

# VI. SMOG WARNING AND REGULATION SYSTEM

With credentials issued by the Ministry of the Environment (MoE), the CHMI operates the Smog Warning and Regulation System (SWRS). Information provided through this system serves both for issuing warnings of extreme levels of air pollution (smog situations, or local exceedance of threshold values) and for regulating (reducing) the release of pollutants from selected sources significantly affecting ambient air quality in the respective area. The monitored pollutants include PM<sub>10</sub> suspended particles, sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) and ground-level (tropospheric) ozone (O<sub>3</sub>).

Since 1 September 2012, the SWRS has been regulated by Act No. 201/2012 Coll., on air protection, and Decree No. 330/2012 Coll., as amended. Their rules are summarized in Tab. VI.2. When announcing the smog situation and regulation for PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub>, the expected outlook for the next 24 hours is also evaluated. In contrast, when declaring a smog situation for O<sub>3</sub> and warnings for O<sub>3</sub>, NO<sub>2</sub> and SO<sub>2</sub>, the expected evolution of concentrations is not assessed and the public is informed, in accordance with Article 13 of Directive 2008/50/EC, immediately after the relevant threshold value is exceeded. For the same reason, exceeding the threshold value at

one station is sufficient to declare a smog situation and a warning for ozone. The current list of SWRS areas is given in Tab. VI.1. The areas and representative stations for PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub> (Figs. VI.1, VI.3, and VI.4) are specified by the Bulletin of the MoE and, for O<sub>3</sub> (Fig. VI.2), by the CHMI Director's Directive. For PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub>, a list published in MoE Bulletin No. 5/2019 (MŽP 2019), in force from 1 October 2019, applied throughout 2020. For O<sub>3</sub>, the list specified by CHMI Director's Directive No. 2019/12 was in force.

## Announced smog situations and regulations (warnings)

In 2020, no smog situations or regulations, nor warnings, were announced for any of the monitored substances. This is the first such year since the start of the smog and warning regulation system in the 1980s. The main reason is good meteorological and dispersion conditions, partly supported by emission reductions due to the gradual modernization of emission sources (see Chapters II, III and IV for more details).

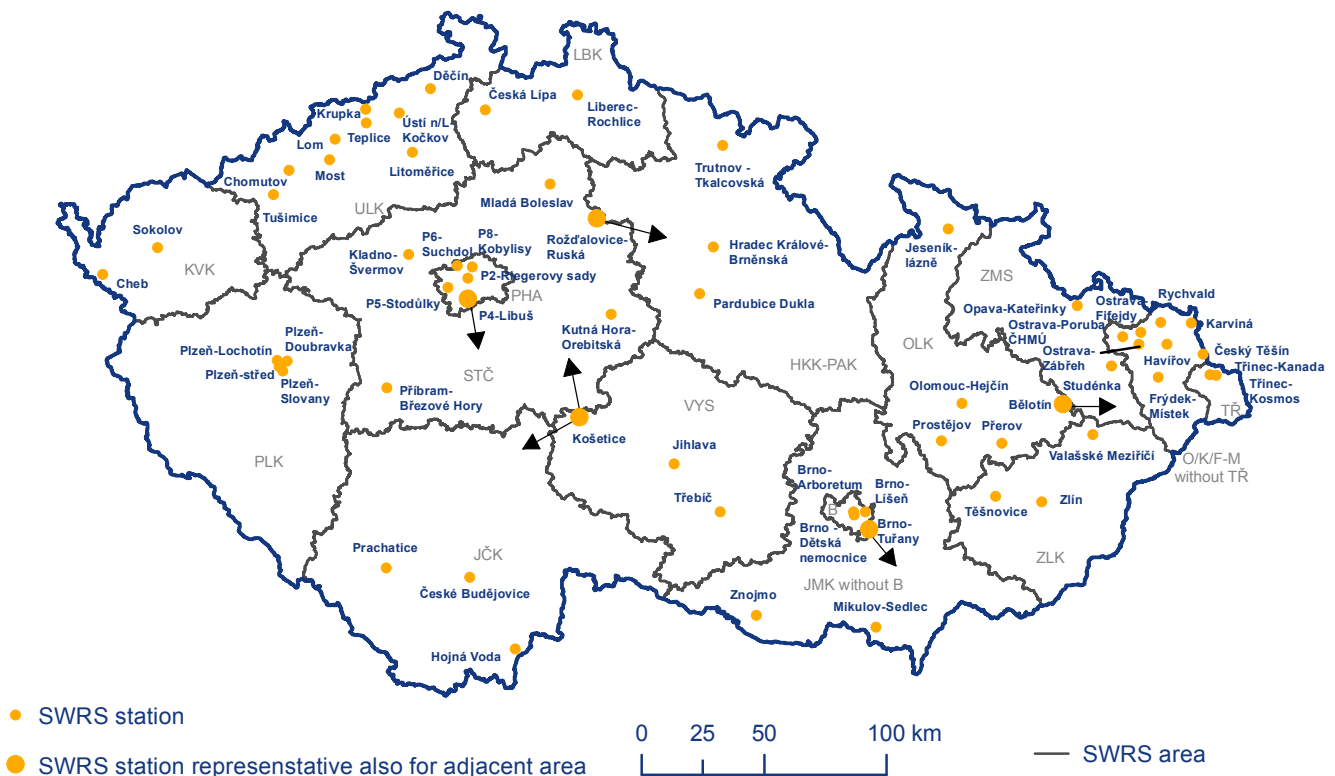


Fig. VI.1 SWRS areas and representative stations for PM<sub>10</sub> (in effect as of 1 October 2019)

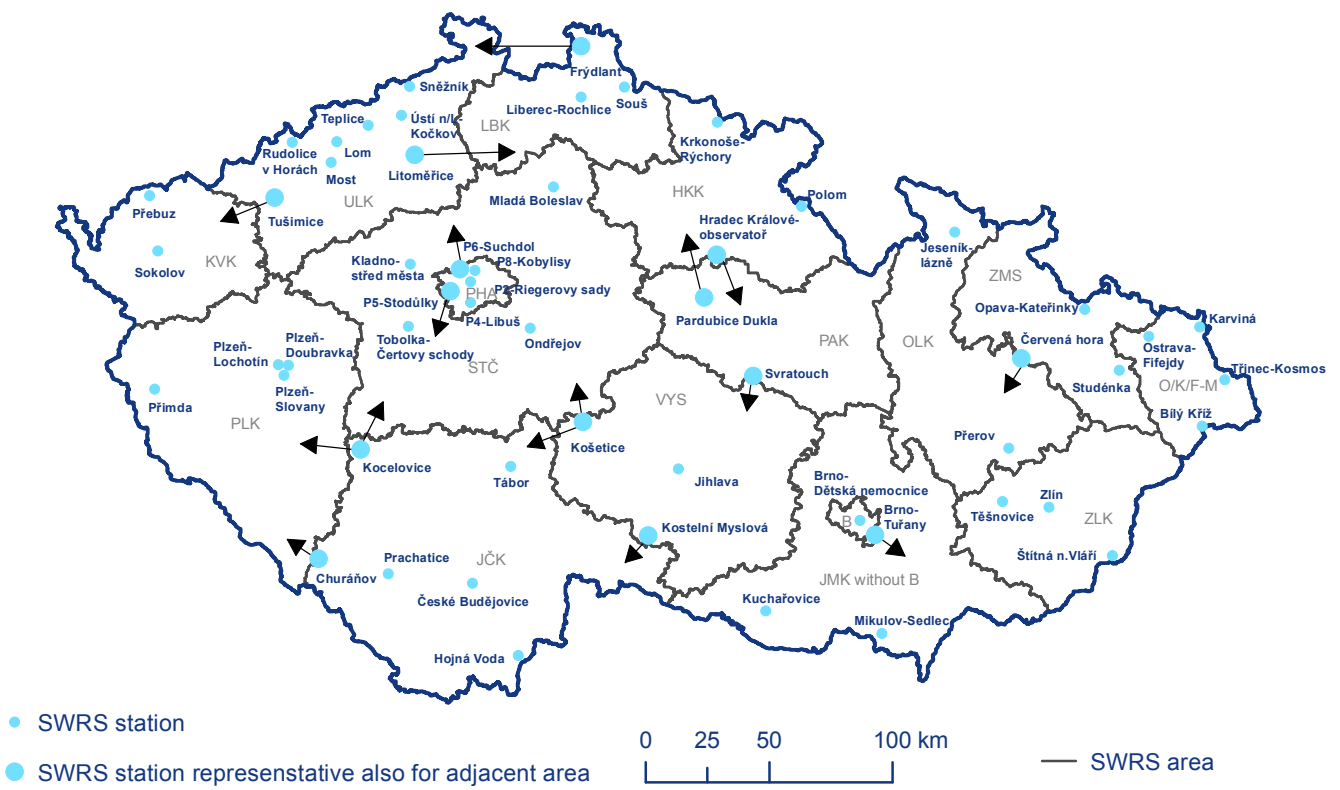


Fig. VI.2 SWRS areas and representative stations for  $O_3$  (in effect as of 1 October 2019)

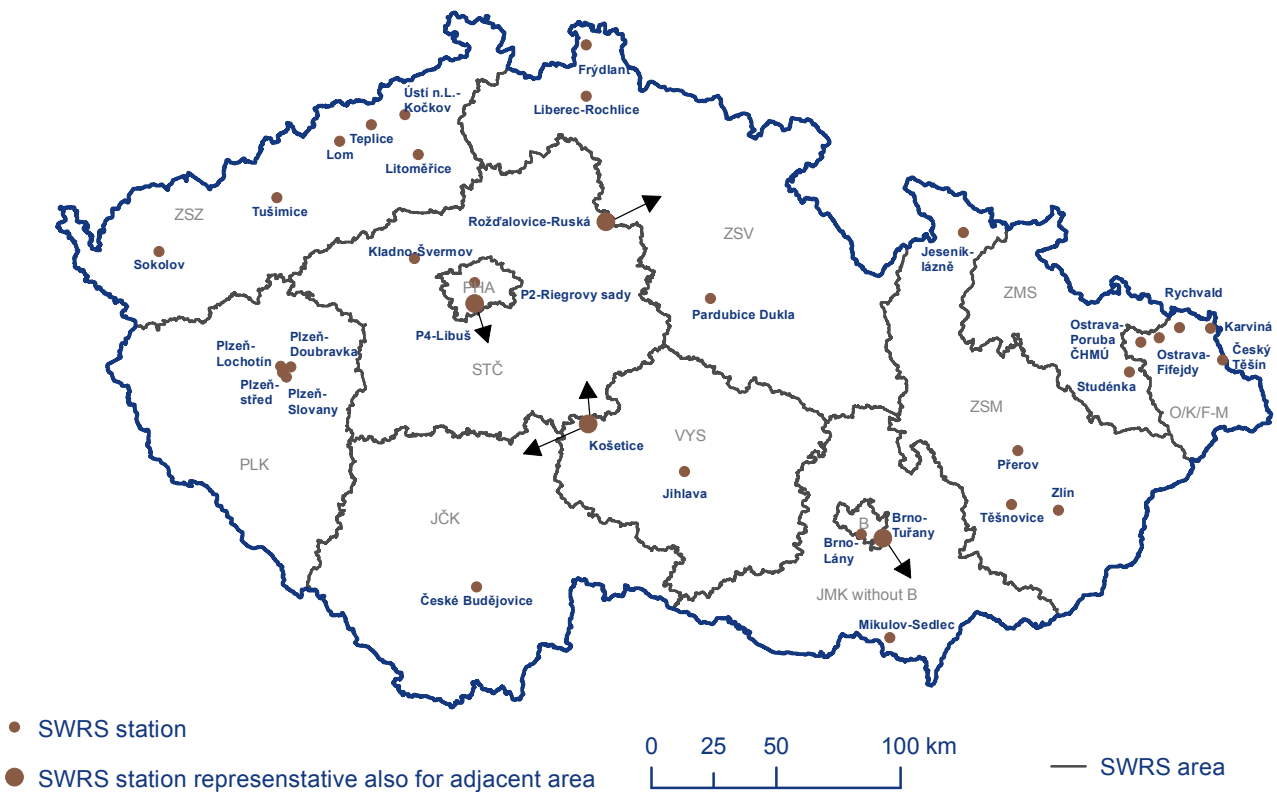


Fig. VI.3 SWRS areas and representative stations for  $SO_2$  (in effect as of 1 October 2019)

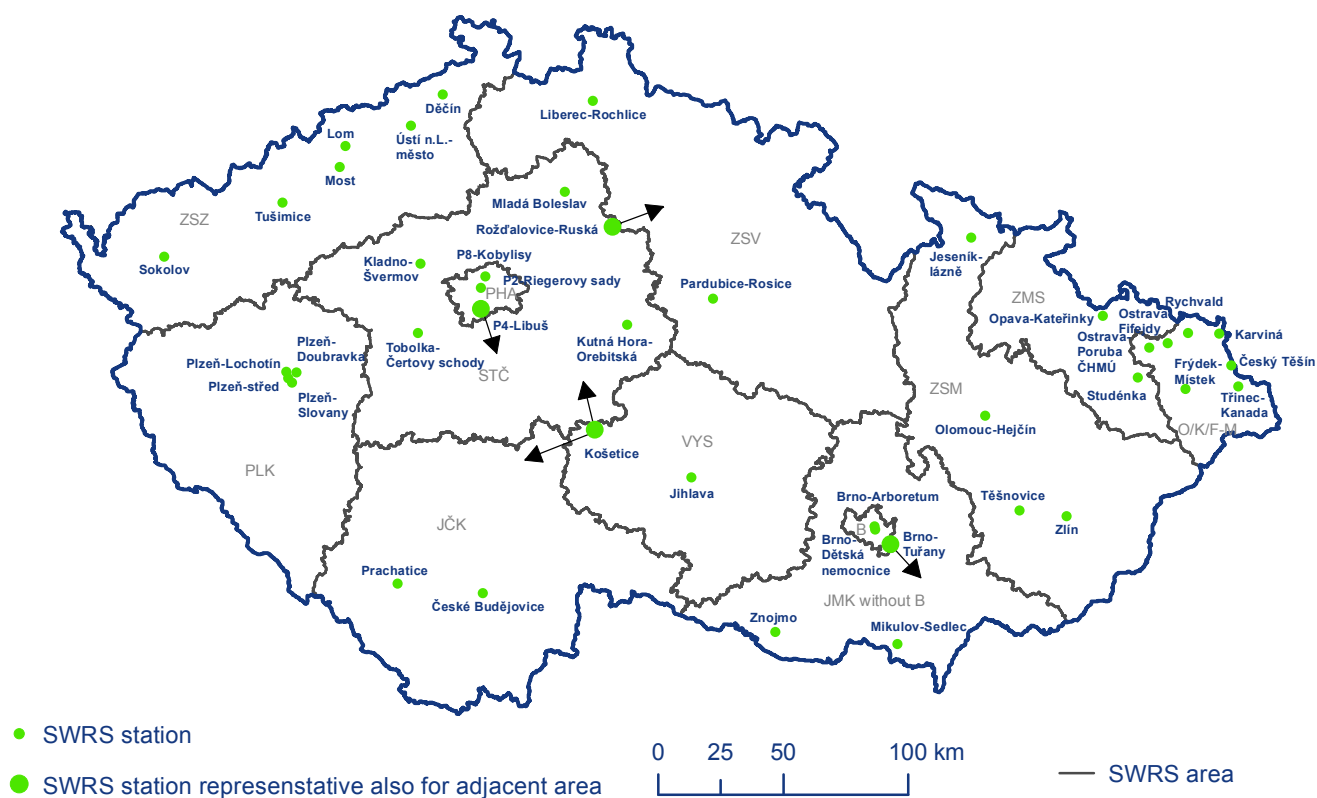


Fig. VI.4 SWRS areas and representative stations for NO<sub>2</sub> (in effect as of 1 October 2019)

Tab. VI.1 SWRS areas for individual pollutants

Zone / Agglomeration	SWRS area* (abbreviation)		
	SO <sub>2</sub> , NO <sub>2</sub>	PM <sub>10</sub>	O <sub>3</sub>
Agglomeration of Prague		PHA	
Central Bohemia zone		STČ	
South-western zone		Plzeň region (PLK)	
		South Bohemia region (JČK)	
North-western zone	ZSZ	Ústí nad Labem region (ULK)	
		Karlovy Vary region (KVK)	
North-eastern zone	ZSV	Hradec Králové region and Pardubice region (HKK-PAK)	Hradec Králové region (HKK)
			Pardubice region (PAK)
		Liberec region (LBK)	
South-eastern zone		Vysočina region (VYS)	
		South Moravia region without agglomeration of Brno (JMK without B)	
Agglomeration of Brno		B	
Central Moravia zone	ZSM	Olomouc region (OLK)++	
		Zlín region (ZLK)++	
Moravia-Silesia zone		ZMS	
Agglomeration of Ostrava/ Karviná/Frýdek-Místek	O/K/F-M+	Agglomeration of Ostrava/Karviná/Frýdek-Místek without Třinec area (O/K/F-M without TŘ)	O/K/F-M
		Třinec area (TŘ)**	

\* the name of the SWRS area indicated if it differs from the name of the zone or agglomeration

\*\* territory of municipalities with extended powers - Jablunkov (8110) and Třinec (8121)

+ indication since October 2013, when the subdivision of the O/K/F-M area into O/K/F-M without Třinec area and Třinec area was canceled

++ division for PM<sub>10</sub> valid from October 2016, when the Central Moravia zone was divided

Tab. VI.2 The rules for the announcement and cancellation of smog situations and regulations (alerts)

Substance	Threshold value			Exceedance duration	Number of stations*	Supplementary condition
	Abbreviation	$\mu\text{g}\cdot\text{m}^{-3}$	Interval			
<b>Announcement of smog situation</b>						
<b>PM<sub>10</sub></b>	<b>IPH</b>	100	12 h	1 h	50% (two stations if there are just two of them)	Based on an evaluation of the forecast of meteorological conditions and pollution situation no decrease of the concentration below the informative threshold value can be expected during next 24 hours.
<b>NO<sub>2</sub></b>		200	1 h	3 h	1 station	
<b>SO<sub>2</sub></b>		250				
<b>O<sub>3</sub></b>		180	1 h	---		
<b>Announcement of regulation</b>						
<b>PM<sub>10</sub></b>	<b>RPH</b>	150	12 h	1 h	50% (two stations if there are just two of them)	Based on an evaluation of the forecast of meteorological conditions and pollution situation no decrease of the concentration below the informative threshold value can be expected during the next 24 hours.
<b>NO<sub>2</sub></b>		400	1 h	3 h		
<b>SO<sub>2</sub></b>		500				
<b>Announcement of alert</b>						
<b>O<sub>3</sub></b>	<b>VPH</b>	240	1 h	1 h	1 station	---
<b>NO<sub>2</sub></b>	<b>RPH</b>	400		3 h		
<b>SO<sub>2</sub></b>	<b>RPH</b>	500				
<b>Cancellation</b>						
The smog situation terminates and the regulation is revoked if no measuring site representative for the pollution level in an area of minimum 100 km <sub>2</sub> reports the concentration of polluting substances above the corresponding threshold value and this state lasts continuously for at least 12 hours and no recurrent instance of exceeding the informative, regulatory or warning threshold value can be expected in the next 24 hours based on the meteorological forecast.						
<b>12-hour time interval</b> is being reduced up to 3 hours in a case when meteorological conditions cannot be assessed as leading to the smog situation and recurrent instance of exceeding the informative, regulatory or warning value can almost be excluded in the next 24 hours in accordance with the meteorological forecast.						

\* Station must be representative for the pollution level in an area of minimum 100 km<sup>2</sup>.

Note: **IPH** – information threshold value, **RPH** – regulatory threshold value, **VPH** – alert threshold value. The requirements for the number of stations are related to the representative stations for the given SWRS area.