



WG7: Emission Inventories and Projections for modelling applications

Road map & Activity Plan

S. López-Aparicio¹, M. Guevara²

¹ NILU, ² Barcelona Supercomputing Center

Plenary Meeting – Budapest 3-4th March

Content

- WG7 focus
- Reflections before the Road Map
- Activity Plan per Priority Element
 - Benchmarking tool and activities
 - Innovative component
 - Capacity Building
- Summary – Way forward

WG7 focus

Emission Inventories and Projections for modelling applications

WG7 focuses on the compilation of **high-resolution emissions** to be used as input to air quality modelling applications from local to national scale, including **assessment of future scenarios**, through:

- Benchmarking
- Identification of best practices
- Capacity building
- Development of recommendations and guidance

Reflections before the Road Map



Benchmarking has proven to be useful to **evaluate the quality of emission data** used in air quality assessments. Benchmarking highlights both **progress and gaps**.

Momentum is key to sustain progress and requires i) continuous activities, ii) follow-up exercises, iii) targeted questions, iv) links with other WGs



The benchmarking tool provides a **common methodology** for assessing emissions, it promotes comparability across countries and regions.

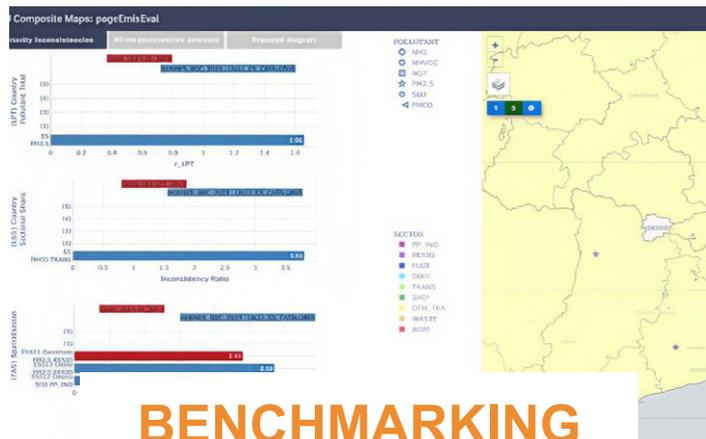
Tool usability is critical, feedback emphasized the importance of improving functionality (data upload, downloads, abbreviations, sector 2 sector) to support wider adoption



Webinars on **method, tool and protocol** were effective for increasing participation, discussion, and ensure diverse perspectives.

Needs; inconsistencies need to be addressed, and the **impact of improvements demonstrated**.

Discussion on Priority elements



**BENCHMARKING
TOOL & ACTIVITIES**



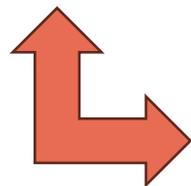
**CAPACITY
BUILDING**



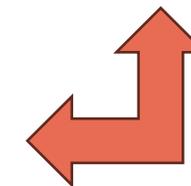
**INNOVATION
COMPONENT**

Knowledge transfer within & outside FAIRMODE

CAMS, TFEIP, NCP,
CEIP, IIASA,...



Technical Meeting - Malta



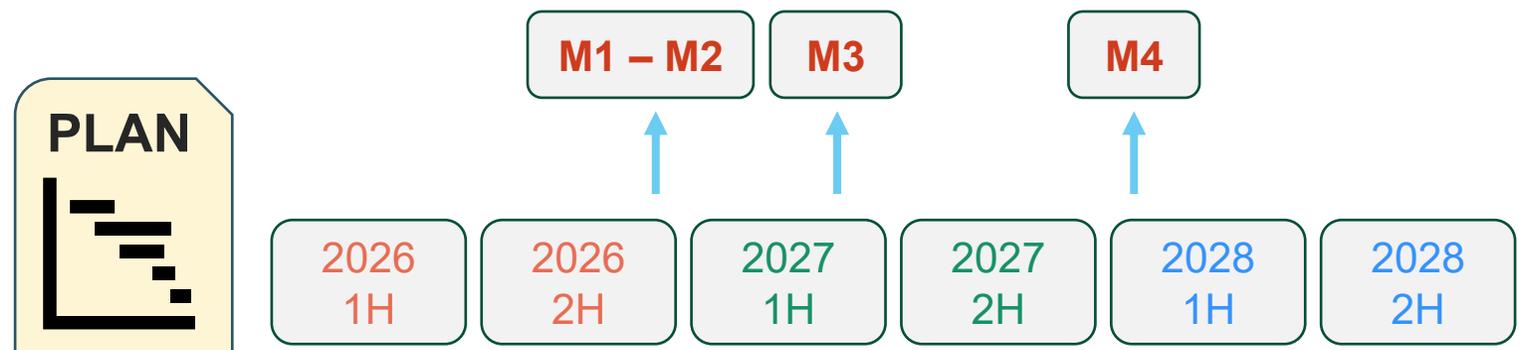
Benchmarking tool and activities

Improve the benchmarking tool first and please switch to gridded emissions

Focus on dominant sectors for each single pollutant

Plan:

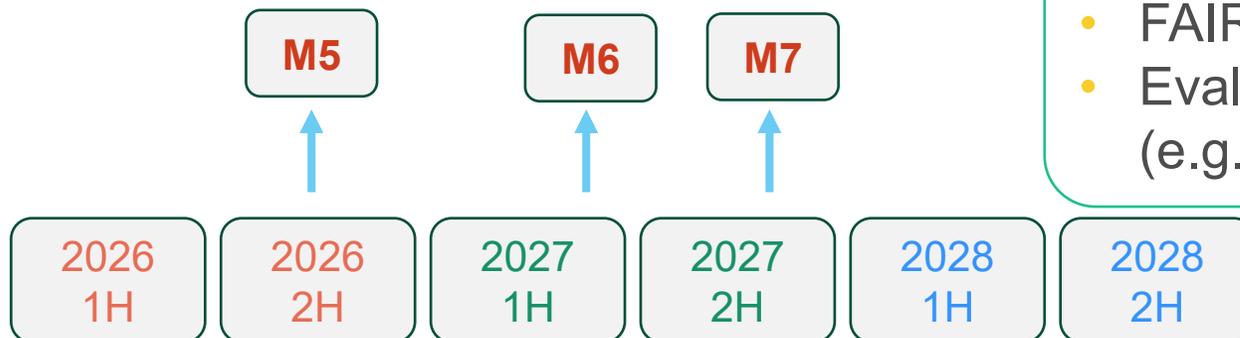
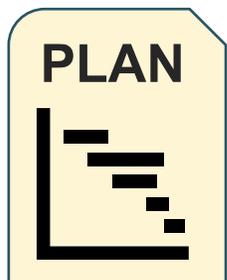
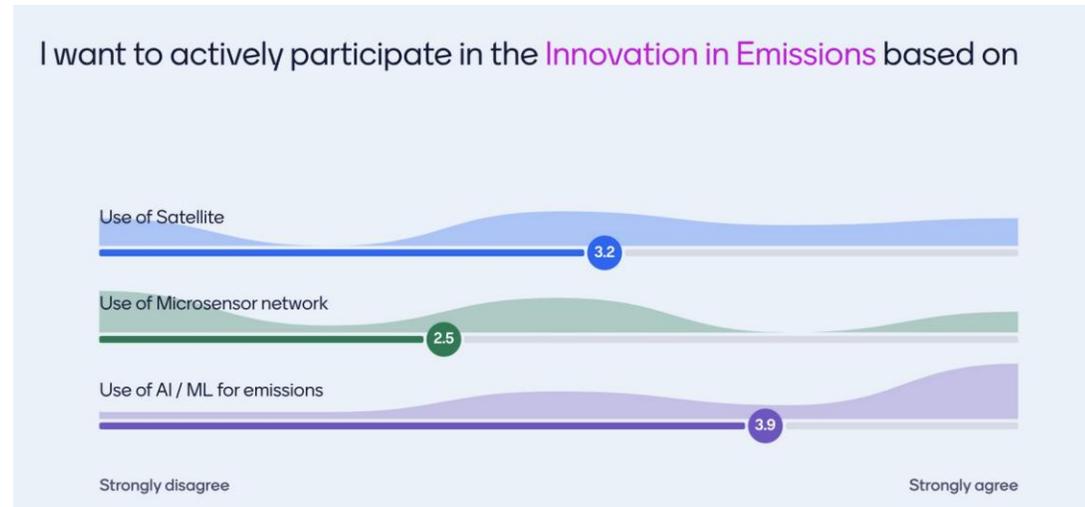
- i) Update the tool to include gridded data [M1]
- ii) Add functionality to evaluate single sector [M2]
- iii) Initiate benchmarking activities [M3]
- iv) Add additional datasets (e.g., satellite-based) [M4]



Inclusion of an Innovative component

Use of emerging methods (e.g., satellite data, microsensor network, AI / ML) to support & improve high-resolutions emissions in a broader sense:

- Validations of emission inventories
- Improve spatial / temporal distribution
- Estimation of activity data
- others methodological advances



- 1st session at the Technical meeting **[M5]**
- FAIRMODE scoped Webinars **[M6]**
- Evaluate synergies with other initiatives (e.g., TFEIP) **[M7]**

Capacity Building - Webinars

Participants highlighted the need for more webinars, and activities focusing on knowledge transfer and capacity building

Which specific topics should we bring within these webinars?

Which specific topics should we bring within these webinars?

Which specific topics should we bring within these webinars?

Temporal disaggregation of residential heating	Resuspension of road dust	Emission projections	industrial and agricult. resuspension emissions
Non exhaust	Impact of emissions spatial resolution to the model result	Consistency in methodologies used to adapt emissions for modelling across groups in different regions/countries	New directions defined by Air Quality Directive

Highlights (> 2 participants)

- Specific sectors: e.g., agriculture and industry;
- Spatial distribution: agriculture and residential;
- Impact of resolution
- Non-exhaust, suspension, road dust;
- Emission projections;

Webinars – 1st priority WG5 – WG7



1st Webinar “Current practice and challenges concerning emissions projections for planning applications” [M8; March / April 2026]

2nd Webinar “Webinar on synergies and challenges in developing emissions for planning applications across scales (local, regional and national).” [M9; before summer 2026]



Summary - way forward

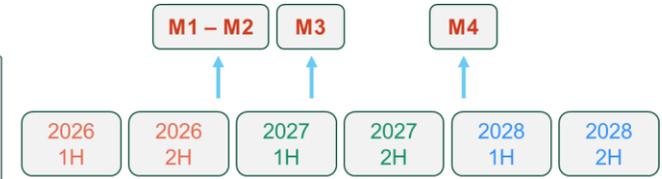


Priority

- Use of *satellite data*
- Use of *AI / ML*

INNOVATION COMPONENT

Will be initiated in the **Technical Meeting [2026]** and continue as scoped webinars [2027]



Priority

- Update benchmarking tool [end 2026]
- Initiate benchmarking activities [1st half 2027]



Priority – WG5 & WP7

1st Webinar “*Current practice and challenges concerning emissions projections for planning applications*” [March / April 2026]

2nd Webinar “Webinar on synergies and challenges in developing emissions for planning applications across scales (local, regional and national).” [before summer 2026]

