

WG5-WG9: AQ management & planning

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A new structure for the WG on Planning

- Design of effective measures
- Design of AQ plans



- Robustness of models to support AQ Plans
- Intercomparison exercises



- Design of effective measures
- Robustness of models to support AQ Plans
- Design of AQ plans
- Support e-Reporting
- *(Intercomparison exercises – on hold)*

chairs: Stijn Janssen, Joana Soares, Enrico Pisoni

Two main objectives for WG5

- Design & reporting of AQ measures, how do we do in an effective and efficient way?
- How do we use models in support to the AQ planning process? What are the main obstacles, both from a technical and governance perspective?

Reporting AQ measures

Towards an effective and efficient approach

Why a FAIRMODE contribution on this?

Short-term aim : Contribute to the foreseen revision of the IPR (dataflow H to K)

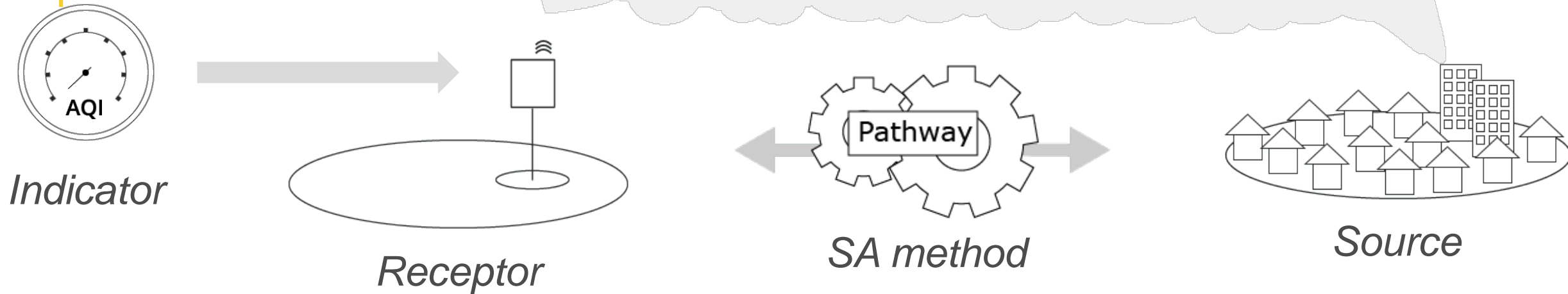
Longer-term aims :

1. Favor exchange of good practices through easily accessible, complete and "low-burden" information on plans and programs
2. Facilitate QA/QC of plans and programs

Tools:

1. FAIRMODE reporting template developed in WG5 (and WG1)
2. SHERPA and/or source allocation interactive tool

Template: "Reporting enough but not too much"



1. Context and measure's general description

- General information about the domain under study:
 - General features of the domain
 - Emissions and concentration overview
 - Existing **Sectoral or Geographical plans** that could impact future air quality
- General **description of the measure**, with sufficient detail to allow for possible replicability

2. 'Source' (emissions)

- Over which **spatial area** is the measure applied (city, core city, street, ...)?
- Is the measure applied year long, or for specific **time periods** (only winter...)?
- Over **which sectors/activity** is the measure applied?
- Over **which pollutants**?
- By **how much** does the measure reduce the overall emissions (full, 20%, ...)?
- Which **methodology** do you use to estimate the emission change?

3. 'Receptor' (concentrations)

- **Which indicator** do you select to assess the impact of the measure (e.g. concentration, population exposure)?
- Over which **spatial area** do you average the indicator (city, street, set of stations, ...)?
- Over which **time period** do you average the indicator (hours, days, year, ...)?
- By **how much** does the indicator change as a response to the application of the measure?
- Which **methodology** do you use to quantify the concentration change (e.g. brute force modelling)?

4. Cost-benefit and ex-post analysis

- What is the estimated cost of the measure?
- What is the estimated benefit of the measure?
- Which methodologies are used to quantify/estimate benefit and cost?
- Did you consider issues on acceptability of the measure?
- Did you perform an ex-post analysis of the impact of the measure?

DB of air quality measures: Current and future

- Tools:
- 1) FAIRMODE template
 - 2) SHERPA source allocation

Current status

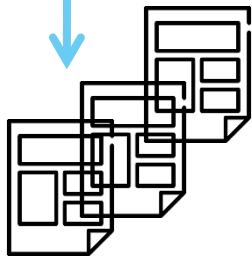


JRC
AQ Measures DataBase

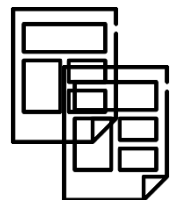
70 measures from various cities

Little use because reported measures lack critical information to allow an exchange of best practices across countries / cities

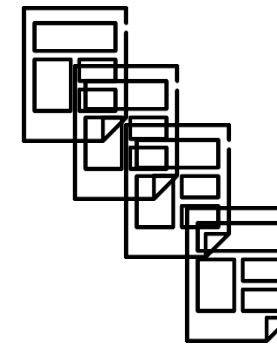
Conversion 2 FAIRMODE template ?



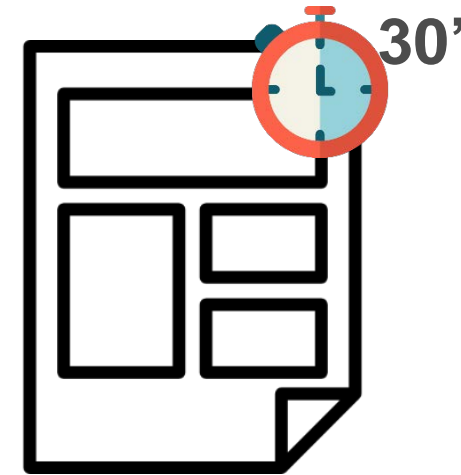
SHERPA source allocation ?



Call to FAIRMODE



4 user cases



WG5 template

Next steps

1. Consolidate the template (e.g. limit the number of open questions to facilitate screening)
2. Collaborate with EEA to test/improve the template in the context of the IPR revision – link to Air Quality Portal)
3. Translate existing measures (~70) to the template format where possible (depending on contact points)
4. Collect measures and plans from FAIRMODE community [only 30' homework :)]
5. Link IPR & AQ Database (for discussion)
6. Call to other projects (in the longer term), e.g. INTERREG, LIFE, Covenant of Mayor / Climate Neutral Cities

SHERPA-cloud (online)

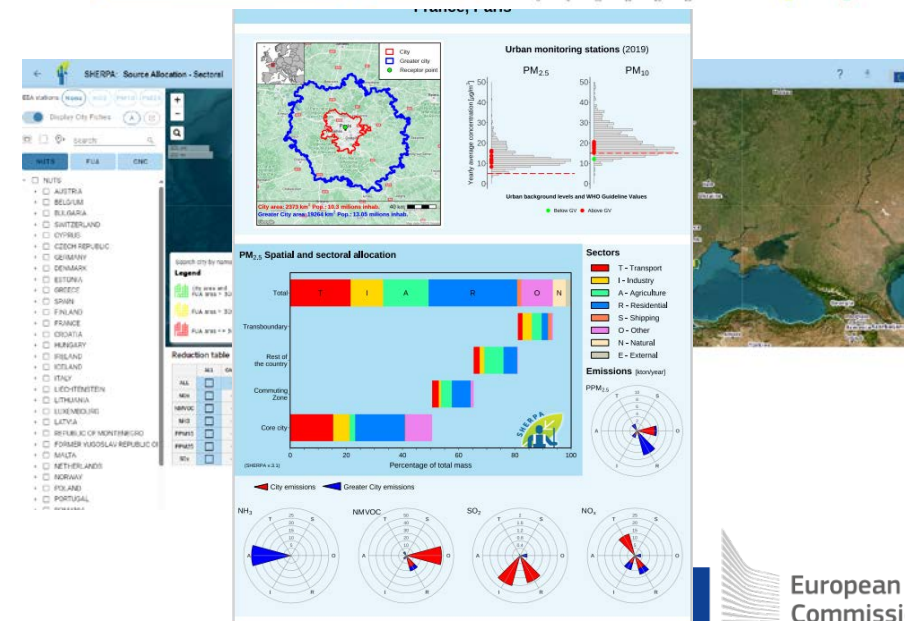
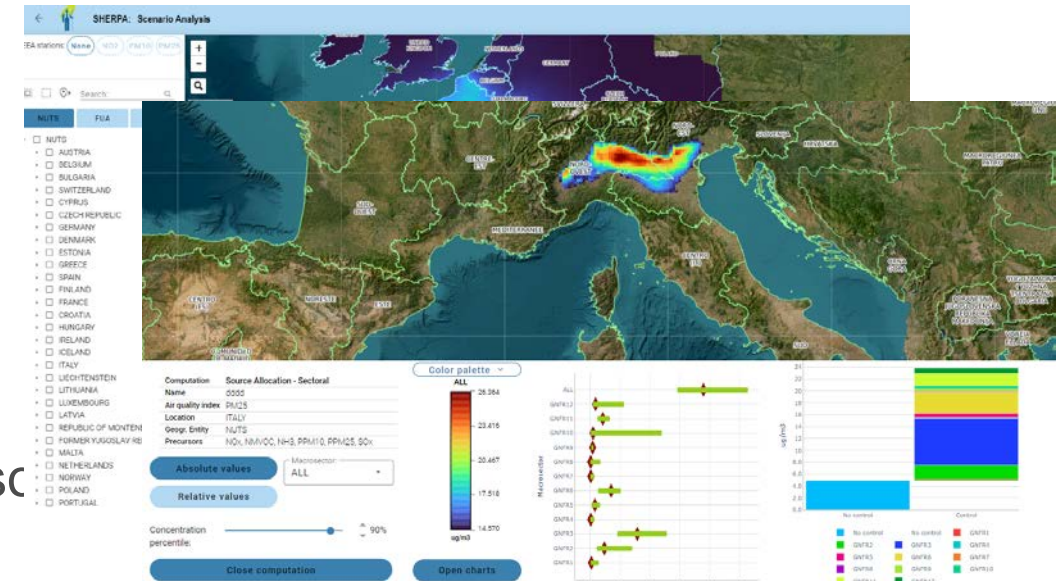
- Much faster (x5) than offline version
- Main features
 - Emissions: 2019, CAMS 6.1 + condensables
 - Spatial resolution: 0.1 x 0.05 (around 6 km res)
 - Air Quality Model: EMEP version 4.45
 - Meteorology: IFS 2015

Main modules

- Scenario analysis + costs
- Source allocation
- Atlas view (>700 cities)

Future developments

- Split between high/low sources
- Temporal and spatial downscaling




- Tools:
- 1) FAIRMODE template
 - 2) SHERPA source allocation


<https://aqm.jrc.ec.europa.eu/Section/Sherpa>



Air Quality Modeling

Home Δ Assessment Δ Emissions **Sherpa** Others

Home > About the European Commission > EC Science Hub > AQM

SHERPA
SHERPA is now available at:
[SHERPA Dashboard](#) 
To use SHERPA the **EU Login** is required

EU Academy
The SHERPA training is now on 'EU Academy' and available at:
[SHERPA: A tool to support the design of urban/regional air quality plans](#) 

PM2.5 Urban Atlas
The 2021 PM2.5 Urban Atlas has been published. More details here:
[Atlas maps main sources of air pollution for 150 European cities](#) 
[Data used to produce the 2021 PM2.5 Atlas](#) 



Note: A training session is organised every year around November

Interactive source allocation maps to support the reporting of AQ measures

Development of **SHERPA-based EU wide source allocation maps** at 6 km resolution

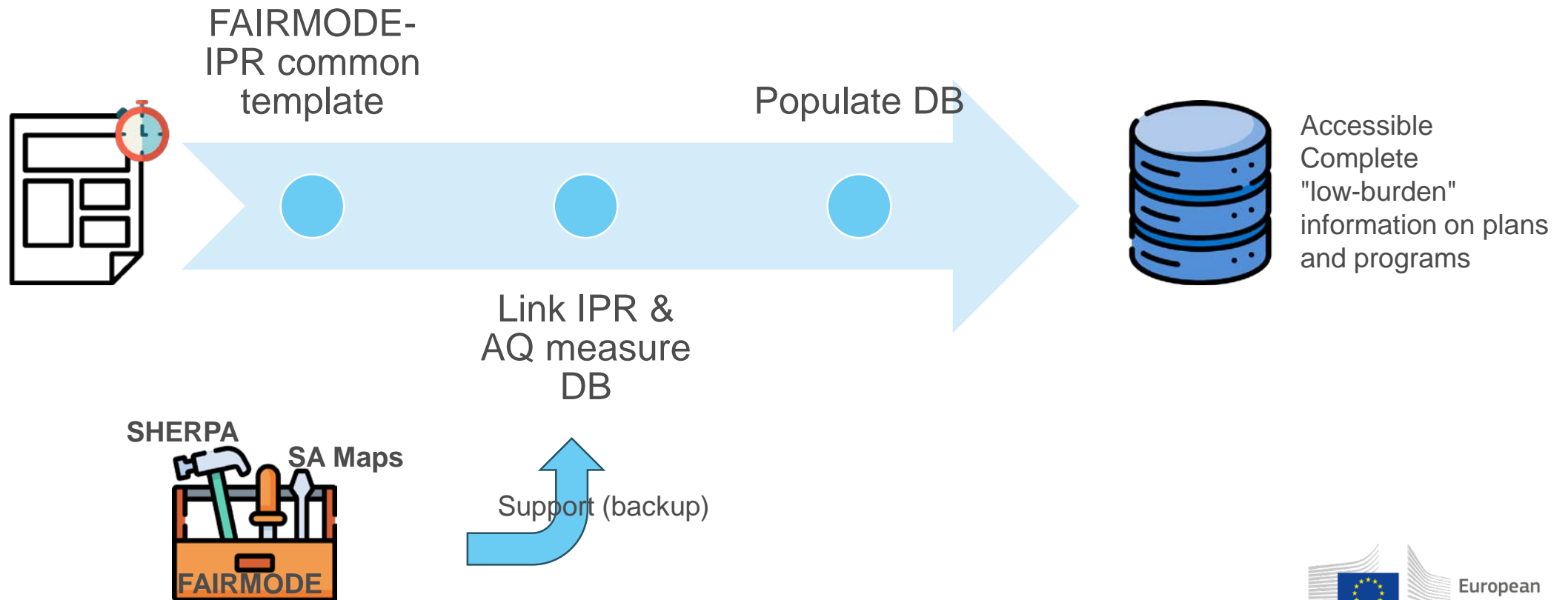
Purpose: inform on the impact of emission reduction (AQ measure) on concentration depending on:

- Geographical scale of the source (policy control area)
- Sector
- Pollutants

Aim: provide a backup service to support reporting, in particular the quantification of the impact of specific measures/plans

Discussion

At the end of the process, the DB of AQ measures should be a useful tool (avoiding reporting for the sake of reporting!). Is the proposed approach the optimal one?



How do we use models in support to the AQ planning process?

What are the main obstacles, both from a technical and governance perspective?

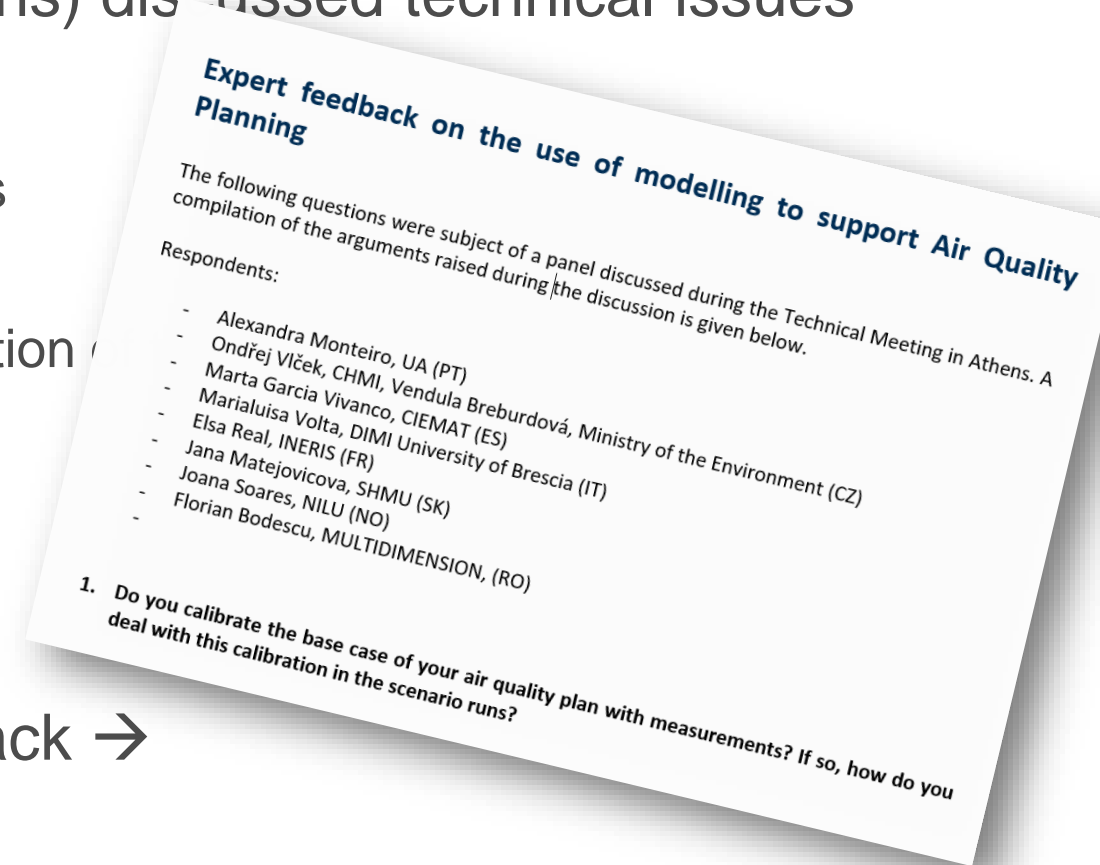
Models in support of AQ Planning

A panel session @ Technical Meeting (Athens) discussed technical issues of model setup in planning mode:

- Model/measurement bias in future AQP scenarios
- Integration of a local AQP in a national AQP
- Evaluation of future compliance after implementation
- Time horizon of the AQP
- Meteo variability
- Evaluation of individual or packages of measures

A note is being compiled with written feedback → input for next Technical Meeting

What is priority for the FAIRMODE community?



Models in support of AQ Planning

Observation at EC level that the overall quality of the submitted AQP's is (very) poor

- Measures are often poorly defined (area of implementation, timeline, expected uptake, enforcement...)
- Measures are often not quantified in terms of emission reductions
- Measures (or the AQP as a whole) are often not quantified in terms of concentration reductions

Models in support of AQ Planning

→ Is the FAIRMODE community involved in the design and preparation of the AQP's at local and national level?

→ If not, what is the reason? What are the (governance) obstacles?

→ How can FAIRMODE further support this process?