

27th TFMM Annual Meeting in Bled



Day 1 - Tuesday, April 28

- 09:20 – 12:00: Update on the Convention and Related Activities
- 13:30 – 15:30: Aerosol chemical speciation, secondary aerosols, condensables and CEC
- 16:00 – 18:00: VOCs contribution to O₃ pollution over Europe

Day 2 – Wednesday, April 29

- 9:00 – 11:00: Source Apportionment modelling applications
- 11:20 – 12:40: Natural contributions and Long-Range Transport
- 14:00 – 15:10: Country updates
- 15:10 – 16:00: Summary of the meeting

Housekeeping & Hybrid Rules



- **Hybrid Participation:**
 - **Online:** Please stay **muted** and keep cameras **off** unless you are the floor speaker
 - **In-person:** Please use the microphones for all comments so our online colleagues can hear you clearly
- **Interventions:**
 - Use the "**Raise Hand**" feature (online) or just raise your hand
 - Please state your name and affiliation before speaking
- **Logistics:**
 - **Lunch:** 12:00 (Day 1) and 12:40 (Day 2)
 - **Group Dinner:** Tuesday at 19:00



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TFMM update & 2026-2027 workplan implementation

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28 April 2026, Bled, Slovenia
27th TFMM Annual Meeting

2024-2025 work plan achievements



- Modelling Exercise – follow up of IMP in July 2022 (papers to be published, some analyses ongoing)
- IMP September 2024 carried out
- Low-Cost Sensor review - WMO report → Published: GAW Report No. 293
- Chemicals of emerging concern → Workshop held and the report published: EMEP/CCC report 5/2024
- BaP Case study → PUBLISHED !!! Thanks to Marta Garcia Vivianco et al., Intercomparison of estimates of atmospheric benzo(a)pyrene from four models in Europe and related health impacts, <https://doi.org/10.1016/j.jes.2026.04.005>
- Synergies with the EU Ambient Air Quality Directive (2024/2881) – during 26th Annual Meeting - First exchange on supersites approaches in different countries

2026-2027 workplan – items lead by TFMM



NO	Work plan item	Lead + contributors	Budget
1.1.1	Assessment of VOCs contribution on O3 pollution. Evaluation of impact of changing oxidative regime on regional air quality	TFMM, CCC, MSC-W	EMEP budget , Parties' in-kind contributions
1.1.2	Report/technical note on assessment of impact of natural emissions and long-range transport on air quality	TFMM, CCC, MSC-W, MSC-E	EMEP budget , Parties' in-kind contributions
1.1.3	Technical note on aerosol chemical speciation, source apportionment and source region identification, in cooperation with FAIRMODE	TFMM, MSC-W, CCC	Parties' in-kind contributions
1.1.4	<i>Monitoring of chemicals of emerging concern. Potentially an intensive measurement campaign with passive samplers across Europe in 2026</i>	TFMM, CCC, MSC-E	<i>EMEP budget, Parties' in-kind contributions</i>
1.1.6	<i>Report on in situ atmospheric composition activities for the relevant species. Proposal on intense observation exercises to document specific process/areas/conditions, in coordination with relevant stakeholders (i.e. ACTRIS). Report on evolution of measurement procedures and network in relation to new AQ Directive in cooperation with AQUILA, WMO/GAW and ACTRIS</i>	TFMM, CCC	EMEP budget

1.1.1

Assessment of VOCs contribution on O₃ pollution. Evaluation of impact of changing oxidative regime on regional air quality



- Summary of 2024-2025 modelling exercise – publications and the report
 - Impact of biogenic emissions on O₃ episodes during heat wave conditions
 - Chemical regimes (based on satellite NO₂ and HCHO tropospheric columns)
 - How well individual VOCs are reproduced by the models
 - Biogenic VOC emissions (differences between models)
- IMP2024 – September 2024 → modelling exercise
CCC kindly provided the list of available species/sites

1.1.2

Report/technical note on assessment of impact of natural emissions and long-range transport on air quality



- Potential collaboration with FAIRMODE/CAMS exercise on dust – possible outcome:
 - Cluster trajectories
 - Dust load
 - Impact on surface concentrations
- Natural fires
 - TFHTAP ?
 - CAMS service ?
 - National assessments?
- Other:
 - Possible connection with AAQD related activities on transboundary (country-to-country) transport
 - Ozone related analysis mostly included in 1.1.1

1.1.3

Technical note on aerosol chemical speciation, source apportionment and source region identification, in cooperation with FAIRMODE



- PM questionnaire
 - Purpose – to collect the information on PM chemical modules and SA approaches

A. Context

1. What is the aim of the modelling?
2. What is the context of the modelling

B. Source–Receptor components

3. Which approach do you use to estimate source–receptor relationships?
4. For which metrics are S–R relationships calculated?
5. How are sectorial components calculated?
6. How spatial components are represented (e.g. local, regional, country, other countries individual/joint etc.)
7. At which receptor level are components reported?
8. Are natural sources included (e.g. dust, sea salt, biogenic emissions, wildfires)?
9. For which time periods are S–R contributions estimated?
10. What types of outputs are produced from the S–R analysis?

1.1.3

Technical note on aerosol chemical speciation, source apportionment and source region identification, in cooperation with FAIRMODE



C. Questions specific for aerosol representation

11. How are aerosols represented in the model?
12. How many aerosol modes or size bins are used?
13. Which aerosol species are explicitly represented? (e.g. sulfate, nitrate, ammonium, organic aerosol, black carbon, sea salt, dust, other)
14. How is secondary inorganic aerosol formation (SIA) parameterized
15. How is secondary organic aerosol (SOA) formation parameterized
16. How many/which hydrocarbons groups are used to parameterized SOA production
17. How are heterogeneous reactions on aerosol surfaces parameterised (if applicable)?
18. How are dry deposition processes for particles parameterised?
19. How are wet deposition and scavenging processes represented?
20. Have there been recent updates to aerosol parameterisation in your model (last 3–5 years)?
21. Are further developments planned?

D. Uncertainty and validation

22. Are uncertainty analyses performed for S–R estimates?
23. Are results evaluated against observations or other models?
24. What are the key methodological challenges in your S–R analysis?

Google/Tems form vs. Google/Teams Excel file ?

1.1.6 Report on in situ atmospheric composition activities for the relevant species. Proposal on intense observation exercises to document specific process/areas/conditions, in coordination with relevant stakeholders (i.e. ACTRIS). Report on evolution of measurement procedures and network in relation to new AQ Directive in cooperation with AQUILA, WMO/GAW and ACTRIS



- **Discussions are ongoing** in the different countries; **Research playing a key role** in supporting implementation.
- The current capacity of ACTRIS Central Facilities (Germany / Czech Republic) is **not sufficient to support full-scale** European implementation; Initiatives to from **Metrology Institutes**. The question of **accreditation** of Central Facilities will need to be addressed in any case.
- There is a **risk of parallel systems** emerging between research and regulatory frameworks if coordination is not ensured.
- **Strengthened coordination between research infrastructures and regulatory bodies** will be essential

2026-2027 workplan – items in collaboration



NO	Work plan item	Lead + contributors	Budget
1.1.5	EMEP Report chapter on better representation of intermediate and semi-volatile condensable emissions in models and validation against existing observations of PM composition	MSC-W, CCC, CEIP, TFEIP,TFMM	EMEP budget
1.1.8	EMEP Report chapter on exploration of use of low-cost sensor data for evaluation of EMEP/uEMEP MSC-W model results	MSC-W, CCC, TFMM	EMEP budget
1.1.9	EMEP Report chapter on exploration of techniques for model fusion/mapping/AI to provide “best” fine scale air pollution maps for Europe, including techniques for bias corrections and bias-corrected projections	MSC-W, TFIAM, TFMM, CCC	EMEP budget
1.1.10	Technical report on pilot study of PAH pollution in Slovenia and Western Balkan countries	MSC-E, TFMM	EMEP budget, JSI
1.1.13	Synthesis of O3 mitigation options	TFHTAP, TFMM, MSC-W, CIAM	EMEP budget



Thank you

