energy sources in the Czech Republic [tonnes], 1990–2007

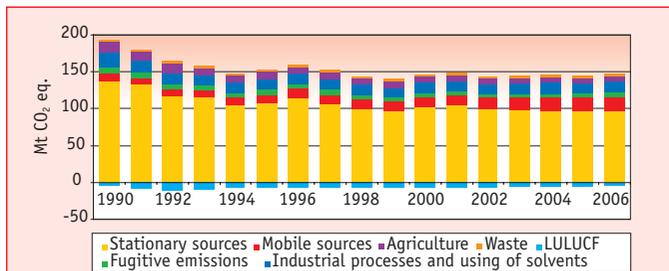
Source: Czech Hydrometeorological Institute



Nevertheless, the energy sector remains an industry that significantly impacts the environment, with more than 80% of all greenhouse gas emissions originating here. Nevertheless, according to the methodology applied by the Czech Hydrometeorological Institute, this value also includes emissions from the manufacturing industry, transportation, services, households and fugitive emissions from fuels.

### ☉ The development of emissions and slumps in greenhouse gas emissions by sector in the Czech Republic [Mt CO<sub>2</sub> eq.], 1990–2006

Source: Czech Hydrometeorological Institute



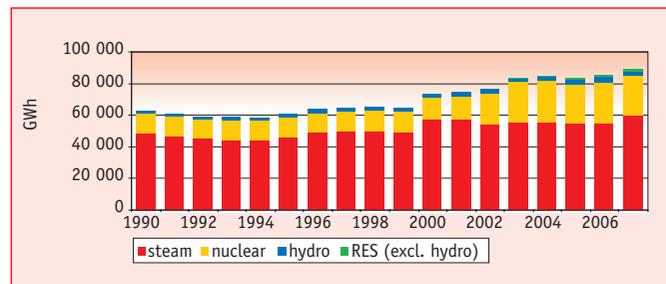
LULUCF (Land Use, Land Use Change and Forestry Activities) – consumption of CO<sub>2</sub> by photosynthetic assimilation into soil and the ocean.

## ENERGY SOURCES STRUCTURE

The structure of primary energy source consumption is important to the environment. In the Czech Republic, steam power plants (burning mainly lignite) generate approximately 66% of all electricity, followed by nuclear power plants generating 30% of all electricity. In 2007, renewable energy sources (RES) accounted for approximately 3.9% of gross domestic electricity generation. Recently, about one-fifth of all generated electricity has been exported (19.8% in 2007).

### ☉ Electricity generation in the Czech Republic by power plant type [GWh], 1990–2007

Source: Czech Statistical Office, Ministry of Industry and Trade

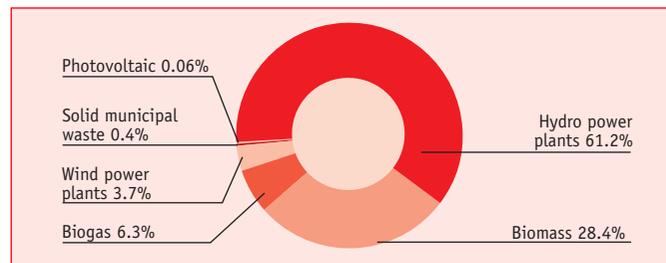


## RENEWABLE ENERGY SOURCES (RES)

Electricity generated from renewable energy sources have recently increased by 10% on a year-to-year basis in the Czech Republic. In 2007, the total share of electricity generated from RES was 4.7% of gross electricity generation; a target of 8% for electricity made from RES was set for 2010.

### ☉ The structure of electricity generated from RES and waste in the Czech Republic [%], 2007

Source: Ministry of Industry and Trade



## ENERGY PRODUCTION AND CONSUMPTION IN THE CZECH REPUBLIC AND THE EU

After the major decrease in energy consumption in the 1990s caused by economic transformation, demand for electricity started to gradually increase after 2000 in conjunction with economic growth. This is also related to increasing electricity consumption. The reasons are growing production, transportation loads and household consumption. The Czech Republic is characterised by a relatively high energy intensity of its economy. In spite of the fact that energy consumption per GDP has been gradually decreasing, the Czech economy is one of the most energy-intensive in the European Union. This is caused by a higher share of industrial production per GDP; a large energy saving potential is hidden in buildings, as well as other areas of energy consumption.

## THE CZECH PRESIDENCY

A sustainable and safe energy sector and climate protection have become some of the priorities of the Czech EU presidency. The objective is to adopt a "climate-energy package" that will implement measures for achieving these targets and to succeed in negotiations at a global convention on CO<sub>2</sub> emissions reduction after 2012 when the Kyoto Protocol expires.

## ENERGY POLICY TARGETS

Similarly to other EU countries, the Czech Republic is mainly dealing with the following issues related to the energy sector:

- ☉ Climate protection – electricity and heat generation and consumption are main CO<sub>2</sub> emissions sources and finding a solution to this global issue is not possible without a significant reduction in emissions.
- ☉ Air pollution and other major environmental damage due to energy generation, transport and consumption.
- ☉ Energy security and dependence on energy imports – imports from other countries account for more than 50% of all consumed energy in the EU countries, and this proportion has been growing.
- ☉ Excessive use of unrenovable energy sources.
- ☉ A year-to-year increase in electricity and fuel prices by dozens of percentage points.

The EU responded to the above issues by setting targets with the following consequences for the Czech Republic:

- ☉ An increase in energy efficiency in the areas of generation and consumption by 20% before 2020.

A mid-term programming document in the Czech Republic is the National Programme of Efficient Energy Management and the Use of Its Renewable and Secondary Sources for 2006–2009. The objective of the programme is to ensure an average year-to-year drop in energy intensity by at least 2.6% and an average year-to-year growth in energy efficiency by at least 2.1%. A positive fact is that energy consumption per production unit has been sharply decreasing during the current period of current economic growth. However, this decrease has been relatively slow, so that consumption per production unit is almost double that of the other EU15 countries.

- ☉ A reduction in greenhouse gasses by at least 20% compared to the 1990 level before 2020.

The share of emissions decrease seems to be adequate with respect to the environmental benefits of industrial restructuring and a large potential of energy efficiency increasing, in particular the planned modernisation of thermal power plants and heat plants.

- ☉ A decrease in energy dependence, the diversification of sources and an increase in the share of domestic and small, local and renewable sources. The objective is to achieve a 13% share of energy made from RES per final consumption before 2020.

Energy generation from RES has been increasing by approximately 10% in the Czech Republic every year; in 2007, the total share of RES was almost 5%.

- ☉ An increase in the use of bio-fuels in transportation by at least 10% before 2020 (one condition is the use of second generation bio-fuels that are not made from raw materials from the food industry).

An obligation to add 2% of rapeseed oil methyl esters into diesel oil and 2% of bio-alcohol into petrol exists in the Czech Republic; effective January 2009, these figures shall increase to 4.5% for rapeseed oil methyl esters and 3.5% for bio-alcohol.

## SUPPORT PROGRAMMES

Energy saving and RES projects can apply for support from the below-listed programmes in the Czech Republic:

- ☉ The programme of the State Environmental Fund for environmentally-friendly heating in households – <http://www.sfzp.cz>
- ☉ Operational Programme Environment – <http://www.opzp.cz>
- ☉ The EFEKT programme – energy savings and RES – <http://www.mpo-efekt.cz>
- ☉ The EKO-ENERGIE programme for SMEs – <http://www.czechinvest.org/eko-energie>
- ☉ The PANEL programme – <http://www.sfrb.cz>