EU Clean Air Policy

François Wakenhut
27 January 2022
EU clean air policy

Ambient Air Quality (AAQ) Directives
- Maximum concentrations of air polluting substances
  \[(\text{PM}_{10}, \text{PM}_{2.5}, \text{SO}_2, \text{NO}_2, \text{O}_3 + 8 \text{ more})\]

Setting Objectives for Good Air Quality

Reducing Emissions of Pollutants

National Emission reduction Commitments Directive
- National emission totals
  \[(\text{SO}_2, \text{NO}_x, \text{NMVOC}, \text{PM}_{2.5}, \text{NH}_3)\]

Source-specific emission standards
- IED Directive
- MCP Directive
- Eco-design Directive
- Energy efficiency
- Euro and fuel standards
EU clean air policy works …


EU urban population exposed to air pollution above EU standards from 2000 to 2018

- O₃
- PM₂.₅
- PM₁₀
- NO₂
EU clean air policy works … but …

EU clean air policy works … but …

EU urban population exposed to air pollution above EU standards from 2000 to 2018

EU urban population exposed to air pollution above WHO (2021) guidelines in 2018 / 2019

- **O₃** 97%
- **PM₁₀** 81%
- **PM₂.₅** 97%
- **NO₂** 94%

Key shortcomings
Air quality 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 and negative health impacts persist**

Lack of flexibility to adapt to evolving science and new recommendations

**Estimate for Hungary:**
10,400 premature deaths due to particulate matter in 2019

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>2005 WHO Guidelines</th>
<th>2021 WHO Guideline</th>
<th>EU Air Standards</th>
<th>EU Exceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{10}$ (year)</td>
<td>20 µg/m$^3$</td>
<td>15 µg/m$^3$</td>
<td>40 µg/m$^3$</td>
<td>-</td>
</tr>
<tr>
<td>PM$_{10}$ (day)</td>
<td>50 µg/m$^3$</td>
<td>45 µg/m$^3$</td>
<td>50 µg/m$^3$</td>
<td>35 days per year</td>
</tr>
<tr>
<td>PM$_{2.5}$ (year)</td>
<td>10 µg/m$^3$</td>
<td>5 µg/m$^3$</td>
<td>25 µg/m$^3$</td>
<td>-</td>
</tr>
<tr>
<td>PM$_{2.5}$ (day)</td>
<td>25 µg/m$^3$</td>
<td>15 µg/m$^3$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NO$_x$ (year)</td>
<td>40 µg/m$^3$</td>
<td>10 µg/m$^3$</td>
<td>40 µg/m$^3$</td>
<td>-</td>
</tr>
<tr>
<td>NO$_x$ (day)</td>
<td>-</td>
<td>25 µg/m$^3$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NO$_x$ (hour)</td>
<td>200 µg/m$^3$</td>
<td>200 µg/m$^3$</td>
<td>200 µg/m$^3$</td>
<td>18 hours per year</td>
</tr>
<tr>
<td>SO$_2$ (day)</td>
<td>20 µg/m$^3$</td>
<td>40 µg/m$^3$</td>
<td>125 µg/m$^3$</td>
<td>3 days per year</td>
</tr>
<tr>
<td>O$_3$ (season)</td>
<td>-</td>
<td>60 µg/m$^3$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>O$_3$ (8-hr)</td>
<td>100 µg/m$^3$</td>
<td>100 µg/m$^3$</td>
<td>120 µg/m$^3$</td>
<td>75 days in 3 years</td>
</tr>
<tr>
<td>CO (8-hr)</td>
<td>-</td>
<td>10 mg/m$^3$</td>
<td>10 mg/m$^3$</td>
<td>-</td>
</tr>
</tbody>
</table>

+ Benzene, Lead, Arsenic, Cadmium, Nickel, Benzo(a)Pyrene
Air quality implementation shortcomings

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

Implementation shortcomings
Exceedances are not always addressed sufficiently and/or on time …

Air quality plans and measures have often proven ineffective
Insufficient penalties and compensation linked to exceedances

As of January 2022, still **31 cases** addressing 18 Member States (+ 1 vs UK) related to bad application:

- 15 particulate matter (PM$_{10}$ and/or PM$_{2.5}$)
- 13 nitrogen dioxide (NO$_2$)
- 1 sulphur dioxide (SO$_2$)
- 2 monitoring problems

Of these, 16 cases (i.e. 9 Member States + 1 vs UK) have been referred to the Court of Justice of the EU.

With 8 rulings so far: BG, PL, RO, IT, HU (for PM$_{10}$) and UK, DE, FR (for NO$_2$).

These cases address both exceedances of air quality standards and not keeping these as short as possible.
Local air quality is impacted by emissions outside local control

Some measures may be ineffective, or seem disproportionate

Governance shortcomings
Air quality plans do not always address all sources effectively …

Example: Air pollution (here: 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 (!)

Source(s): Urban PM2.5 Atlas: Air Quality in European Cities (JRC, 2017)
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

Example: Frankfurt, DE (Friedberger Landstr.)

Source(s): https://ec.europa.eu/environment/air/quality/zones.htm
Air quality information shortcomings

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

- Concerns about health impacts have increased
- Public information is not always clear, and not harmonised

Information shortcomings

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

Source(s): Special Eurobarometer 497 (September 2019) & Air Quality Index

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
Air Quality: Revision of EU Rules
“The Commission will draw on the lessons learnt from the evaluation of the current air quality legislation.

It 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.”
Different levels of ambition (example: for PM$_{2.5}$)

<table>
<thead>
<tr>
<th>AMBITION LEVEL</th>
<th>EU standards today / baseline</th>
<th>Low ambition</th>
<th>Mid ambition</th>
<th>High ambition</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO – Air Quality guidelines and interim targets for PM (annual mean)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual mean level</strong></td>
<td><strong>PM$_{2.5}$ (µg/m$^3$)</strong></td>
<td><strong>Mortality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interim target 1</td>
<td>35</td>
<td>+ 24 % above guideline level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interim target 2</td>
<td>25</td>
<td>+ 16 % above guideline level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interim target 3</td>
<td>15</td>
<td>+ 8 % above guideline level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interim target 4</td>
<td>10</td>
<td>+ 4 % above guideline level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AQ guideline level</td>
<td>5</td>
<td>mortality at guideline level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ambition level versus air quality today

PM$_{2.5}$ concentrations in 2019 by country

Source(s): EEA Europe’s air quality status 2021
Timeline & next steps
What needs to be improved today?

**Implementation:** Need continued push towards full implementation of existing clean air legislation.

See also COM (2018) 330 'Clean Air for All' for an overview.

**(Use) Funding:** Specific allocations for air quality of some EUR 2 billion (2014-2020), plus substantial indirect contributions (> 28 bn).


**Enforcement:** As of January 2022, still 31 infringement cases addressing 18 Member States (+ 1 vs UK) related to bad application.

**Information:** Eurobarometer polls (No 497, 2019) indicate a majority (54%) do not feel well informed about air quality problems.

See: [https://airindex.eea.europa.eu/Map/AQI/Viewer/](https://airindex.eea.europa.eu/Map/AQI/Viewer/) - this shows up-to-date, near real time air quality data, also for Bulgaria
Clean Air Milestones 2020 to 2023 (indicative)

- Fitness Check (published in Nov 2019)
- Council Conclusions
- NEC Implementation Report (Commission Communication)
- Expert consultation (on monitoring, modelling, plans)
- WHO Guidelines publication (postponed to II/2021)
- Zero Pollution Action Plan

**Finalisation of Impact Assessment (air quality)**

- EEA Air Quality Report 2020
- EEA Air Quality Briefings 2021
- Inception Impact Assessment (revising the Air Quality Directive)
- Second Clean Air Outlook (Commission Report)
- EEA Air Quality Briefings 2022
- WHO Guidelines publication (22 September 2021)
- Public consultation: air quality (air quality - revision of EU rules)
- Adoption: legislative proposal (air quality - revision of EU rules)
- Review Gothenburg Protocol (Air Convention)
- Third Clean Air Outlook (Commission Report)
- EEA Air Quality Briefings 2023
- Submission of Second National Air Pollution Control Programmes begins
- Council discussions of legislative proposal (air quality - revision of EU rules)
- EEA Air Quality Briefings 2023
- 4th EU Clean Air Forum (location to be determined)
- 3rd EU Clean Air Forum (18 & 19 November in Madrid)
- 4th EU Clean Air Forum (location to be determined)
Thank you

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