

## Report of the 6<sup>th</sup> meeting of the Expert Panel on Clean Air in Cities (EPCAC) held online on Nov. 18-19, 2025

### Key messages

The purpose of the meeting was to discuss experiences in cities to improve their air quality and on how to comply with the EU ambient air quality directive (AAQD). There were presentations on: 1) developments related to Gothenburg Protocol revision and EU air quality directive, 2) progress in local air quality modelling methodologies and health impacts, and 3) experiences/plans/actions focused at cities in the EU, EECCA and non-UNECE countries.

Some conclusions from the meeting and presentations:

1. There have been large improvements in the air quality in cities in recent years, but air pollution is still the most harmful environmental risk factor to human health in many cities. In the EU, meeting the AAQD standards is still a challenge in many cities.
2. Internationally coordinated measures to reduce emissions as well as EU legislation contribute significantly to the improvements in air quality, but regional/national and local measures remain necessary for compliance with the EU AAQD.
3. Many sources of air pollution lie outside the city and demand effective collaboration at the regional, national and international level. It is therefore also important to include actions in surrounding regions in local air quality plans.
4. Legal compliance to the EU AAQD standards does not eliminate the health impacts from air pollution. Meeting the WHO guidelines is an even larger challenge for countries than the EU AAQD regulations and also demands further action on the regional, national and international level.
5. Scenarios for air quality in countries and cities often assume that all EU member states meet the EU regulations. If this is not the case this could result in setbacks and the need for additional national and local measures.
6. Many studies on air quality in cities also calculate the health effects of the air pollution and of measures to improve air quality. It is recommended that such studies also consider the costs of measures and take policies on climate change and urban planning into account. Urban greening and its impact on air quality can be assessed with atmospheric modelling systems that accounts for interactions with air and city-specific features.
7. There are several new promising studies on the oxidative potential of particulate matter and ultra fine particles. This could yield information on the attribution of health effects to certain compounds of PM<sub>2.5</sub> and the potential prioritization of emission reductions in specific sectors.
8. It remains important for EPCAC to reach out to cities. The connection with Eurocities and the Covenant of Mayors will be further expanded.

Around 70-80 participants from national governments, cities, the scientific community, NGO's and industry participated in a two-day workshop that was held online on Nov. 18-19, 2025. Martine Ouwensloot (Netherlands) and Guus Velders (Netherlands) chaired the meeting. These presentations were on:

1. The EPCAC position paper was presented by Guus Velders and next steps for EPCAC were discussed. The position paper is available through the EPCAC website at IIASA

([https://iiasa.ac.at/sites/default/files/2025-02/EPCAC\\_Position\\_v5\\_10apr2024.pdf](https://iiasa.ac.at/sites/default/files/2025-02/EPCAC_Position_v5_10apr2024.pdf)). It is now being converted in to a scientific publication.

2. TFIAM-CIAM Progress in activities and outlook by Simone Schucht (co-chair TFIAM). She discussed the ongoing activities by TFIAM and CIAM containing the documents finalized and in progress and the activities focussing on the revision of the Gothenburg Protocol. Version 6 of the policy brief to reduce risks for health and ecosystems is now available online: [v6 TFIAM-CIAM Policy Brief on targets to reduce risks for health and ecosystems.pdf](#)
3. A simplified national approach for assessing the likelihood of AAQD compliance in 2030 and beyond was presented by Andreas Eisold. He discussed current issues at national level with compliance to the AAQD 2024/2881 and the simplified national approach to project potential compliance with AAQD standards. National and European measures have a substantial impact on reducing local PM<sub>2.5</sub> exposure, but additional local measures remains necessary in a significant number of cities.
4. Implications of scenarios for the Gothenburg Protocol revision on urban air quality in Europe and EECCA countries were shown by Gregor Kiesewetter (CIAM). He discussed the results from GAINS model simulations following the Gothenburg Protocol revision for PM<sub>2.5</sub> and results from EMEP model simulations for the Gothenburg Protocol revision for ozone. International coordinated measures in the EU will lead to substantial PM<sub>2.5</sub> exposure reductions for the city population. In West-Balkan and EECCA-countries the expected exposure remains relatively high, especially in the baseline scenario. Traffic and residential heating were identified as dominating local sources. Ozone exposure is generally higher in rural areas than in cities. However, in the baseline and maximum feasible reduction scenario (MFR) to address ozone precursors internationally, the differences will become smaller.
5. Short-term effects of PM oxidative potential (OP) on mortality were presented by Vanessa Nogueira. She discussed the OP measurement intercomparison study within the RI-Urbans/Actris study between dithiothreitol (DTT) and ascorbate (AA) assays and presented preliminary results of the short-term effects of OP on mortality.
6. Ana Grossinho discussed managing emissions versus exposure for ambient air concentrations. She suggested a science-policy arena for the analysis of cost-effective multi-scale air quality strategies to improve air quality in cities and ultimately regions. She showed the significance of impacts criteria for the distinction of managing emissions versus exposure.
7. The association of ultrafine fresh urban particles with OP and human oxidative markers was shown by Maurizio Gualtieri. He showed the limitations of filter OP measurements versus online exposure systems and that 8-20 nm particles should receive special attention. Especially emissions of fresh particles from burning processes close to sensitive people should be avoided.
8. Ten key air quality measures to cut emissions and achieve the new AAQD by 2030 were discussed by Margherita Tolotto. She demonstrated that meeting the AAQD by 2030 would be feasible with existing policy approaches with no need for extending the deadline. The implementation of the set of 10 measures will bring the EU very close to comply with WHO 2021 Guidelines.
9. Nuria Castell presented a quality control of PM<sub>2.5</sub> sensor networks and their use in mapping air quality. She discussed the quality controlling of low-cost sensor networks data and using sensors for mapping with data assimilation and mapping with machine learning.

10. The RI-URBANS project (Research infrastructures services reinforcing air quality monitoring capacities in European urban & industrial areas) was presented by Xavier Querol. He discussed the RI-URBANS concept and service tools and highlighted ultrafine particles and particle number size distributions (PNSD) in urban Europe, black carbon in urban Europe, oxidative potential and NH<sub>3</sub> in Europe.
11. Stefano Zauli-Sajani discussed Quantifying the air quality and health co-benefit of local greenhouse gas mitigation actions: the case of the Covenant of Mayors. The study's objective was to estimate the number of avoided premature deaths and YOLL as co-benefit of the application of climate change mitigation actions in a selection of cities from the Covenant of Mayors alliance.
12. "Can cities air quality plans be effective without knowing the vegetation effect?" This was discussed by Mihaela Mircea. She concluded that a sustainable legacy of urban vegetation should be considered when developing air quality plans due to its enduring contribution to urban liveability through climate regulation, improved air quality, and a reduced carbon footprint.
13. Effects of the national baseline and MFR emission scenarios on air quality and health in major cities in Poland were presented by Joanna Struzewska. According to the scenarios it is possible to significantly reduce pollutants and reach the air quality limit values of the AAQD in Poland between 2030 and 2040.
14. Marialuisa Volta discussed progress and policies to achieve the Zero Pollution Action Plan and EU 2024/2881 PM2.5 targets in Northern Italy. She concluded that with additional measures (as defined in an optimal scenario) 55% health risk reduction would be feasible in 26 out of 29 cities, while the new AAQD PM2.5 limit remains infeasible in the medium term. Targeted action is key. The optimal scenario must focus on residential wood burning and agriculture.
15. Breathing clean air and hearing bird song in a densified city – is it possible? This was the title of a presentation by Ebba Malmqvist. She discussed the health impact of densification and possible creative solutions. In cities there is a strong competition on space. Citizens are impacted by noise and air pollution. Densifying a cities without reducing traffic would likely increase health costs.
16. Air quality management in Türkiye was discussed by Şeyma Uçar Seçgel. She discussed the technical and organisational structure of air quality policy in Türkiye, air quality modelling activities, regional and city planning, case & solutions and next steps.
17. Beatrix Cárdenas discussed using a source awareness approach to support local solutions in Jakarta, Nairobi and Indore. She discussed the Clean Air Catalyst global partnership and program strategy to improve source awareness, co-design solutions and build strategic coalitions. The source awareness approach was used in three cities contributing to a better understanding and identification of the sources contributing to air pollution, such as transport, biomass burning and waste burning,
18. Tobias Wolf presented the work of the Eurocities network on air quality. He gave an overview of activities for the AAQD, the Ecodesign standards (for boilers and space heaters) and the advocacy workplan of Eurocities focussing on the thematic area environment and specifically air. The Eurocities Environment Forum meets once a year. The distribution of local versus national responsibilities to meet air quality limit values remained a recurrent issue for Eurocities.
19. Integrating action on air quality and climate change in UK local government was discussed by Sarah Legge, chair of the task group on the Air Quality and Climate Change Guidance of the Environmental Policy Implementation Committee (EPIC) at the Institution of Environmental Sciences. She introduced EPIC and its current work on air

- quality and climate change with guidance for local governments, including benefits, effective measures and case studies. She stressed the importance of building relationships between policy divisions and between local and national policy makers.
20. Evidence on the benefits of low emission zones (LEZ) from Antwerp and Brussels was presented by Marianne Chagnon. She introduced the membership based-organization Health Alliance (HEAL) and the key aspect of their work: knowledge translation into policy. She also presented a new study on LEZs in Antwerp and Brussels with the objective to evaluate how their implementation affected air pollution.
  21. Slides of the intended presentation of Carlo Trozzi on regional air quality management plan and city level measures in Toscana are also available.

The slides of all presentation will be uploaded to:

<https://iiasa.ac.at/policy/applications/task-force-on-integrated-assessment-modelling-tfiam-under-lrtap-convention>.