



FAIRMODE CT7

CT7 – High-resolution emissions

What did we achieve (2020-2022)?

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CT7 – The Road Map

- Metadata

Elaborating recommendations for a common system to document the use of ancillary data and define the relevant meta-data that support each emission inventory at urban area. The **metadata recommendations** will provide a common documentation framework to better understand the differences between inventories. The composite mapping platform will be used to support this task and **test its feasibility**

- Interaction with CAMS/TFEIP

Providing **relevant feedback** to improve European inventories used for **regulatory purposes** (EMEP) and Copernicus monitoring services (CAMS-REG).

- Best practice

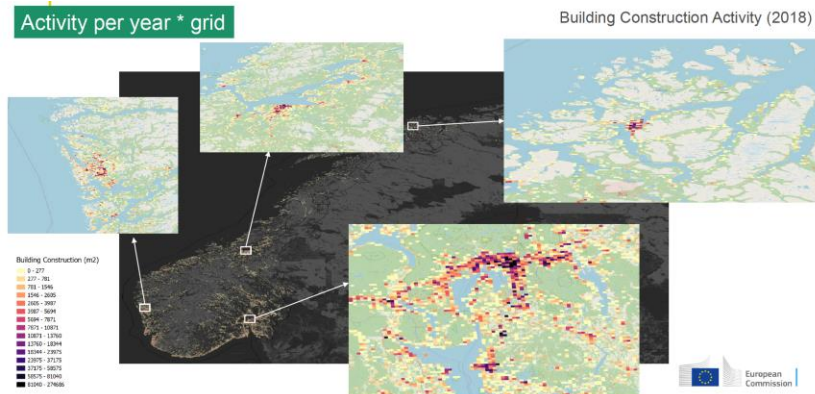
Identifying best practices and drafting final recommendations for the compilation of **traffic and residential heating** high resolution emission inventories.

- New sectors

Initiate benchmarking activities for the compilation of high-resolution emissions from new sectors (**construction, off-road, agriculture**). This will be achieved through applying the benchmarking methodology (quality assurance) to a large number of datasets to capture local specificities across Europe. The composite mapping platform will also support this benchmarking activity.

NEW SECTORS - NRMM

- The need to provide guidance for other sectors than traffic and residential heating has been brought by local and national agencies, and modelers. NRMM has not been a priority sector, however it is becoming more important in urban areas
- Questionnaire (specific for construction) was launched during 2021 to map current practices, the existing knowledge and identifying gaps
- Specific sessions were organized to share practices.



KEY CHALLENGES

- **Data compilation;** Multiple sources of activity data need to be collected and processed.
- **Emission factors;** knowledge on fleet composition and EF for new machinery
- **Spatial distribution;** additional challenge with future scenarios
- **Temporal distribution;** additional challenge when addressing meteorology driven emissions (non-exhaust)

European Commission

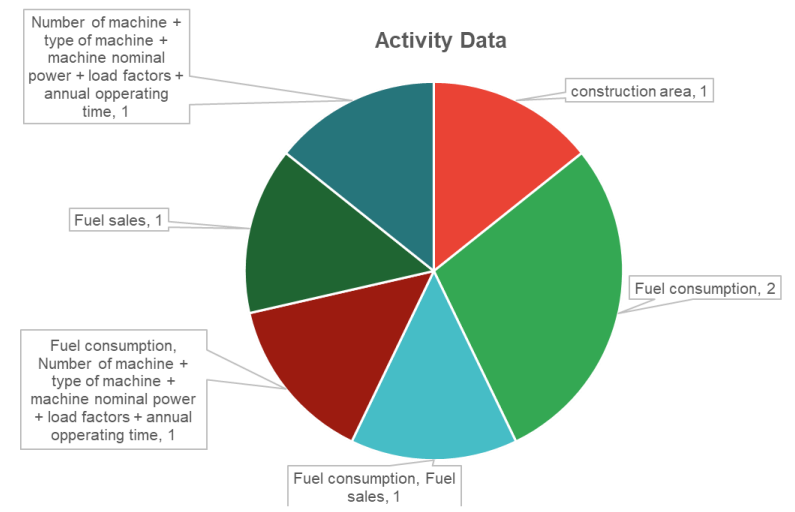
FAIRMODE

High-resolution emission inventories (CT7)

Section 1 of 7

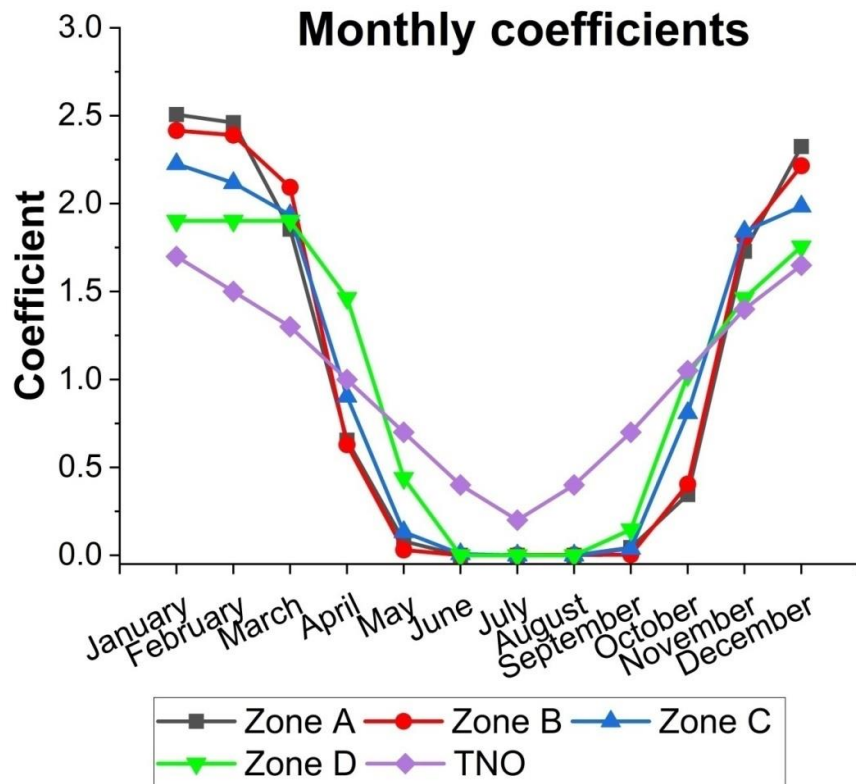
Emissions from NRMM in construction

This questionnaire is part of the activities in CT7 - High-Resolution Emissions in FAIRMODE (<https://fairmode.jrc.ec.europa.eu/>). The purpose of the questionnaire is to map practices, methods and data sources used for the compilation of high-resolution emissions from non-road mobile machinery (NRMM) used in construction.



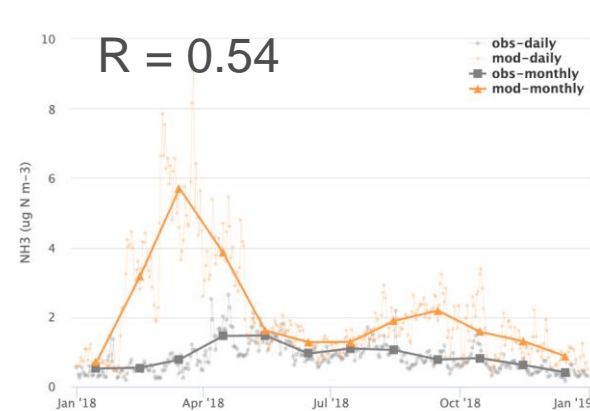
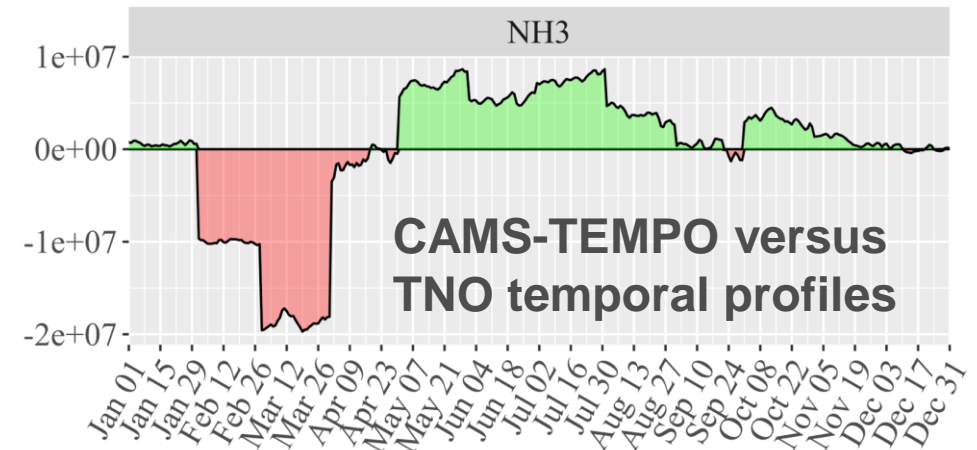
BEST PRACTICES – Time variation of emissions

Residential sector: Importance of the spatial variability on the residential heating season (linked to different climate zones and changes in outdoor temperature)

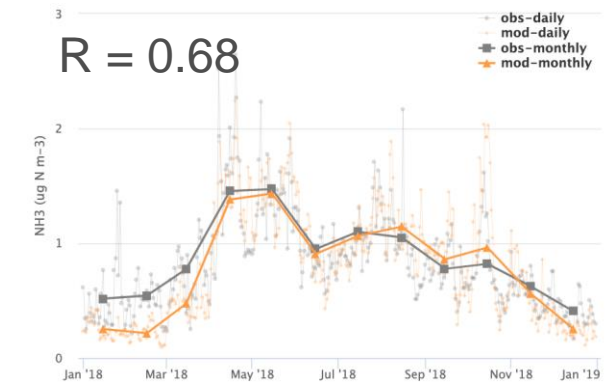


Sandy Fameli (NOA)

Agricultural sector: Impact of using dynamic versus static temporal profiles on NH3 emissions & concentrations



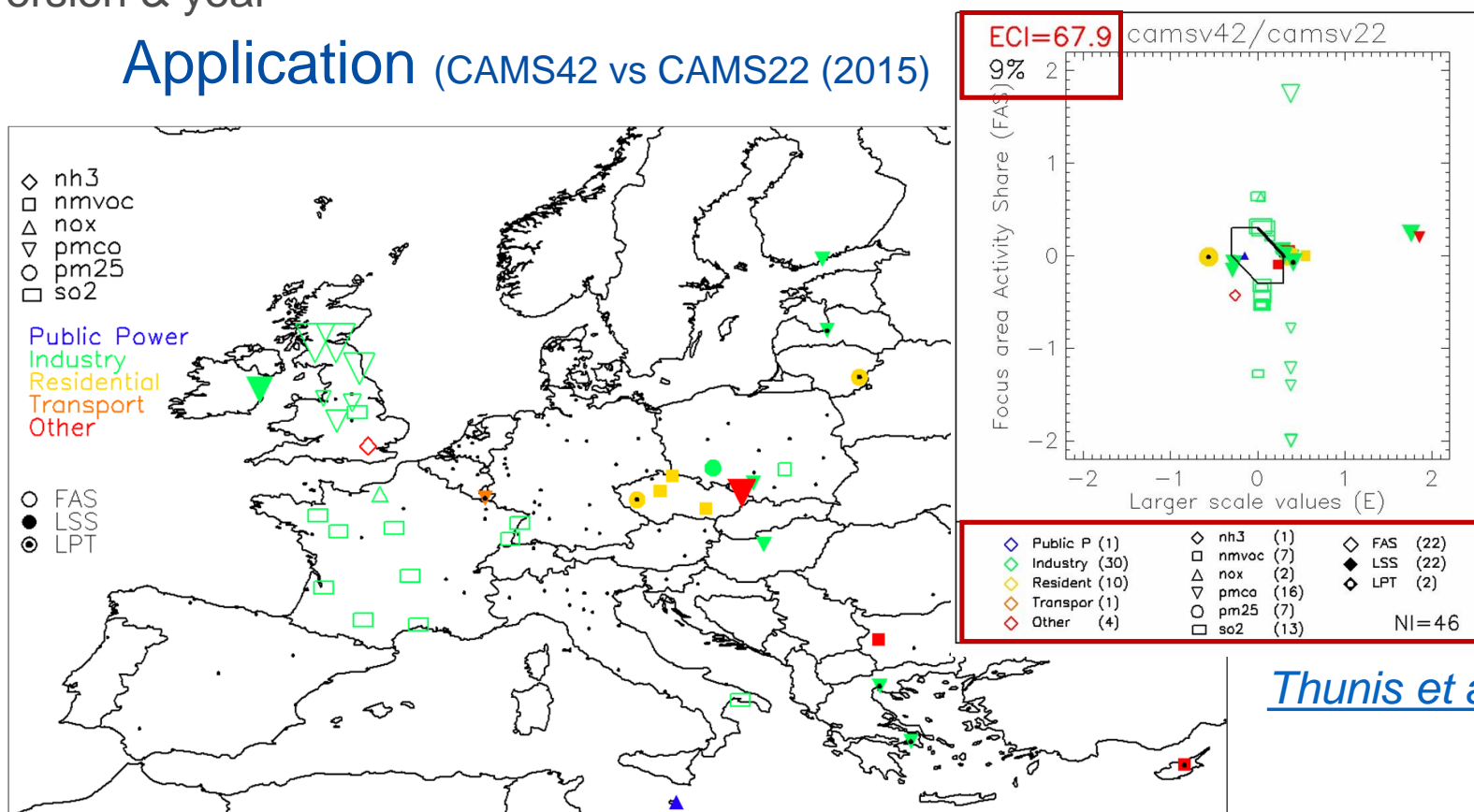
Marc Guevara (BSC)



BENCHMARKING – feedback to improve European inventories

- New screening approach developed by JRC to flag large differences (inconsistencies) between emissions
- Flexible method: choice of sectors/species, areas of study, inconsistency threshold
- Possible uses: inventory vs. inventory / Inventory version vs. inventory version / Inventory version & year vs. inventory version & year

Application (CAMS42 vs CAMS22 (2015))



Thunis et al. (GMD, 2022)

CT7 – What did we achieve?

• Metadata

Elaborating recommendations for a common system to document the use of ancillary data and define meta-data.

- We **defined a decision tree** to report metadata
- The composite mapping was not use to support its **feasibility** due to the complexity of the decision tree.
- We drafted **recommendations** for documenting emissions as part of AAQD

• Interaction with CAMS/TFEIP

- Organized **interaction** FAIRMODE / CAMS
- Carried out **benchmarking activities** (new JRC screening approach)
- Initiated **support to TFEIP**

• Best practice

- **Knowledge transfer activities:** organized session for share/exchange practices;
- We organized specific sessions on **time variation** of emissions (residential, traffic, construction, agriculture)

• New sectors

Initiate benchmarking activities for the compilation of high-resolution emissions from new sectors (**construction, off-road, agriculture**).

- **Knowledge transfer activities:** organized NRMM session for share/exchange practices;
- **Questionnaire** for construction to map current practices.



Thanks!

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FAIRMODE CT7

FAIRMODE Technical Meeting

18-20 October 2022

Joint
Research
Centre