FAIRMODE Update

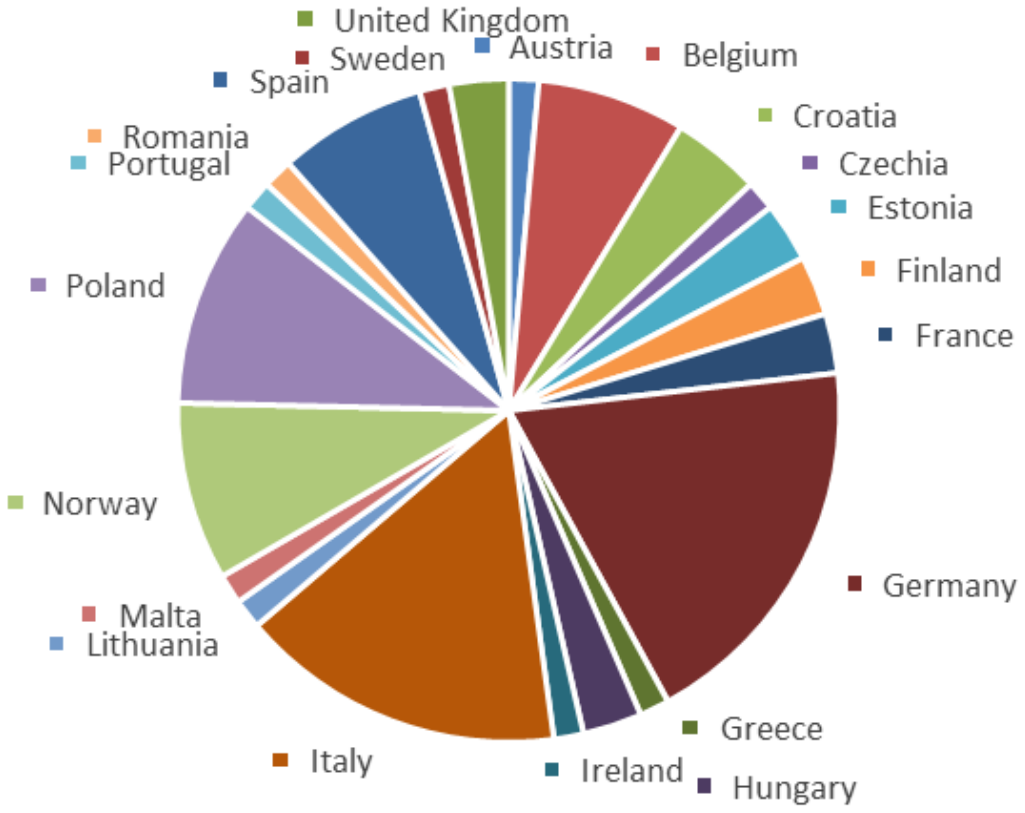
E Pisoni, P. Thunis

FAIRMODE 13th plenary meeting, Berlin, Feb 2020

- 80 participants from 20 countries
- 20 National Reference Points

<u>Objectives of the meeting:</u>

1. Presenting / endorsing the 2020-2022 roadmap
2. Providing an overview of the status of the on-going and planned collaborations



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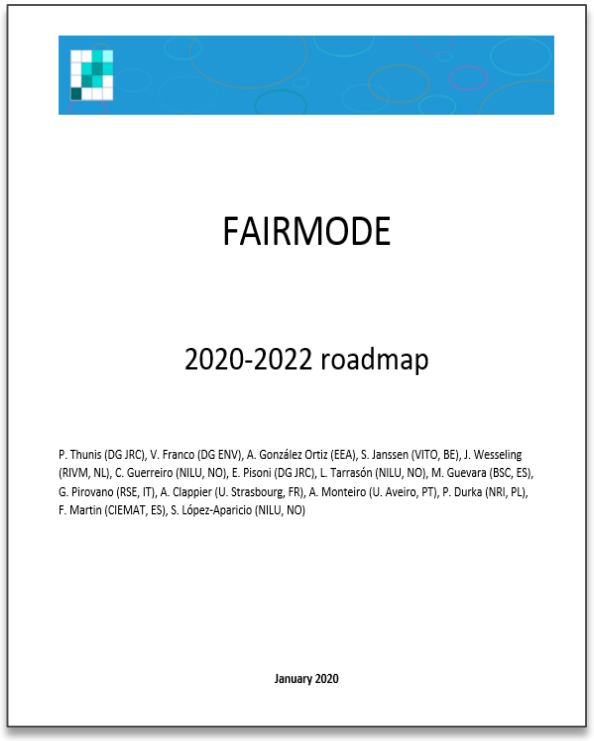
From 2020 towards 2022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2020-2022 roadmap

P. Thunis (DG JRC), V. Franco (DG ENV), A. González Ortiz (EEA), S. Janssen (VITO, BE), J. Wesseling (RIVM, NL), C. Guerreiro (NILU, NO), E. Pisoni (DG JRC), L. Tarrasón (NILU, NO), M. Guevara (BSC, ES), G. Pirovano (RSE, IT), A. Clappier (U. Strasbourg, FR), A. Monteiro (U. Aveiro, PT), P. Durka (NRI, PL), F. Martin (CIEMAT, ES), S. López-Aparicio (NILU, NO)

January 2020

- **New organisation** in terms of cross-cutting tasks (CT) rather than into parallel working groups
- A specific outcome: **benchmarking, recommendations, guidance** is associated to each CT, depending on the level of maturity of each activity
- The discussion led to a **general agreement on the current roadmap and the structuring of activities**.

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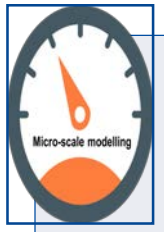
Cross-cutting tasks

Source apportionment to support AQ management

Development of a QA/QC protocol for AQ assessment

Quality control indicators for AQ forecast



Micro-local scale air quality modelling

Best practices for local and regional AQ management

Near real-time assessment with low-cost sensors

Urban scale emission inventories

Exposure and exceedance model indicators and network optimization

Effectiveness and robustness of air quality projections

Benchmarking → Recommendations → Guidance

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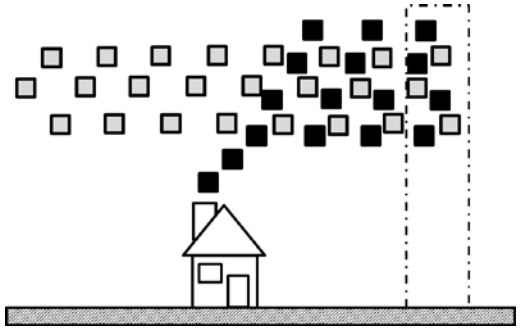
Source apportionment to support AQ management

Apply SA methodologies on very simple examples



Show strengths and limitations of different methods
→ Increments, receptor models, tagging, brute force

Guidance on fitness for purpose
→ Planning, QA/QC

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Source apportionment to support AQ management

- **So far, version is contributed by ~15 experts**
  - Veronique Riffault
  - Eivind Waersted
  - Stig Hellebust
  - Mihaela Mircea (to be confirmed)
  - Jenny Stocker
  - Jana Matejovica
  - Stefania Gilardoni
  - Angyal Aniko
  - Giovani Bonafe
  - Francesco Montanari
  - John Bartzis
  - A. Enriksson
- **V3 has been sent for final round of review (end of April)**
- **Update & publish (May)**

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Source apportionment to support AQ management

1. Generalization to other species than PM (e.g. O_3, NO_2)
2. Quantification of the linearity/non-linearity limit for species
3. Combined SA approaches to support planning
4. SA to support the ex-post assessment of AQP
5. Dummy guide on modelling (e.g. receptors, tagging, Lagrangian…)
6. Collect and refer to real-world examples
7. …

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Best practices for local and regional AQ management

- **1. Background Analysis**
- **2. Air Quality Plan objectives**
- **3. Proposed measures to improve air quality**
- **4. Assessing effectiveness of possible measures**
- **5. Selection and prioritizing measures**

Best practices for local and regional AQ management

- **1. Background Analysis**
- **2. Air Quality Plan objectives**
- **3. Proposed measures to improve air quality**
  - *Methodology to convert ‘measures’ into ‘emissions and concentrations change’:*
    - *How to integrate energy, traffic and economic modelling? How to integrate national and local plans?*
    - *How to deal with meteorology / boundary conditions, for future projections? What about uncertainties?*
- **4. Assessing effectiveness of possible measures**
- **5. Selection and prioritizing measures**

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Best practices for local and regional AQ management

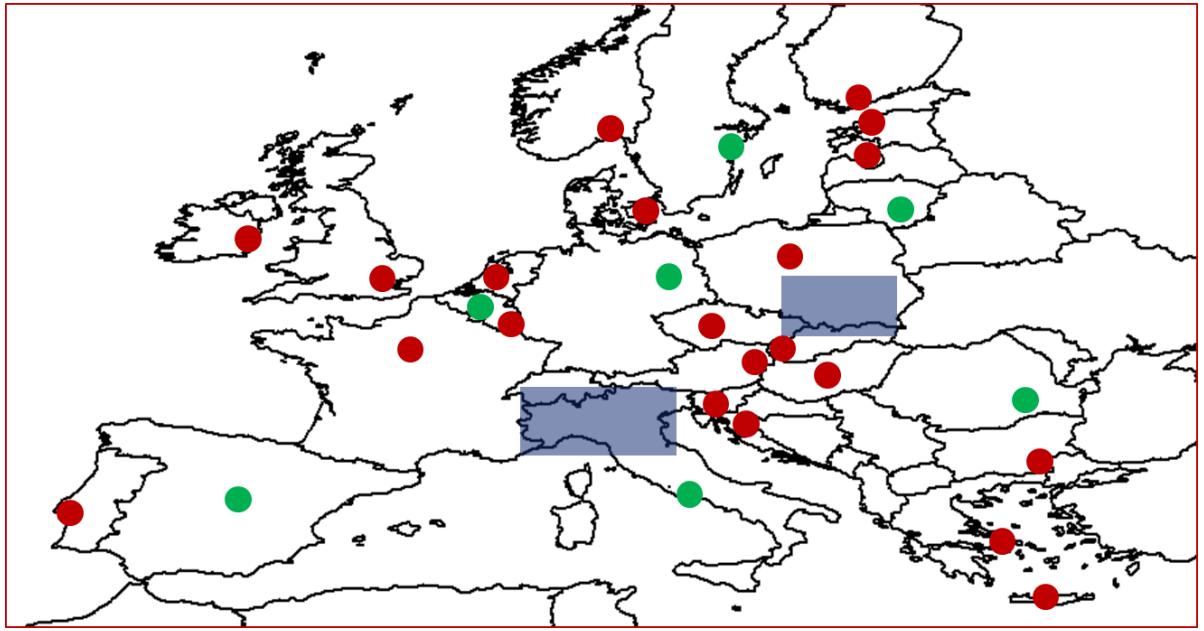
- Next steps
  - May: videoconference to organize the work
  - September: technical meeting
- At first, collect existing approaches and discuss on best practices
- Willing to contribute
  - BE, AT, DK, UK, IT, NO, EEA

Effectiveness and robustness of air quality projections

- The overall scope of this activity is to address the issue of the sensitivity of model responses to emission changes: **Benchmark** and **Understand** the differences
- The activity proposed here is continuous, in contrast with inter-comparison exercises that are finite in time.
- Specific focus on the impact of **local and regional emission reductions**, in contrast to the current inter-comparisons exercises where reductions are generally applied at EU scale

Effectiveness and robustness of air quality projections

- Spatial focus:
  - urban and regional scales. EU capitals plus few regions
- Temporal focus:
  - short term vs long term
- Pollutants focus:
  - The focus is on ground level PM10, PM2.5 and O3 but NO2 is considered as well
- Indicators focus:
  - absolute concentrations, potencies (concentration delta divided by emissions delta), exposure,etc…



Effectiveness and robustness of air quality projections

- EMEP and WRF-CHEM run to initially populate the platform
- Aim: to compare
  - EU top-down modelling systems
  - Local / regional modelling systems
  - Two modelling versions (e.g. versions 1 & 2)
  - …
- Representatives from the PL, IT, AU, CZ, DK agreed to contribute
- The JRC can develop an interface to compare the results.

Conclusions

- New FAIRMODE structure:
  - Cross-cutting tasks
- Of possible interest for TFIAM / EPCAC
  - Source Apportionment, Handbook on plans and programmes, Model intercomparison for local emission reduction scenarios
- Please join our activities:
  - More information at https://fairmode.jrc.ec.europa.eu/