Czech Republic Air Quality Catalogue

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Goals	**Status**	**Current Policies & Programmes**
GENERAL OVERVIEW	**Overall situation with respect to air quality in the country, including key air quality challenges**: ● Immense funds were invested in emission reductions (mainly from large power plants) in the Czech Republic during the 1990s, resulting in a marked improvement in the air quality. ● Emissions from basic pollutants significantly dropped in the Czech Republic between 1990 and 2013 ● Major source of PM pollutants is households burning wood, coal or waste for heating. Next comes industry and transport. ● Other pollutants of greatest concern include ground level ozone and polycyclic aromatic hydrocarbons (PAH). ● Air pollution from PM and PAH is problematic, especially in areas affected by excessive industrial production and transportation, or in countryside households with low quality heating. ● A major percentage of the Czech urban population is annually exposed to above-limit concentrations of PM10 and PAH ● A national paper on air quality estimated life year loss (YOLL) of 118,200 which translates to every adult person loosing 5.3 days of life as a result of exposure to pollution. WHO estimated that outdoor air pollution causes 1700 premature deaths annually[1]	● Since Czech Republic is a member state of the European Union, its air quality regulations are supposed to be in line with the European legislation on air quality. **National Air Quality Policy**: ● The Ministry of the Environment developed a National Emission Reduction Programme of the Czech Republic in 2007 to be reviewed every four years. The programme has been approved by the Government. The paper comprises several key measures to contribute to an improvement in the current state of the environment and environmental and health protection. **Air Quality legislation / programmes**: ● Air Protection Act 201/2012, EIA, Integrated Prevention ● Energy Economy Act 406/2000, Supported Energy Sources Act 165/2012, Road Transport Act 56/2001, Local Planning and Construction Terms ● National Policy on the Environment 2012-2020 ● National Emissions Reduction Programme, Mid-Term Strategy on Improving Air Quality 2020

[1] WHO, 'WHO | Country Profiles of Environmental Burden of Disease', *WHO*, 2008 <http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/#T>.

	Air quality monitoring system: ● legal framework + registry of big stationary sources + network of monitoring stations + governance and reporting by Czech Hydrometeorological Institute[2]	
REDUCE EMISSIONS FROM INDUSTRIES	**Industries that have the potential to impact air quality**: ● Air pollution from industrial installations emanates from the following: power generation, motor vehicles, metallurgy, machinery and equipment, glass, armaments among others **GDP of country**: PPP USD 325.3b (50th) estimate for 2015[3] **Industries' share of GDP**: 32.6%[4] **Electricity sources**: ● Out of the 86 bill. kWH of generated electricity in 2014, 47.3% was generated from fossil fuel (coal), 35.2% nuclear and 11.2% from renewables. The Czech Republic exported 20% of this electricity.[5] ● According to the Czech Republic's State Energy Policy, coal will remain the country's primary energy source in the coming decades, despite the increased use of natural gas and nuclear energy. ● The Czech Republic's economy is very energy intensive (3rd highest in EU)[6] due to industry fields such as metallurgy, steel and coal.	**Emission regulations for industries**: ● All major stationary sources of air pollutants are obliged to register and report emissions. There are monitoring stations in the industry areas. ● Czech legislation establishes air quality objectives (limit and target values) for different pollutants. Limit values are concentrations that must not be exceeded in a given period of time. emissions within the European Union are regulated under the Industrial Emissions (IED), which was issued on 21 December 2007 and was transposed to national . The directive's aim was to achieve significant benefits to the environment and alth by reducing harmful industrial emissions across the EU, in particular through lication of Best Available Techniques. **Small installation's emissions regulated**: *Yes* **Renewable energy investment promoted**: ● feed-in tariffs for renewables ● As a party to the EU Renewables Directive, the Czech Republic's national renewable energy action plan set out a goal of 13.5% renewables from gross consumption by 2020.[7] **Energy efficiency incentives:** *(ex: Subsidies, labelling, rebates etc)* ● subsidy for household and residential buildings insulation and heating upgrade ● subsidy for public offices buildings energy efficiency retrofit

[2] http://portal.chmi.cz/?l=en#!
[3] *"Czech Republic". International Monetary Fund. Retrieved 14 April 2015.*
[4] http://www.mpo.cz/dokument159715.html
[5] http://download.mpo.cz/get/52179/59326/619088/priloha001.pdf and http://download.mpo.cz/get/53386/60890/635855/priloha001.pdf
[6] http://www.eea.europa.eu/data-and-maps/indicators/total-primary-energy-intensity-2/assessment
[7] https://ec.europa.eu/energy/node/71

		Incentives for clean production and installation of pollution prevention technologies: ● As party to EU ETS, emission allowances for CO2 must be purchased incentives to transfer to BAT **Actions to ensure compliance with regulations:** *(monitoring, enforcement, fines etc)* ● monitoring ● pollution above limits is unlawful **Other actions at national, sub-national and / or local level to reduce industrial emissions**: *(can include incentives to move industries to less populated areas here)* ● Action plan for each sub-national region according to its economy, infrastructure and climate.
REDUCE EMISSIONS FROM TRANSPORT	**Key transport-related air quality challenges**: *(ex: vehicle growth, old fleet, dirty fuel, poor public transport etc)* ● Private car ownership is high with 485 cars per 1000 individuals in 2010[8]. At the end of 2013, a total of 6,319.0 thousand motor vehicles were registered in the Czech Republic ● Alongside petrol-powered cars also diesel vehicles are in use (32% in 2013). ● Vehicles meeting the EURO 4 standard cover the biggest share of the passenger car fleet under operation. A majority of the passenger car fleet, i.e., approximately 2.7 mil. vehicles, is older than 10 years. All cargo trucks meet the EURO standard. ● Since 2007, emissions of pollutants from transport have been declining ● Public transport is widely spread in the country. Czech	**Vehicle emission limit**: *(Euro rating)* ● Emissions standards for vehicles correspond to Euro 6 for LDV vi HDV standards. ● European Union emission regulations for new light duty vehicles (passenger cars and light commercial vehicles) are specified in Regulation 715/2007 (Euro 5/6) *[2899]*. ● Emission standards for light-duty vehicles are applicable to all vehicles not exceeding 2610 kg (Euro 5/6). ● EU regulations introduce different emission limits for *compression ignition* (diesel) and *positive ignition* (gasoline, NG, LPG, ethanol,...) vehicles. Diesels have more stringent CO standards but are allowed higher NOx. Positive ignition vehicles were exempted from PM standards through the Euro 4 stage. Euro 5/6 regulations introduce PM mass emission standards, equal to those for diesels, for positive ignition vehicles with direct injection engines. **Fuel Sulphur content**: *(in ppm)* ● The 2000/2005 emission standards were accompanied by an introduction of more stringent fuel regulations that require "Sulphur-free" diesel and gasoline fuels (≤

[8] World Bank, *Worldwide Total Motor Vehicles (per 1,000 People)*, 2011 <http://chartsbin.com/view/1114> [accessed 30 June 2015].

	Republic enjoys one of the most dense railroad networks in the world and there is a competition of multiple train and bus operators. All settlements are connected with bus lines and every major city operates a public transport system.	10 ppm S) must be mandatory from 2009. ● Maximum allowable sulphur level in petrol and diesel fuels is 10ppm **Fuel Lead content:** All vehicles use lead free gasoline **Restriction on used car importation**: • No. As part of EU free market all vehicles registered in any other EU state might be imported. As a result also cars older than 15 years which do not comply with EURO 3 standard are being imported. Around 120,000 used cars were imported in 2014 and about 150,000 in 2015.[9] Out of that, more than 80% are personal cars. **Actions to expand, improve and promote public transport and mass transit**: • No systematic support. Cities run and subsidise their public transport systems in general, the scale of expenses to support roads and parking places is much higher though. **Actions to promote non-motorized transport**: • All urban areas have sidewalks (All towns and settlements are obliged to provide sidewalks along roads). • The biggest cities are incrementally expanding bike lanes alongside car lanes inside city area in the few very last years. Five years ago the support to city bike transport was virtually none. In 2015 the city bike lanes in the five largest cities are mostly painted on the side of a road shared with car traffic. Bike infrastructure in a sense of separated bike path is scarce. Outside cities there is an extensive country-wide network of bike trails meant for recreation purposes mainly. • Car-free zones are virtually non-existent. Cars are allowed even to historic core of the city of Prague with some streets with limited access. There are car free festivals held for example on one street for one day or a bike ride to promote city bike transport in Prague that takes many streets for several hours.

[9] http://portal.sda-cia.cz/stat.php?p#rok=2015&mesic=11&kat=pre&vyb=&upr=&obd=r&jine=false&lang=CZ&str=prehled

		● **Other transport-related actions**: ● households with electric car get favourable electricity tariff.
REDUCE EMISSIONS FROM OPEN BURNING: OUTDOOR	**Outdoor, open burning**: *(ex: is it commonly done? burning what kinds of wastes? etc*) ● uncommon, illegal	**Legal framework***:* ● illegal ● up to municipalities to govern **Actions to prevent open burning of municipal waste and / or agricultural waste**: ● Open burning of waste is illegal; therefore anyone can call police to inquire. Such open burning is uncommon in the country. Open burning of biomass (such as garden waste or leaves from trees) is also regulated, some municipalities allow certain days for burning of leaves and grass in own garden. ● The only waste that is allowed to be burned is industry scale use of waste for the purpose of energy generation, that is in one of three incinerators there are in the country that run a system of collecting municipal waste and burn it with low emissions (higher standard than coal power plants) in order to generate heat and electricity.
REDUCE EMISSIONS FROM OPEN BURNING: INDOOR	**Dominant fuels used for cooking and space heating**: ● natural gas, electricity ● possibly also wood in the countryside ● **Impact**: WHO estimates that indoor air pollution causes 400 premature deaths annually[10] ● CO and PM are the most common indoor air pollutant ● Their concentrations are higher during wintertime compared to other seasons ● Behavioural hazards such as smoking indoor, pets inside, and low ventilation also contribute in poor indoor air quality	**Indoor air pollution regulated**: *(Yes / No)* **???** **Promotion of non-grid / grid electrification**: ● Virtually all buildings and households are connected to the electricity grid. Disconnecting is not encouraged. **Promotion of cleaner cooking fuels and clean cook stoves**: ● There is a subsidy program that offers financial help to households transferring from old stoves for heating (wood, coal, natural gas) to a newer one (natural gas). It is a successful subsidy program. ● Cooking in stove burning wood or waste is quite rare and happens only in the countryside. There is a limit on emission from the household chimney and

[10] WHO, 'WHO | Country Profiles of Environmental Burden of Disease', *WHO*, 2008 <http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/#T>.

		community/neighbour can call inspection. **Other actions to reduce indoor biomass burning, or to reduce its emissions**: ● Each region[11] is equipped with a Program for Air Quality Improvement that is designed upon the findings of air quality monitoring and recommends further actions to the regional government. These programs are based on the Mid-Term Air Quality Strategy 2020.

[11] For the purpose of air quality assessments the "regions" do not always follow borders of the sub-national level of government regions. For instance the region of Northern Moravia that is burdened with heavy industry is split into three regions for the purposes of air quality governance.