Effects on air quality of semi-volatile engine emissions

EASVOLEE

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Special Interest Articles

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About EASVOLEE

EASVOLEE is a European research project assessing how semi-volatile engine emissions affect air quality. It focuses on understanding secondary aerosol formation from transport engines and developing strategies to reduce organic, inorganic, and nanoparticle aerosols. The project brings together eight partners from six countries, including FORTH, CNRS, TNO, Weizmann, MET.Norway, CRMT, PSI, and BFH, with the goal of improving air quality by limiting vehicle exhaust emissions. Launched in February 2023, EASVOLEE is funded by the EU Horizon Europe Research and Innovation Action (GA-101095457).

Fifth EU Clean Air Forum Brings Together Experts to Drive Air Quality Action

On 1–2 December 2025, Bonn hosted the fifth EU Clean Air Forum, organised by the European Commission and hosted by the European Centre for Medium-Range Weather Forecasts (ECMWF). The event brought together over 300 participants onsite at the World Conference Center Bonn, along with more than 500 attendees joining online.
The Forum gathered a diverse range of stakeholders from across the EU, including relevant authorities from Member States, representatives from the European Commission and other European institutions, industry leaders, civil society members, and the scientific community.

A dedicated exhibition area highlighted the latest knowledge on air pollution, innovative data tools, emerging technologies, and EU-funded research and environmental projects. Partners featured included the European Union Space Programme, European Environment Agency, Joint Research Centre, European Organisation for the Exploitation of Meteorological Satellites, and EU-funded projects such as Atmos, Modelair, RiUrbans, LIFE-CityTRAQ, LIFE GREEN AMMONIA, and LIFE-IP HUNGAIRY.
Our partner TNO, represented by Dr. Kuenen, presented results on ultrafine particle number emissions developed first within RI-Urbans and more recently within EASVOLEE, highlighting the project's role in advancing air quality research and innovative solutions.

Figure 1. *Panel session discussions at the Fifth EU Clean Air Forum*

Figure 2. *A view of the venue and exhibition area at the Fifth EU Clean Air Forum*

EASVOLEE has received funding from the European Union's Horizon Europe (2021-2027) research and innovation programme under grant agreement No 101095457.

"EASVOLEE will allow, for the first time, the simulation and monitoring, under real driving conditions, of the potential aerosol formation induced by the vehicle emissions"

EASVOLEE at the AEROSOLS Workshop during the TaP 2025 Conference

During the week of 3rd November 2025, representatives from the sister AEROSOLS participated in the TaP 2025 Conference, hosted by IFP Energies nouvelles in Rueil-Malmaison, and led the dedicated AEROSOLS Workshop.

The AEROSOLS Workshop, held on the afternoon of 6th November, opened with a warm welcome from Fotis Katsaros, followed by an insightful talk from Alexandru Ghiurca of CINEA – European Climate, Infrastructure and Environment Executive Agency – effectively setting the stage for the event.

The workshop featured comprehensive presentations from several leading projects: AEROSOLS (Soheil Zeraati Rezaei), PAREMPI (Hilkka Timonen), EASVOLEE (Spyros Pandis), and REALCHEM (Miikka Dal Maso). These presentations highlighted clear synergies and complementarities between the projects, as well as ideas for next steps toward improving air quality and public health.

Figure 3. *Fotis Katsaros delivering a warm welcome at the AEROSOLS Workshop.*

The event concluded with a focused panel discussion on primary and secondary aerosol emissions from transport, moderated by Philipp Eichler, Soheil Zeraati Rezaei, and Arnaud Frobert. EASVOLEE is proud to contribute to these collaborative discussions, advancing our understanding of transport-related aerosol emissions and supporting the development of strategies to improve air quality across Europe.

EASVOLEE Highlights Breakthroughs in Air Quality Research at LyonTech–La Doua

On Thursday, October 9, EASVOLEE had the pleasure of joining an inspiring learning expedition organized by ONLYLYON Invest, together with our partner IRCELYON (Institut de Recherches sur la Catalyse et l'Environnement de Lyon, CNRS).

During the event, Dr. Christian George and his team presented EASVOLEE's pioneering air quality research in an interactive session at LyonTech–La Doua labs—a vibrant hub where industry, research centers, and academia collaborate to drive innovation. Over 50 participants attended, sparking a lively exchange of ideas and strategies to advance sustainable solutions across borders.

The learning expedition provided a valuable opportunity for EASVOLEE to connect with key players in Lyon's innovation and sustainability ecosystem, showcasing our commitment to cleaner, smarter urban

The event underlines EASVOLEE's ongoing mission to combine research, technology, and partnerships to tackle air quality challenges and promote sustainable development across Europe.

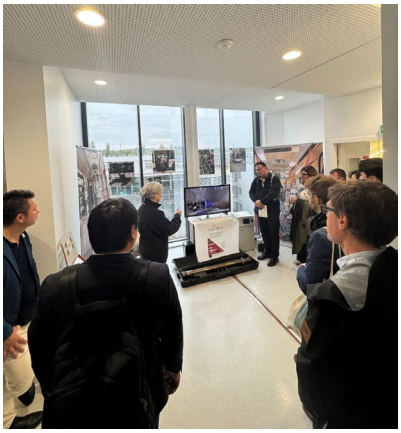

Figure 4. *A view of EASVOLEE's pioneering air quality research presentation in an interactive session at LyonTech–La Doua labs*

EASVOLEE Engages with the European Aerosol Community in 2025

From August 31 to September 5, EASVOLEE took part in the European Aerosol Conference (EAC) 2025 in Lecce, Italy, joining over 1,100 participants from around the world. Project partners presented three oral talks and five posters, showcasing advances in understanding vehicle emissions, secondary particulate matter formation, and health impacts of aerosols.

The conference offered lively discussions, networking opportunities, and the charm of Lecce's sunny weather and Italian cuisine. EASVOLEE's strong presence highlighted its commitment to linking research with policy for cleaner air and a better understanding of aerosols.

Figure 5. *Photos of EASVOLEE partners in EAC2025.*

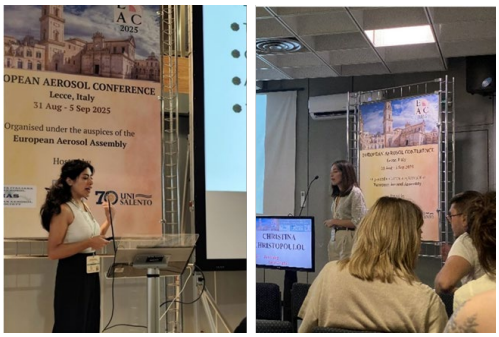

Figure 6. *Oral presentations by FORTH researchers, Carolina Molina and Christina Christopoulou, in EAC2025.*

EASVOLEE Joins Stakeholder Workshop on Transport Emissions in Brussels

On 10 December 2025, a stakeholder workshop on transport emissions was held in Brussels, Belgium, in collaboration with the sister project PAREMPI (Particle Emission Prevention and Impact: from real-world emissions of traffic to secondary PM of urban air). The workshop served as a platform to present the final results of PAREMPI and to discuss future actions for improving urban air quality, with a strong emphasis on policy development.

Figure 8. *Photo of some of the workshop attendees.*

The workshop was structured into three main parts. It opened with introductory remarks by Päivi Aakko-Saksa, PAREMPI Coordinator (VTT Technical Research Centre of Finland), Spyros Pandis, EASVOLEE Coordinator (FORTH), and Alexandru Ghiurca, Project Officer at CINEA. This was followed by presentations summarizing the policy brief and a panel discussion moderated by Päivi Aakko-Saksa and Spyros Pandis.

Figure 9 *Panel discussion during the workshop.*

The panel featured Georgios Tzamalis (European Commission), Thanasis Megaritis (Concawe – Road Sector), James Corbett (World Shipping Council – Maritime Sector), Rick Miake-Lye (Aerodyne – Aviation Sector), and Soheil Zeraati Rezaei (AEROSOLS Coordinator).

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EASVOLEE special session in the EGU 2026

An EASVOLEE-themed special session (AS3.32 Transport and urban air quality: Characterization and monitoring of real-world emissions, impacts on health, and mitigation strategies) has been co-organized by MI-TRAP, AEROSOLS, Net4Cities EASVOLEE, projects in the European Geophysical Union (EGU) General Assembly that will be held on 3-8 May 2026, both on-site in Vienna, Austria, and virtually. The session convener is Konstantinos Eleftheriadis (MI-TRAP) with co-conveners: Soheil Zeraati Rezaei (AEROSOLS), Erika von Schneidemesser (Net4Cities), and Christian George (EASVOLEE).

This session will include interdisciplinary contributions, both experimental and theoretical, ranging from real-world emissions across various transport sectors. It will cover emerging sources such as non-exhaust emissions and microplastics, chemical transformations of these emissions in the atmosphere and their potential impacts on climate and health. Contributions will span from fundamental studies to the evaluation and mitigation of these pollution sources, with the aim of improving the characterization of air quality in different regions, particularly in high-impact areas. The EASVOLEE consortium has contributed by submitting six abstracts to this session.

Stay tuned for further updates on EASVOLEE's participation and visit the EGU 2026 website for more details.

EASVOLEE Annual Meeting 2026

The third EASVOLEE Annual Meeting took place in person on 4-5 March 2026, at the École Polytechnique Fédérale de Lausanne (EPFL) in Lausanne, Switzerland. It also included the General Assembly on 4 March 2026.

The first day focused on the project's scientific objectives, covering vehicle exhaust emissions (LVOCs, SVOCs, IVOCs, VOCs, and other trace gases) under real and simulated conditions, secondary organic aerosol (SOA) formation and modeling, and the biological effects of primary and secondary particles. The day concluded with the General Assembly, which addressed administrative and financial matters, reporting, communication, and scheduling of the next annual meeting.

The second day focused on project applications and management, including the impact of transport engine emissions on European air quality and particle number, development of mitigation strategies and policy recommendations, and project management tasks such as administration, dissemination, outreach, FAIR data management, and gender equality.

The day also included the Executive Board meeting, where the technical report, financial reporting, upcoming deliverables, and final project event planning were discussed.

The meeting was attended by over 30 participants, both in person and online.

Figure 10. *Group photo of some of the EASVOLEE Annual Meeting 2026 participants.*