



národní  
úložiště  
šedé  
literatury

## Ovzduší

CENIA, česká informační agentura životního prostředí  
2008

Dostupný z <http://www.nusl.cz/ntk/nusl-295557>

Dílo je chráněno podle autorského zákona č. 121/2000 Sb.

Licence Creative Commons Uveďte původ 4.0

Tento dokument byl stažen z Národního úložiště šedé literatury (NUŠL).

Datum stažení: 20.04.2024

Další dokumenty můžete najít prostřednictvím vyhledávacího rozhraní [nusl.cz](http://nusl.cz) .



## KEY MESSAGES

Emissions from basic pollutants significantly dropped in the Czech Republic between 1990 and 2007. Today, it is mainly emissions from "difficultly regulated" sources (such as local furnaces and mobile sources).

The Czech Republic will most likely comply with the national emission ceilings for sulphur dioxide, volatile organic compounds (VOC) and ammonia by 2010. Nevertheless, there might be problems with meeting the national emission ceiling for nitrogen oxides.

Currently, the main problems of air pollution include pollution from suspended (dust) particulate matters, ground-level ozone and polycyclic aromatic hydrocarbons (PAH).

Above-limit ground-level ozone concentrations are repeatedly measured in most parts of the Czech Republic. Exceeding the long-term pollution limit in 2007 was reported in every EU27 state.

Air pollution from suspended particulate matters and PAH is problematic, especially in areas affected by excessive industrial production and transportation, as well as small settlements. A major percentage of the Czech population is annually exposed to above-limit concentrations of suspended particulate matters (PM<sub>10</sub>) and PAH (expressed as benzo(a)pyrene).



## REFERENCES AND OTHER INFORMATION

- More information about the emissions balance and air quality in the Czech Republic  
**Czech Hydrometeorological Institute** – <http://www.chmi.cz>
- Information about the health impact of air pollution  
**National Institute of Public Health** – <http://www.szu.cz>
- Legal regulations related to air protection  
**Ministry of the Environment** – <http://www.mzp.cz>
- Subsidies for eliminating emissions and improving air quality  
**Operational Programme Environment** – <http://www.opzp.cz>
- Air pollution in Europe  
**The European Environment Information and Observing Network (EIONET)** – <http://air-climate.eionet.europa.eu>
- Comprehensive information about the environment in Europe  
**European Environmental Agency** – <http://www.eea.europa.eu>,  
– <http://local.cs.eea.europa.eu>



### THE ENVIRONMENT OF THE CZECH REPUBLIC

© 2008, CENIA, the Czech Environmental Information Agency

**Translation:** Lucie Krágllová

**Graphic design:** Daniela Řeháková

**Print:** Studio Press s.r.o.

**Contact:**

CENIA, the Czech Environmental Information Agency

Litevská 8, 100 05 Praha 10

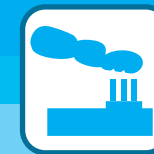
[www.cenia.cz](http://www.cenia.cz), [info@cenia.cz](mailto:info@cenia.cz), tel: +420 267 225 340

This publication was made with the financial assistance of the State Environmental Fund of the Czech Republic.

*Printed on chlorine-free paper.*



# Air



## THE ENVIRONMENT OF THE CZECH REPUBLIC



cenia



STATE ENVIRONMENTAL  
FUND OF THE  
CZECH REPUBLIC



## EMISSIONS OF BASIC POLLUTANTS

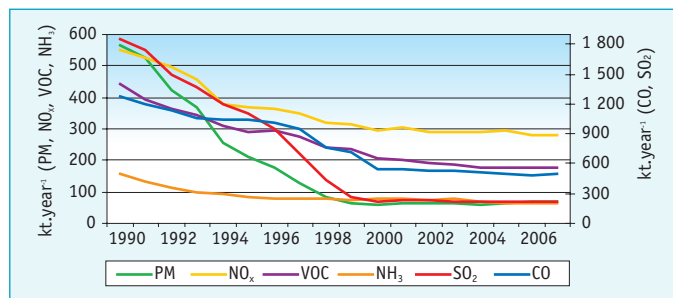
In the Czech Republic, the basic pollutants include particulate matters (PM), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC) and ammonia (NH<sub>3</sub>). Information about emissions of the above pollutants is registered in the REZZO database (The Register of Emissions and Air Pollution Sources). Restructuring the national economy, tightening legal regulations and subsequently implementing air protection measures (the desulphurization, denitrification and dust elimination of main sources and the replacement of fuels) resulted in a substantial drop in emissions from all pollutants during the 1990s, namely by 50% (NO<sub>x</sub>) to almost 90% (PM, SO<sub>2</sub>). Currently, the increasing emissions of PM and NO<sub>x</sub> from mobile and small sources („difficultly regulated“) sources are problematic.

Pursuant to Directive 2001/81/EC of the European Parliament and the Council, national emission ceilings are set in the Czech Republic for NO<sub>x</sub>, SO<sub>2</sub>, VOC and NH<sub>3</sub> for 2010.

With respect to the current unsatisfactory state of the air quality, the Czech Republic also adopted measures to reduce air pollution from suspended particulate matters PM<sub>10</sub> and PM<sub>2.5</sub>, benzo(a)pyrene and NO<sub>x</sub>. An emissions ceiling for PM<sub>2.5</sub> will be probably set for 2020. Stemming from the emissions projection issued by the Czech Hydrometeorological Institute, the Czech Republic will most likely comply with the emissions ceilings by 2010; certain problems can be expected with the emissions ceiling for nitrogen oxides.

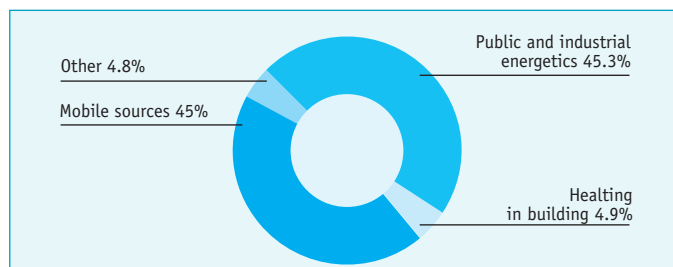
### ◉ The trend of selected pollutant emissions in the Czech Republic [kt.year<sup>-1</sup>], 1990–2007

Source: Czech Hydrometeorological Institute



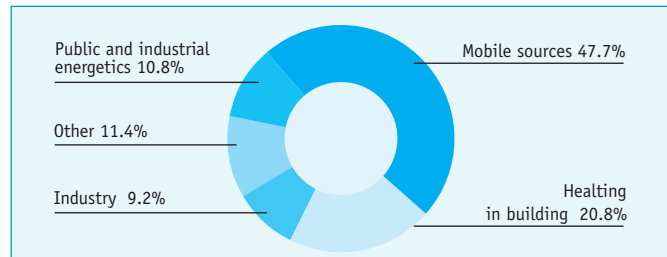
### ◉ Shares of pollution sources in NO<sub>x</sub> emissions in the Czech Republic [%], 2007

Source: Czech Hydrometeorological Institute



### ◉ Proportion of sources in PM emissions in the Czech Republic [%], 2007

Source: Czech Hydrometeorological Institute



## AIR QUALITY

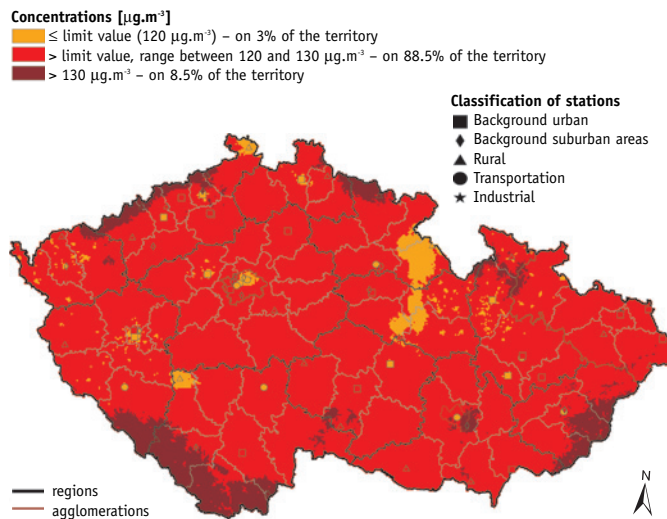
During the 1990s, reduced air pollution levels from sulphur oxide, suspended particulate matters and nitrogen oxides was seen in the Czech Republic. However, at the turn of century, this decreasing trend stopped and the concentrations of the above air pollutants have either been stagnating or slowly increasing. Occasional fluctuations are mainly caused by meteorological and dispersion conditions.

The main current air quality problems include air pollution from suspended particulate matter, tropospheric ozone and PAH (expressed as benzo(a)pyrene).

Above-limit concentrations of ozone are repeatedly reported in most parts of the Czech Republic. Between 2001 and 2007 (the moving average for a three-year period) it was 70–97% of the Czech Republic. In 2007, 85% of the Czech population was exposed to above-limit concentrations of ozone.

### ◉ Zones with the 26th highest maximum daily 8-hour moving average of ozone concentration for 3 years, 2005–2007

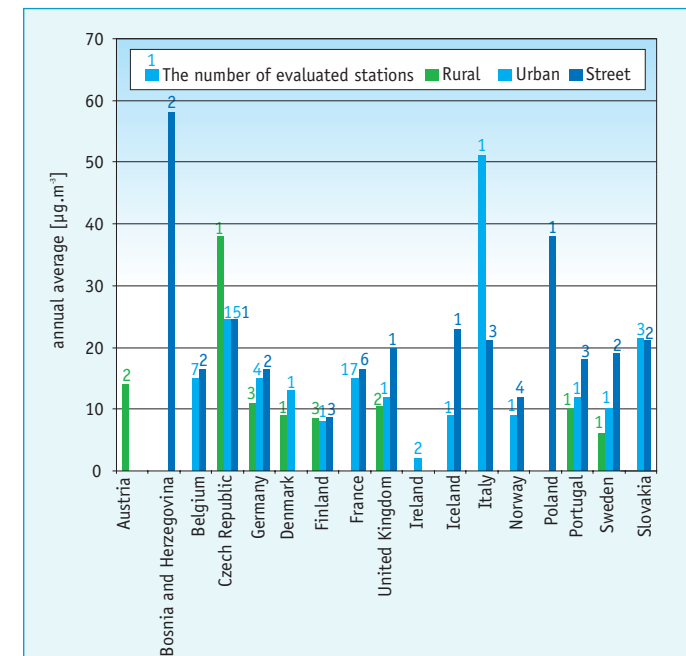
Source: Czech Hydrometeorological Institute



Air pollution from suspended particulate matters and PAH is problematic, especially in areas affected by excessive industrial production and transportation, as well as small settlements with households that use solid fuels during the winter. The majority of the Czech Republic's population is annually exposed to the effects of above-limit concentrations of PM<sub>10</sub> suspended particulate matter – between 2001 and 2007 it was 25–67% of the population. In 2007, when the air quality generally improved because of meteorological conditions, the 24-hour pollution limit for health protection was not observed in 6.3% of the Czech Republic and 32% of the people were exposed to above-limit concentrations. As far as PAH is concerned, the target pollution limit for benzo(a)pyrene was exceeded in 4.9% of the Czech Republic, in which 51% of the people lived in 2007.

### ◉ PM<sub>2.5</sub> concentrations [ $\mu\text{g}\cdot\text{m}^{-3}$ , annual average] in selected European states, 2004

Source: EEA (European Environmental Agency)



The absence of some types of stations in individual countries does not mean that the said problems of these areas (countryside, urban and transport) are of no concern, however, the monitoring outputs in these areas have not been evaluated.

It is estimated that because of the negative impacts of PM<sub>10</sub> on human health, the average life expectancy decreased by 9 months in the EU27 countries in 2007. The most affected areas in the Czech Republic is the eastern part of the Moravia Silesia Region, Prague, Brno and most large cities.

The most affected areas in the EU include Benelux, Poland, the Czech Republic, Hungary, Italy (the Po lowlands) and southern Spain. The highest concentration in cities were measured in Belgium, Bulgaria, the Czech Republic, Greece, Hungary, Italy, Luxembourg, the Netherlands, Poland, Portugal, Romania, Spain and the Baltic States.