

Air quality modelling - important source of information for air quality management in CZ

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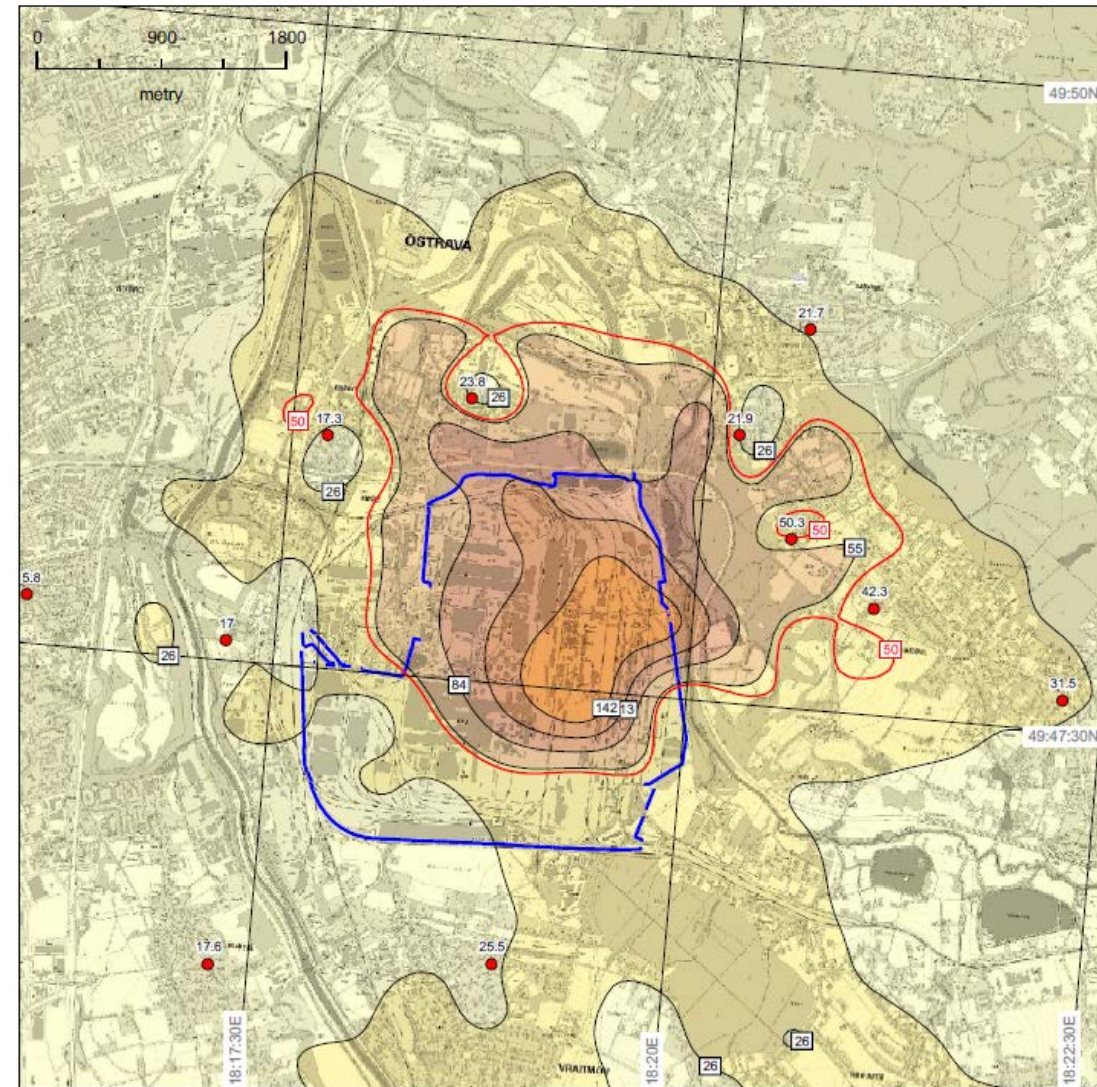
MbEnv introduction

- Ministry of the Environment is a central state administrative authority in environmental protection.
- We oversee the implementation of national and European legislation concerning, among others, air protection.
- We are responsible for creating air quality plans and national air pollution control program.
- We are keen advocate of air quality modelling and keen user of modelled data.



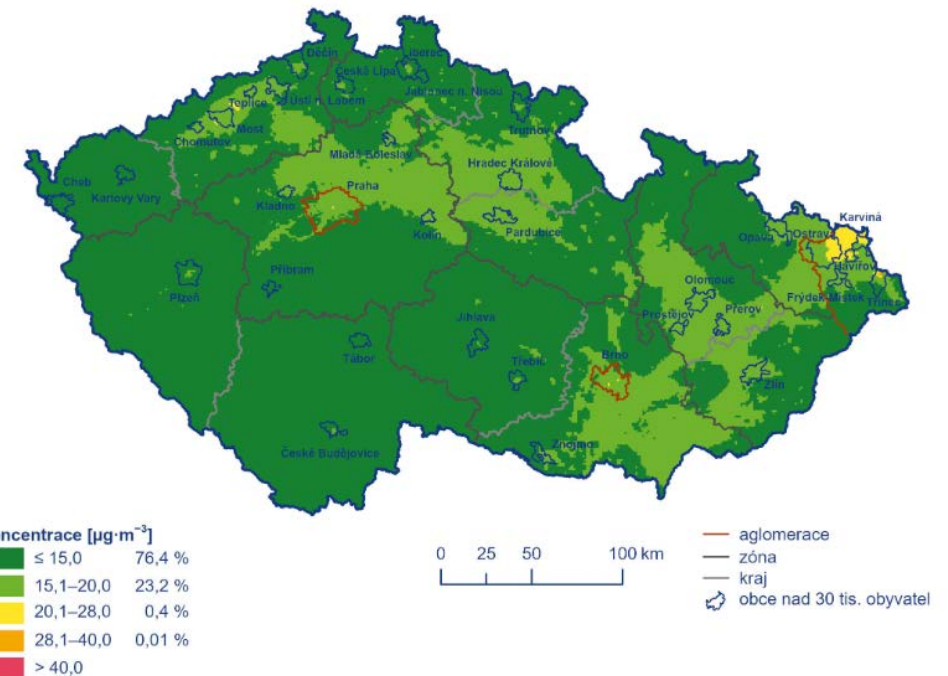
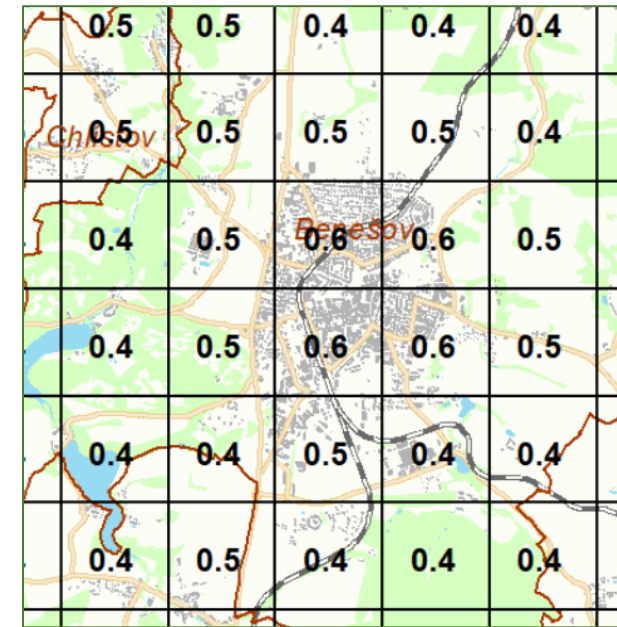
CZ relies on air quality modelling a lot

- CZ Air Protection Act recognises the irreplaceable role of air quality modelling in decision making.
- Operating permits for industrial air pollution sources are granted based on air quality dispersion analyses.



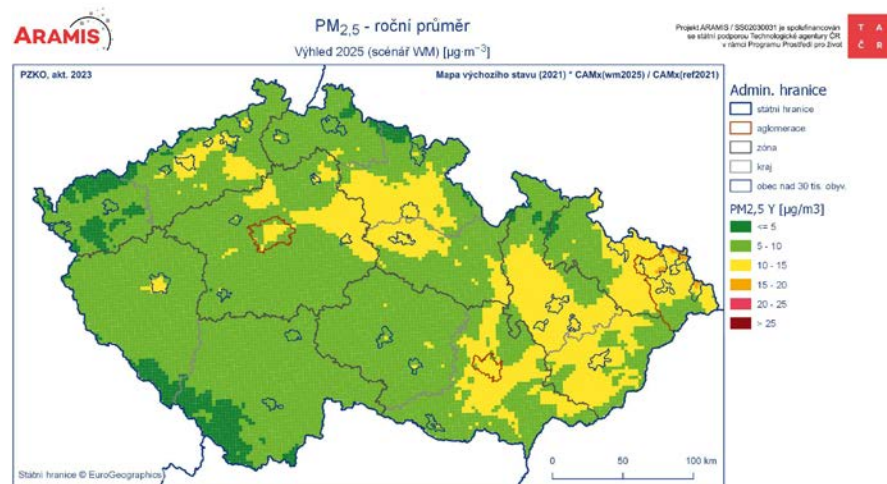
CZ relies on air quality modelling a lot

- Air quality models and their results are routinely used in CZ to analyse compliance with air quality standards.
- Modelled exceedance are taken into account in air quality management (permits, EIA assessment, urban planning...)



CZ relies on air quality modelling a lot

- Measures (air quality plans, air pollution control programme) are underpinned by air quality modelling and air quality projections.



PROGRAM ZLEPŠOVÁNÍ KVALITY OVZDUŠÍ

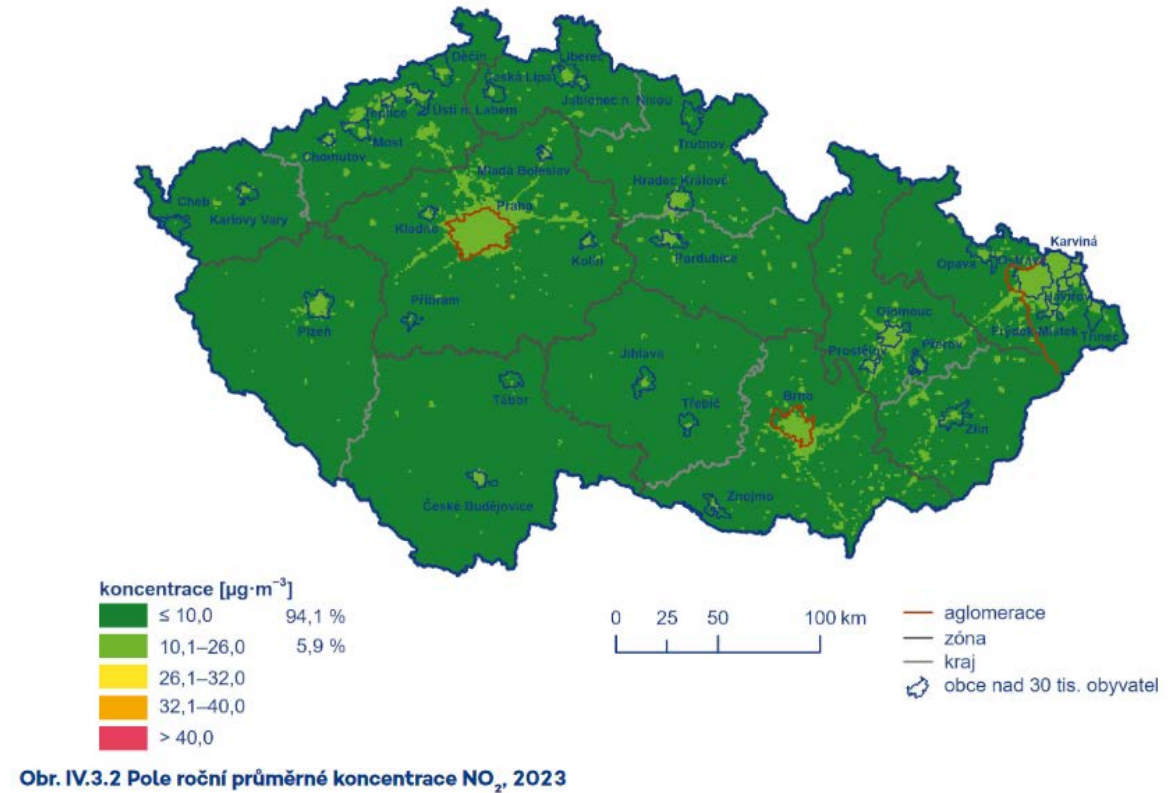
AGLOMERACE OSTRAVA/KARVINÁ/FRÝDEK-MÍSTEK
CZ08A

aktualizace 2020

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Models allowed us to take good decisions

- 2023 and 2024 –no exceedances of any limit values at CZ sampling points
- We managed to achieve all the limit values of the current AAQ Directive –in line with the air quality projection.
- We believe that air quality modelling should continue to be an integral part of air quality management in CZ.
- Perfecting air quality modelling is an ongoing task that we support on a national and EU level



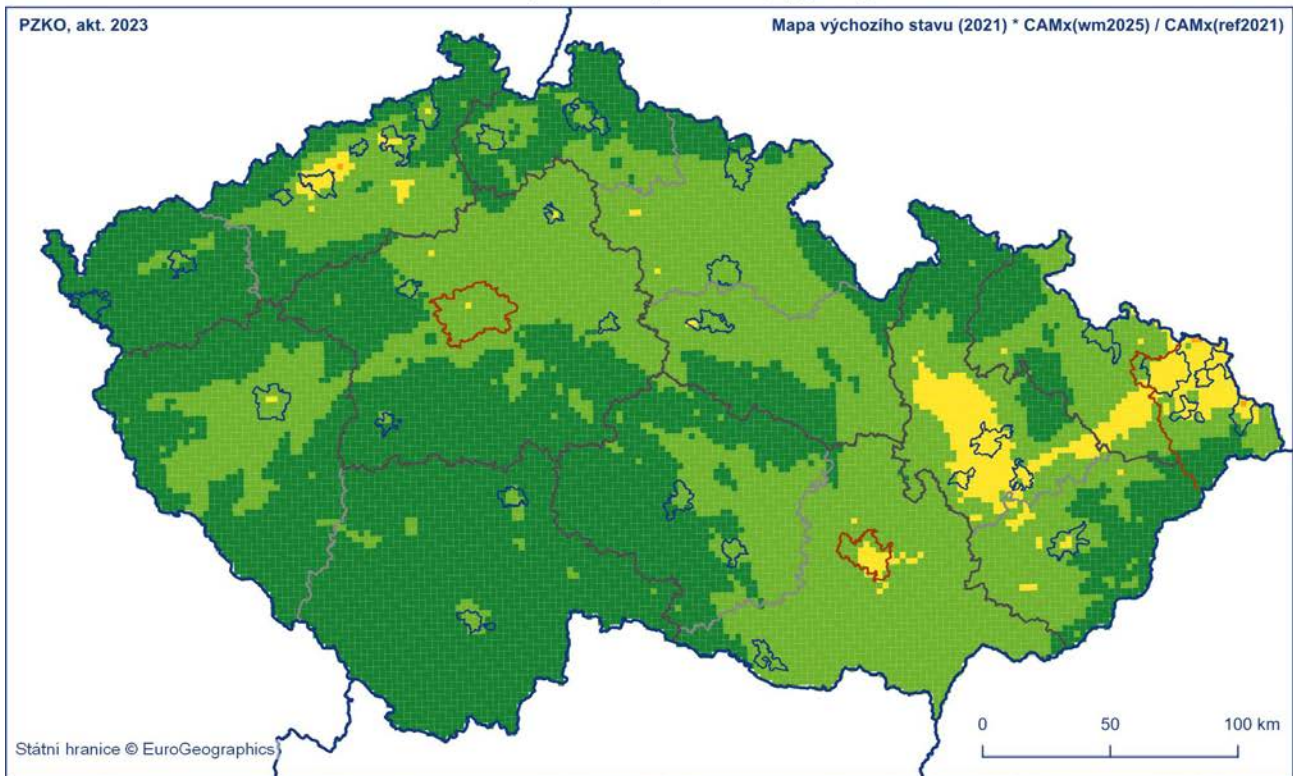
PM₁₀ in 2025 according to air quality projection



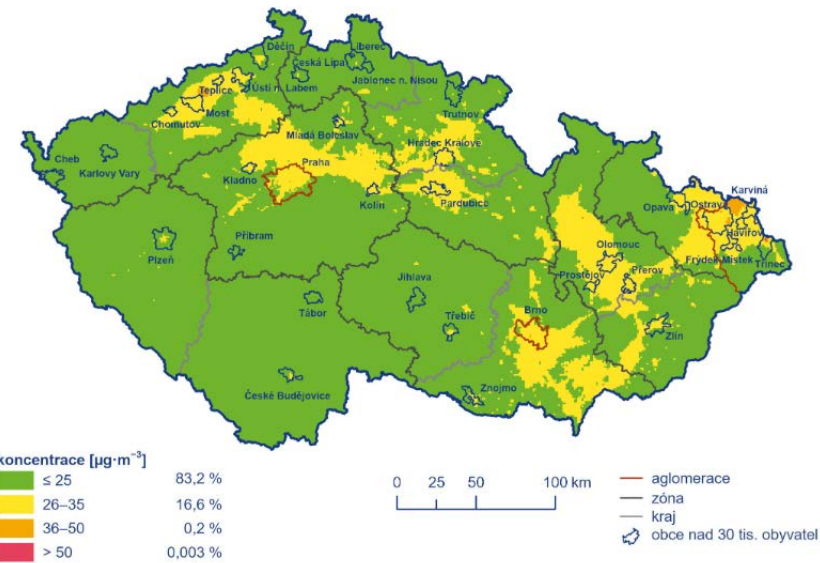
PM₁₀ - 36. nejvyšší denní průměr

Výhled 2025 (scénář WM) [$\mu\text{g}\cdot\text{m}^{-3}$]

Projekt ARAMIS / SS02030031 je spolufinancován se státní podporou Technologické agentury ČR v rámci Programu Prostorů pro život



- Admin. hranice
- státní hranice
 - aglomerace
 - zóna
 - kraj
 - obec nad 30 tis. obyv.
- PM10 D36 [$\mu\text{g}/\text{m}^3$]
- ≤ 20
 - 20 - 30
 - 30 - 40
 - 40 - 50
 - 50 - 75
 - > 75



Obr. IV.1.3 Pole 36. nejvyšší 24hod. koncentrace PM₁₀, 2023

PM_{2,5} in 2025 according to air quality projection



PM_{2,5} - roční průměr

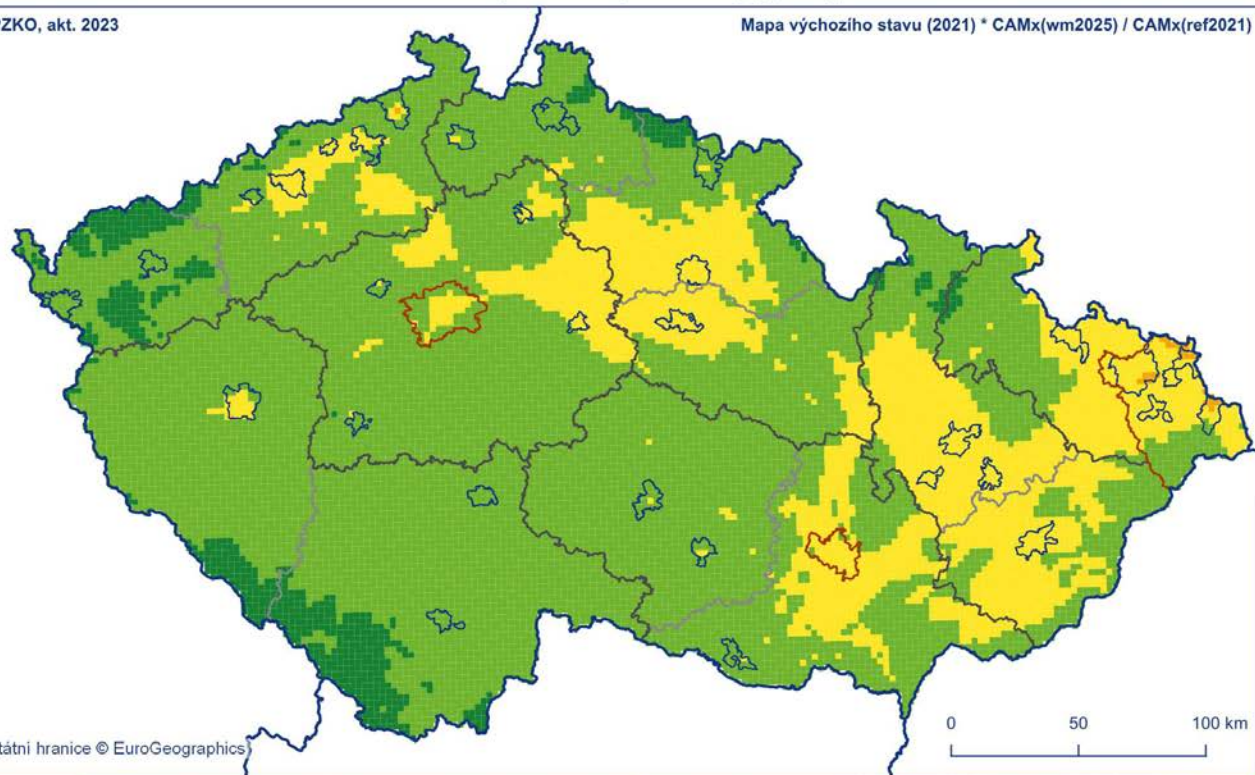
Výhled 2025 (scénář WM) [$\mu\text{g}\cdot\text{m}^{-3}$]

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PZKO, akt. 2023

Mapa výchozího stavu (2021) * CAMx(wm2025) / CAMx(ref2021)

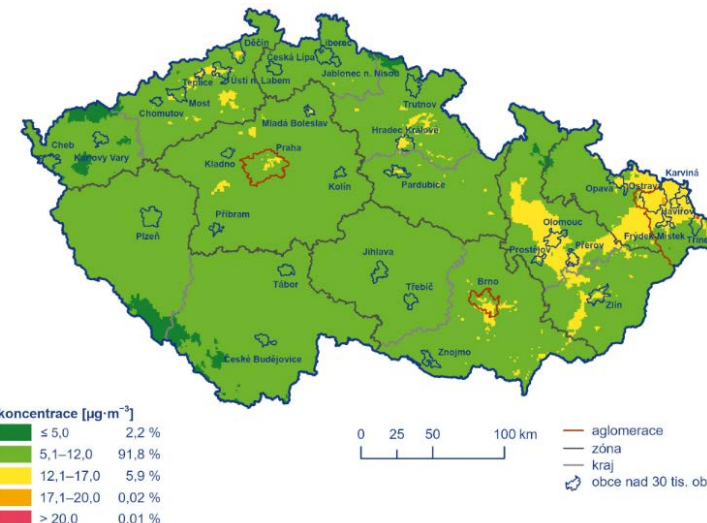


Admin. hranice

- státní hranice
- aglomerace
- zóna
- kraj
- obec nad 30 tis. obyv.

PM_{2,5} Y [$\mu\text{g}/\text{m}^3$]

- <= 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- > 25



koncentrace [$\mu\text{g}\cdot\text{m}^{-3}$]	podíl [%]
≤ 5,0	2,2 %
5,1–12,0	91,8 %
12,1–17,0	5,9 %
17,1–20,0	0,02 %
> 20,0	0,01 %

Obr. IV.1.12 Pole roční průměrné koncentrace PM_{2,5} 2023

BaP in 2025 according to air quality projection



Benzo[a]pyren - roční průměr
Výhled 2025 (scénář WM) [$\text{ng}\cdot\text{m}^{-3}$]

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PZKO, akt. 2023

Mapa výchozího stavu (2021)*
[CAMx(wm2025, CZ)*korigEmise/původEmise + CAMx(wm2025, nonCZ)]/
CAMx(ref2021)

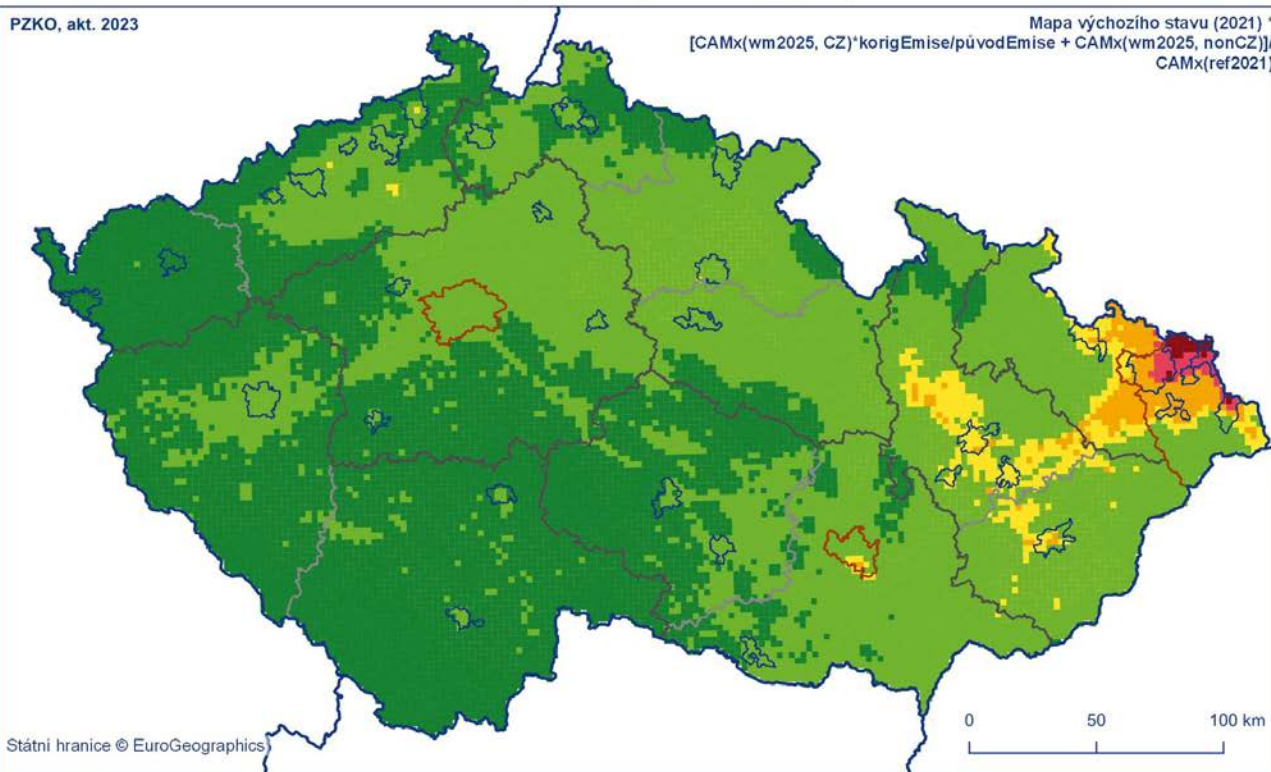
Admin. hranice

- státní hranice
- aglomerace
- zóna
- kraj
- obec nad 30 tis. obyv.

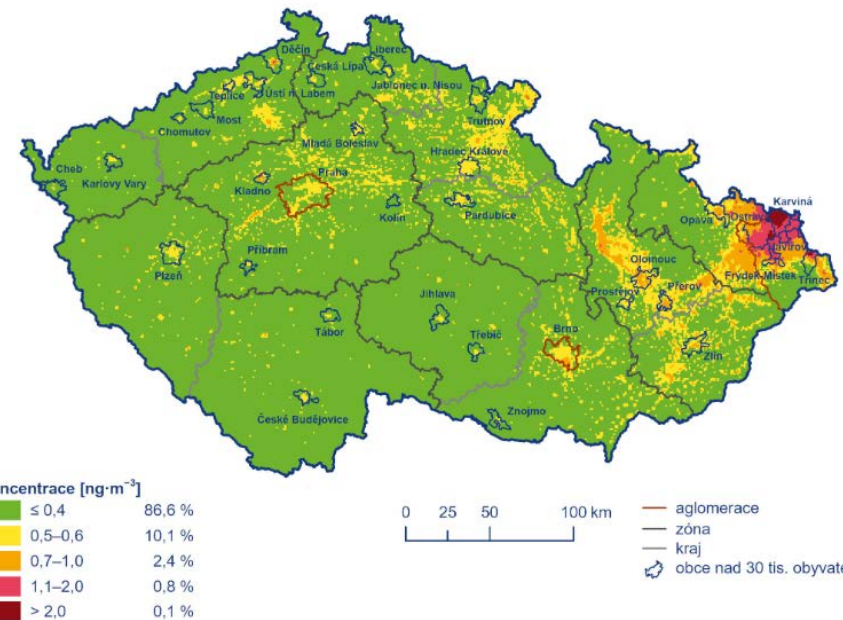
BaP Y [ng/m^3]

korekce topidla

- $\leq 0,12$
- 0,1 - 0,4
- 0,4 - 0,6
- 0,6 - 1,0
- 1,0 - 1,5
- $> 1,5$



Státní hranice © EuroGeographics



koncentrace [$\text{ng}\cdot\text{m}^{-3}$]	
$\leq 0,4$	86,6 %
0,5–0,6	10,1 %
0,7–1,0	2,4 %
1,1–2,0	0,8 %
$> 2,0$	0,1 %


0 25 50 100 km

- aglomerace
- zóna
- kraj
- obce nad 30 tis. obyvatel

Obr. IV.2.2 Pole roční průměrné koncentrace benzo[a]pyrenu, 2023

Air quality models - an important tool of the new AAQD

- Air quality modelling will play an important role in decision making and health protection across EU (air quality plans, roadmaps) in the future.
- New AAQD put air quality modelling and FAIRMODE community at the spotlight.

 Official Journal of the European Union EN
L series

2024/2881 20.11.2024

DIRECTIVE (EU) 2024/2881 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2024
on ambient air quality and cleaner air for Europe
(recast)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Having regard to the opinion of the Committee of the Regions ⁽²⁾,

Acting in accordance with the ordinary legislative procedure ⁽³⁾,

Whereas:

- (1) Directives 2004/107/EC ⁽⁴⁾ and 2008/50/EC ⁽⁵⁾ of the European Parliament and of the Council have been substantially amended. Since further amendments are to be made, those Directives should be recast in the interest of clarity.
- (2) The Commission set out in its communication of 11 December 2019 entitled 'The European Green Deal' an ambitious roadmap to transform the Union into a fair and prosperous society, with a modern, resource-efficient and competitive economy, that aims to protect, conserve and enhance the Union's natural capital, and to protect the health and well-being of citizens from environment-related risks and impacts. Specifically on clean air, the Commission committed itself to further improving air quality and to aligning Union air quality standards more closely with the recommendations of the World Health Organization (WHO). The Commission also announced in the European Green Deal a strengthening of provisions on air quality monitoring, modelling and planning.
- (3) In its communication of 12 May 2021 entitled 'Pathway to a Healthy Planet for All – EU Action Plan: Towards Zero Pollution for Air, Water and Soil', the Commission established a 'Zero Pollution Action Plan' that, inter alia, addresses pollution aspects of the European Green Deal and further commits to reducing, by 2030, the health impact of air pollution by more than 55 % and the Union ecosystems where air pollution threatens biodiversity by 25 %.
- (4) The Zero Pollution Action Plan also sets out a vision for 2050, where air pollution is reduced to levels no longer considered harmful to health and natural ecosystems. To that end, a staged approach towards setting current and future Union air quality standards should be pursued, establishing air quality standards for 2030 and beyond, and developing a perspective for alignment with the most up-to-date WHO Air Quality Guidelines at the latest by 2050 based on a regular review mechanism to take into account the latest scientific evidence. Given the links between pollution reduction and decarbonisation, the long-term objective to achieve the zero pollution ambition should be

⁽¹⁾ OJ C 146, 27.4.2023, p. 46.
⁽²⁾ OJ C, C/2023/251, 26.10.2023, ELI: <http://data.europa.eu/eli/C/2023/251/oj>.
⁽³⁾ Position of the European Parliament of 24 April 2024 (not yet published in the Official Journal) and decision of the Council of 14 October 2024.
⁽⁴⁾ Directive 2004/107/EC of the European Parliament and of the Council of 13 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air (OJ L 23, 26.1.2005, p. 3).
⁽⁵⁾ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (OJ L 152, 11.6.2008, p. 1).

ELI: <http://data.europa.eu/eli/dir/2024/2881/oj> 1/70

Thank you for your attention



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