



# Air Quality

## - *revision of EU Rules* -

1 March 2021

*European Commission*  
*Clean Air Unit*

# What's next?

The European Green Deal announces that the Commission will adopt a **zero pollution action plan** for air, water and soil in 2021.

The Commission will draw on the **lessons learnt from the evaluation** of the current air quality legislation.

The Commission will also propose to strengthen provisions on **monitoring, modelling** and **air quality plans** to help local authorities achieve cleaner air.

The Commission will notably propose to revise **air quality standards** to align them more closely with the World Health Organization recommendations.



# Air quality – revision of EU rules

Air policy revision: focus on three policy areas

Address five shortcomings and twelve consequences

Focus: strengthening the provisions on monitoring, modelling and plans

Our timeline ...

... and how FAIRMODE can help

# Air policy revision: focus on three policy areas

## Augment the current Ambient Air Quality Directives for three policy areas

- **Policy area 1:** closer alignment of the **EU air quality standards** with scientific knowledge including the latest recommendations of the World Health Organization (WHO).
- **Policy area 2:** improving the **air quality legislative framework**, including provisions on penalties and public information, in order to enhance effectiveness, efficiency and coherence.
- **Policy area 3:** strengthening of **air quality monitoring, modelling and plans**.

→ *to be further developed into more detailed options/scenarios for each policy area, to address five shortcomings and their consequences*

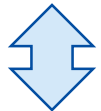
by  
Q3 / 2022

# Health outcome shortcomings

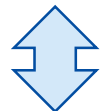
Premature deaths due to air pollution halved during last two decades, but ...

## Health outcome shortcomings

EU Standards are not fully aligned with scientific advice ...



Exceedances above WHO Air Quality Guidelines with negative health impacts persist



Lack of flexibility to adapt to evolving science and new recommendations

Pollutants	2005 WHO AQ Guidelines	EU Air Standards	EU Exceptions
PM <sub>10</sub> (year)	20 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>	-
PM <sub>10</sub> (day)	50 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	(35d a year)
PM <sub>2.5</sub> (year)	10 µg/m <sup>3</sup>	25 µg/m <sup>3</sup>	-
PM <sub>2.5</sub> (day)	25 µg/m <sup>3</sup>	-	-
NO <sub>2</sub> (year)	40 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>	-
NO <sub>2</sub> (hour)	200 µg/m <sup>3</sup>	200 µg/m <sup>3</sup>	(18d a year)
SO <sub>2</sub> (daily)	20 µg/m <sup>3</sup>	125 µg/m <sup>3</sup>	3d a year
O <sub>3</sub> (8-hour)	100 µg/m <sup>3</sup>	120 µg/m <sup>3</sup>	(75d in 3yr)

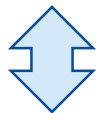
WHO Air Quality Guidelines are being revised in 2021

# Implementation & enforcement shortcomings

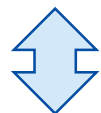
Frequency, extent and magnitude of exceedances has declined, but ...

## Enforcement shortcomings

Exceedances are not always addressed sufficiently and/or on time ...



Air quality plans and measures have often proven not sufficiently effective



Insufficient penalties and damages (access to justice) linked to exceedances

As of 5 Feb 2021, still **31 cases** addressing 18 Member States (+ 1 vs UK) related to bad application:

- 15 particulate matter (PM<sub>10</sub> and/or PM<sub>2.5</sub>)
- 13<sup>1</sup> nitrogen dioxide (NO<sub>2</sub>)
- 1 sulphur dioxide (SO<sub>2</sub>)
- 2 monitoring problems

Of these, 13 cases (i.e. 9 Member States + 1 vs UK) have been referred to the Court of Justice of the EU.

6 cases have seen rulings: BG, PL, RO, IT, HU (for PM<sub>10</sub>) and FR (for NO<sub>2</sub>) .

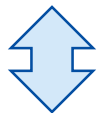
*These cases address both exceedances of air quality standards and not keeping these as short as possible.*

# Air quality governance shortcomings

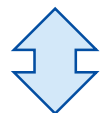
To limit exceedances, competent authorities develop plans, but ...

## Governance shortcomings

Air quality plans do not always address all sources effectively ...

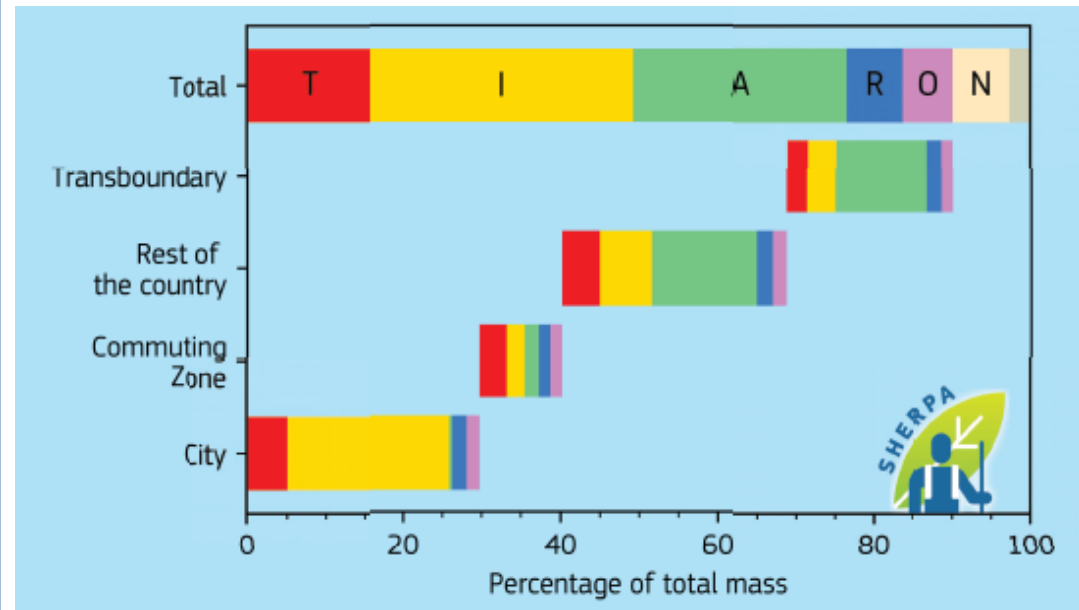


Local air quality is impacted by emissions outside local control



Some measures may be ineffective, or seem disproportionate

Example: Air pollution (here:  $\text{PM}_{2.5}$ ) in Frankfurt (DE) is a combination of emissions in the city, its surroundings, the rest of the country and from other parts of Europe:



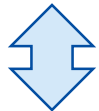
This combination requires air quality plans to address all sectors & all scales – in a coherent manner (!)

# Air quality assessment shortcomings

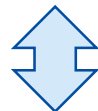
More than 4.000 air quality monitoring stations deliver robust data, but ...

## Assessment shortcomings

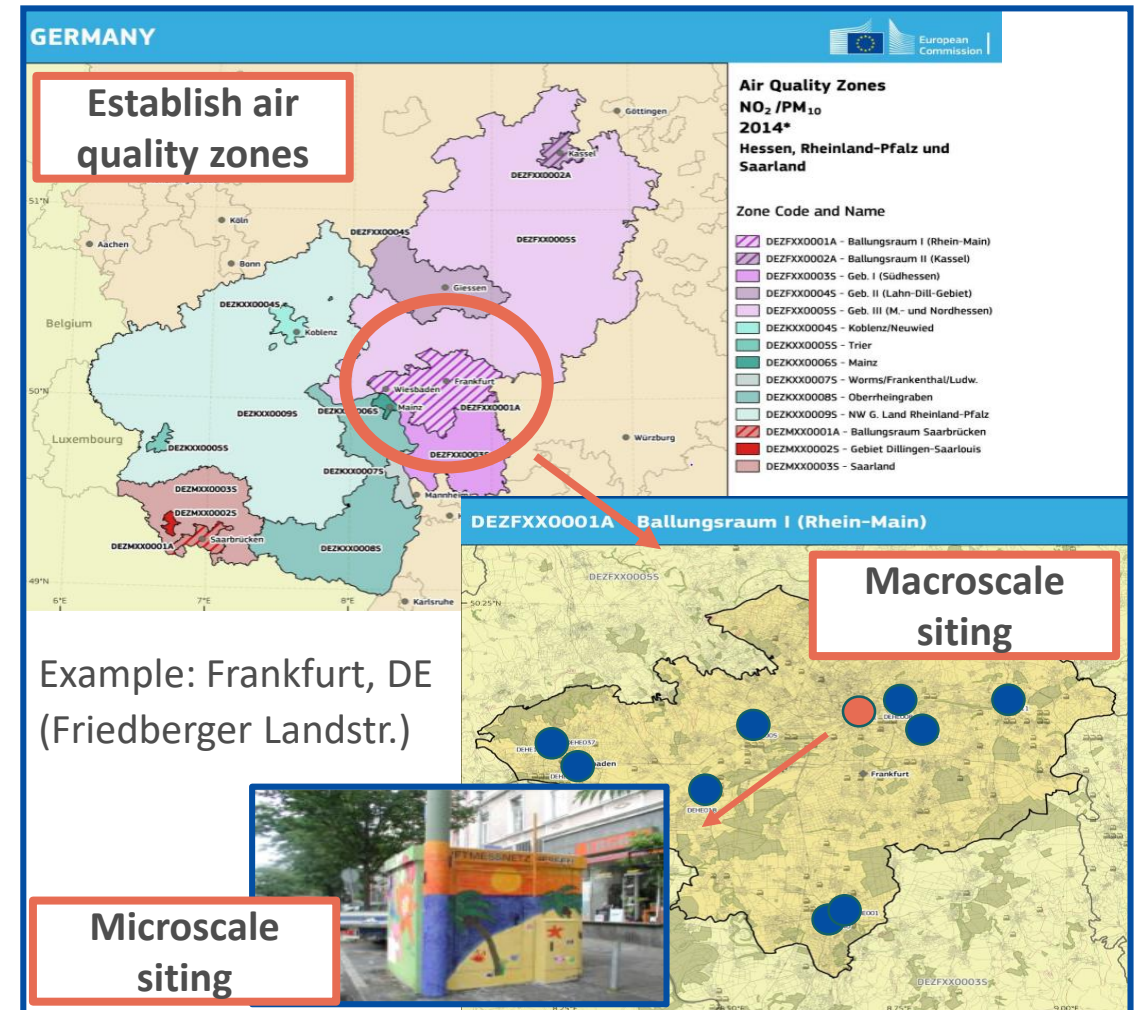
Flexibilities may sometimes impact the comparability of data ...



Monitoring rules offering flexibility are sometimes 'stretched'



Modelling ability has improved, allows for much more detail



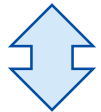


# Air quality information shortcomings

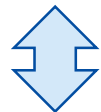
Reliable air quality information is widely available, often even in real-time, but ...

## Information shortcomings

Public feels under-informed about poor air quality and its impacts ...



Concerns about health impacts have increased



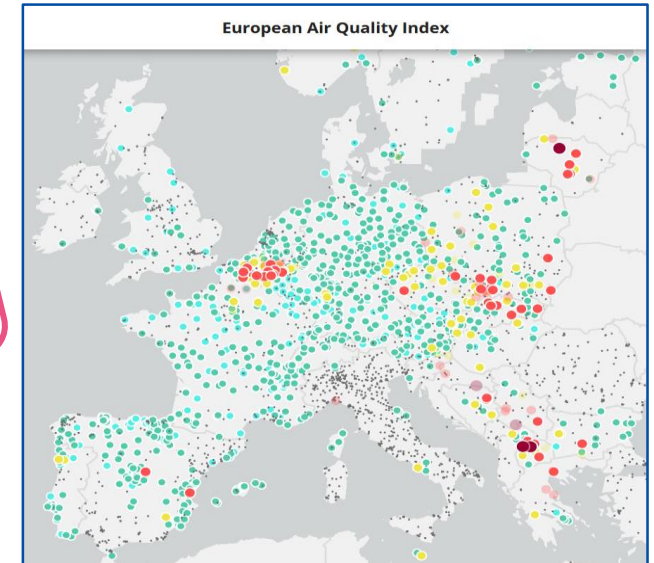
Public information is not always clear, and not harmonised



**54%**

MORE THAN HALF OF EUROPEANS SAY THAT THEY ARE **NOT WELL-INFORMED ABOUT AIR QUALITY PROBLEMS**

Real time data @  
<https://airindex.eea.europa.eu>



# The consequences air policy

## Environment & Health

**Elevated concentration levels of air pollutants**, both general exposure of population and at pollution hotspots

**Health impacts**, more than 400.000 premature deaths each year across the EU, plus morbidity health impacts

**Ecosystem impacts**, eutrophication limits are being exceeded in 62% of ecosystem areas across the EU

**Links with climate change**, as higher temperature are associated with elevated ozone levels

**Synergies with other EU policies**, and in particular with the goals of the (upcoming) EU Zero Pollution Action Plan

**Administrative burden** of air quality management, in particular as relates to air quality assessment regimes

**Cost to society**, EUR 20 bn direct cost to health-care, lost work-days, crop losses, plus EUR 330-940 bn indirect costs

**Measures needed to meet EU air quality standards**, with costs for industry, transport, energy, and agriculture sector

**Impacts on the EU's international competitiveness**, with innovation potential, especially for clean air technologies

**Sensitive population groups** (children, pregnant women, elderly citizens) are more susceptible to air pollution

**Inequalities and social sustainability**, as groups of lower economic status tend to be more negatively affected

Measures to address air pollution may have effects on **employment**

## Economic

## Social

# A quick poll



Which of the consequences of air policy indicated above do the model(s) you work with address to a level that the models can support decision making?

*(multiple choices are possible)*

join at

**[www.slido.com](https://www.slido.com)**

**#FMP21**

# Modelling the consequences of air policy?

Environment & Health

<b>Elevated concentration levels of air pollutants</b> , both general exposure of population and at pollution hotspots	89% ★
<b>Health impacts</b> , more than 400.000 premature deaths each year across the EU, plus morbidity health impacts	56% ★
<b>Ecosystem impacts</b> , eutrophication limits are being exceeded in 62% of ecosystem areas across the EU	42% ★
<b>Links with climate change</b> , as higher temperature are associated with elevated ozone levels	38% ★
<b>Synergies with other EU policies</b> , and in particular with the goals of the (upcoming) EU Zero Pollution Action Plan	15% ★
<b>Administrative burden</b> of air quality management, in particular as relates to air quality assessment regimes	6% ★

<b>Cost to society</b> , EUR 20 bn direct cost to health-care, lost work-days, crop losses, plus EUR 330-940 bn indirect costs	35% ★
<b>Measures needed to meet EU air quality standards</b> , costs for industry, transport, energy, and agriculture sector	44% ★
<b>Impacts on the EU's international competitiveness</b> , with innovation potential, especially for clean air technologies	0% ★
<b>Sensitive population groups</b> (children, pregnant women, elderly citizens) are more susceptible to air pollution	39% ★
<b>Inequalities and social sustainability</b> , as groups of lower economic status tend to be more negatively affected	12% ★
Measures to address air pollution may have effects on <b>employment</b>	3% ★

Economic

Social

→ Size of the ★★☆☆☆ indicates what 'FAIRMODE models' currently focus on (66 replies in the snap poll).

# Air quality monitoring, modelling, plans

**Support contract** with a consortium comprised of Ricardo, VITO, NILU and Trinomics to formulate **technical suggestions** to strengthen air quality monitoring, modelling and plans.

## Phase 1 - scoping, mapping and analysis

- Task 1: Literature review
- Task 2: Expert consultations and questionnaires
- Task 3: Mapping and analysis of established practice

## Phase 2 - assessing the impacts of technical suggestions

- Task 4: Formulation of technical suggestions
- Task 5: Assessment of impacts
- Task 6: Support to guidance and/or recommendation documents

# Air quality monitoring, modelling, plans

**Expert consultation** (via survey, then interviews and focus groups) on 15 focus issues under four headings (and almost 200 questions) – survey concludes 1 March (**today**).

## GENERAL

- (1) Administrative burden
- (6) Enhanced air quality assessment methods
- (12) Public access to air quality data
- (15) Accounting for natural sources of air pollution

## MONITORING

- (2) Air quality zones and assessment regimes
- (3) Micro- and macro-scale siting of sampling points
- (4) Representativeness and continuity of measurements
- (5) Monitoring other air pollutants or parameters

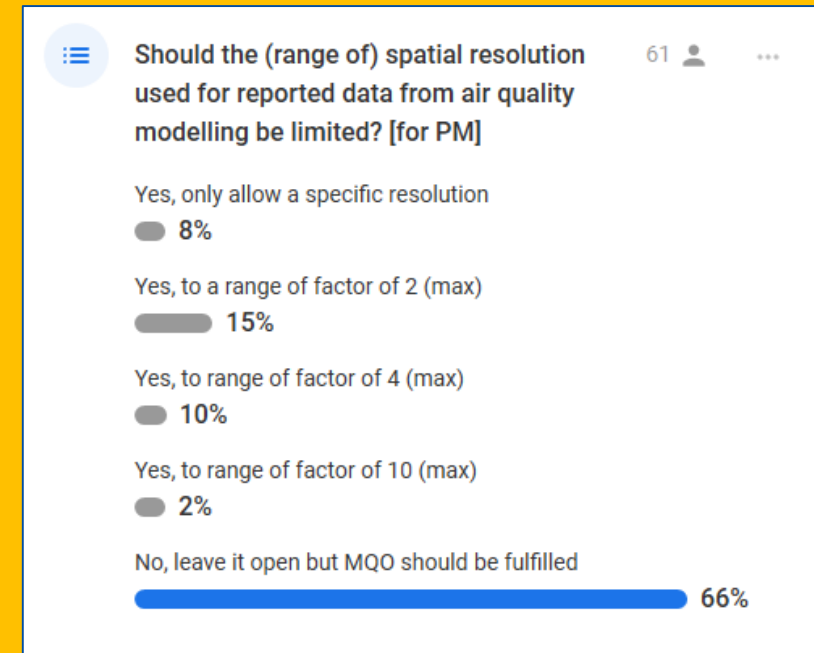
## MODELLING

- (7) **Enhanced role of air quality modelling**
- (8) **Improving quality of air quality modelling**
- (10) **Role of modelling to support air quality plans**

## PLANS

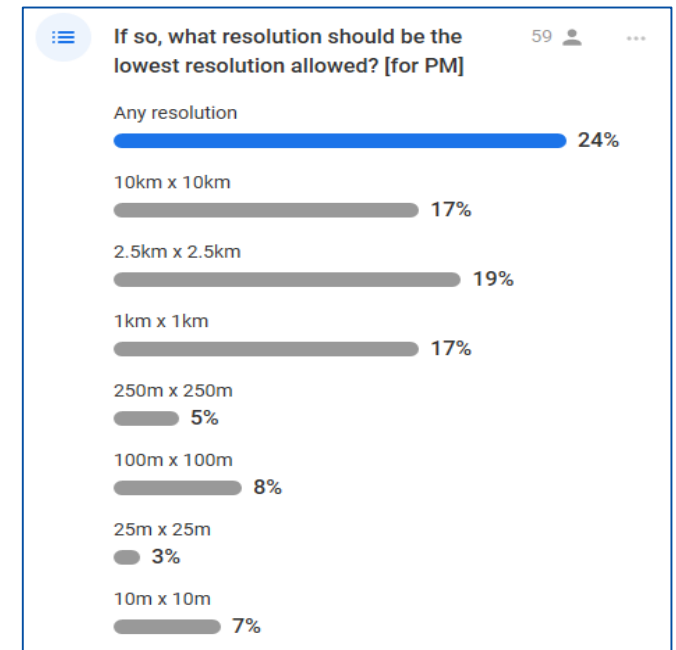
- (9) Improving air quality planning
- (11) Air quality plan development process and engagement
- (13) Ex-ante assessment of impacts, costs and effectiveness of plans
- (14) Ex-post assessment of impacts, costs and effectiveness of plans

# A second poll

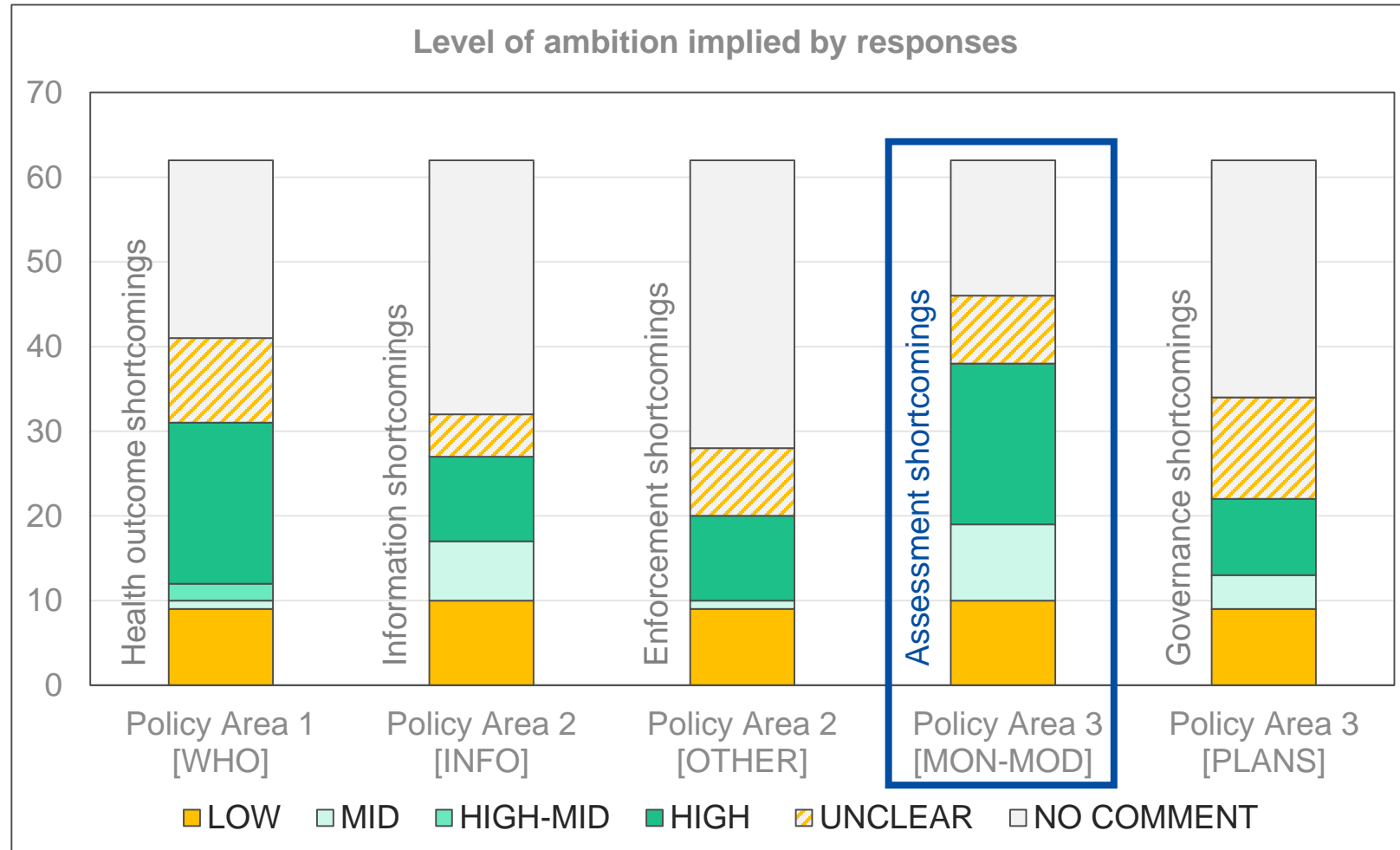


Should the (range of) spatial resolution used for reported data from air quality modelling be limited? (for PM)

*Follow-up:* If so, what resolution should be the lowest resolution allowed?



# What stakeholders think about ambition levels



Based on feedback to inception impact assessment in Jan 2021 (62 unique responses).

A **high level of ambition** for policy area 1 was suggested by:

- 16 NGOs, 2 companies & 2 business assoc.

A **low level of ambition** for policy area 1 was suggested by:

- 1 company & 9 business assoc.

Similar picture for other policy areas, split less pronounced.



# Air quality monitoring, modelling, plans

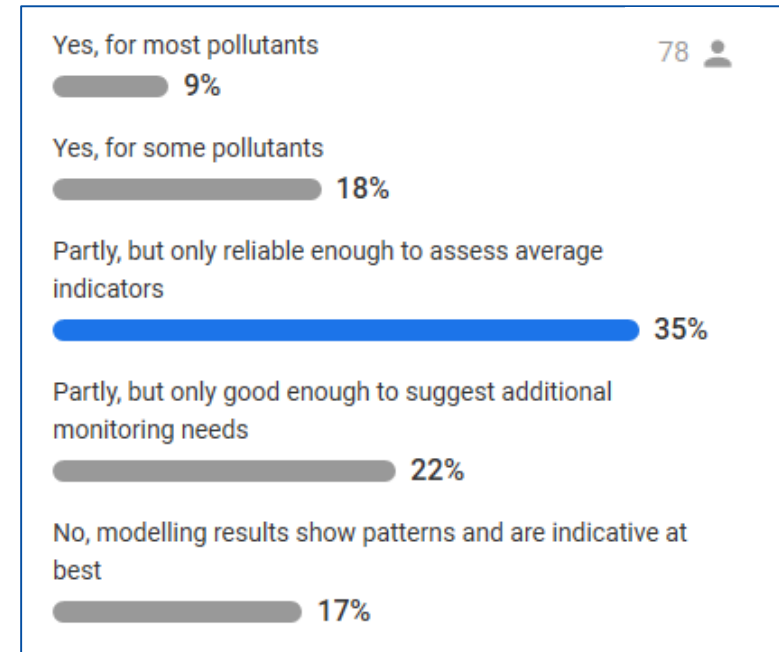
## Next steps

- Not a one-size fits all approach, the before-mentioned issues require different solutions (may include technical solutions, additional guidance and/or legislative changes).
- Support study on (a) scoping, mapping and analysis related to the before-mentioned issues, (b) assessing the technical suggestions to address issues identified – until Jan 2022.
- Stakeholder consultation will include expert consultations, targeted questionnaires, as well as, later a, broader public consultation (the latter likely related to air quality more generally).
- Timeline depends on the type of solutions / changes to be considered (see next slide).

# A final poll



Is air quality modelling 'good enough' to identify exceedance situation without verifying these exceedances via sampling points (monitoring stations)?



# Clean Air Milestones 2020 to 2023 (indicative)



# So, how can FAIRMODE help?



Over the past five years, the use and reporting of **air quality modelling** has increased: from 4 (in 2013) to 10 (in 2017) to 16 (in 2019) Member States ... (only 11 to go) ...

*But: reported air quality modelling data still varies in resolution and quality, not harmonized.*

The ongoing revision of EU Rules will *inter alia* aim to **strengthen the provisions** for air quality modelling ... to make it more robust and more comparable ...

*But: we need to hear from you what exactly needs rules and what needs more guidance.*

Air pollution has **consequences** for air quality, as well as for environment & health, economic and social consequences ...

*And: we need to further develop modelling to address all this (better)! But how?*

Contact us:

env-air@ec.europa.eu

Have your say:

<https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12677-Revision-of-EU-Ambient-Air-Quality-legislation>

# Thank you

