Air Implementation Pilot
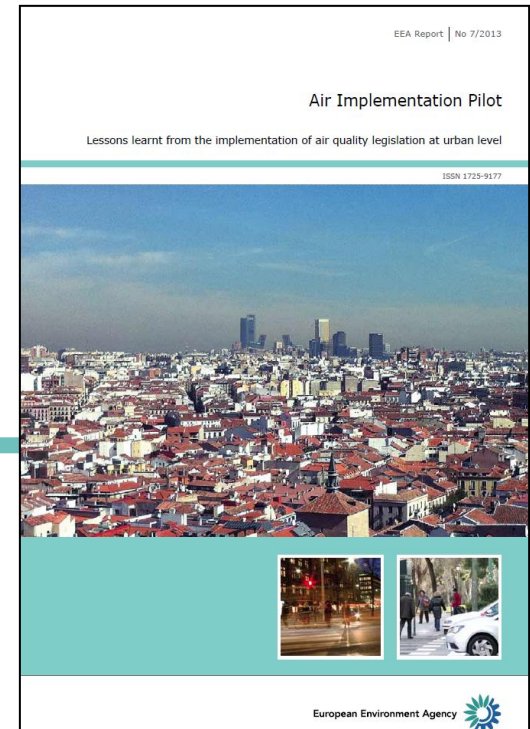
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European Environment Agency (EEA)

EEA Report | No 7/2013

Air Implementation Pilot

Lessons learnt from the implementation of air quality legislation at urban level

ISSN 1725-9177

European Environment Agency

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1. Content

1. Context of the Air Implementation Pilot (AIP)

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3. AIP workstreams:
   a) Emission inventories
   b) Modelling activities
   c) *Monitoring networks*
   d) *Management practices*
   e) *Information to the public*

4. Further steps

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1. Context : Air

**Air Quality** Directives: 1996, 2008: limit & target values, AQ plans etc.

Emissions regulations: National Emission Ceilings, sectoral measures
(industry, road transport, NRMM etc), fuel quality standards,
product performance standards, etc

$PM_{2.5}$	31%
PM_{10}	33%
O_3	14%
NO_2	5%
BaP	31%
SO_2	<1%
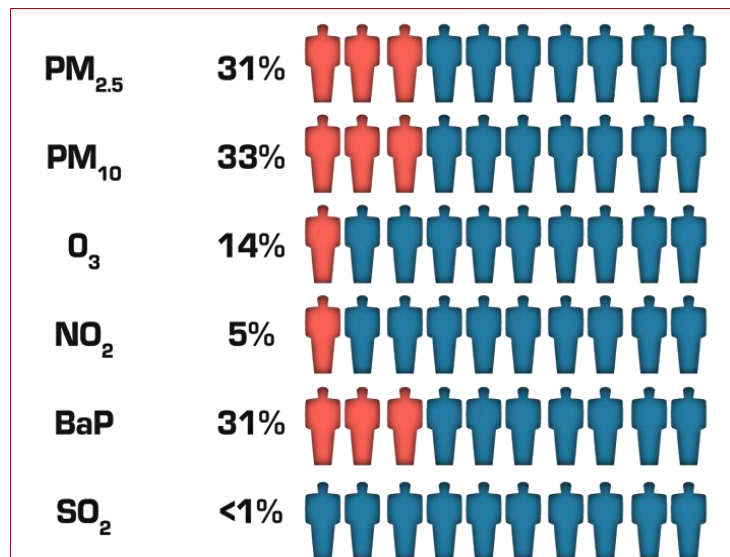
In 2011, 23 Member States recorded exceedances of the EU daily limit value for PM_{10}

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1. Context: Implementation
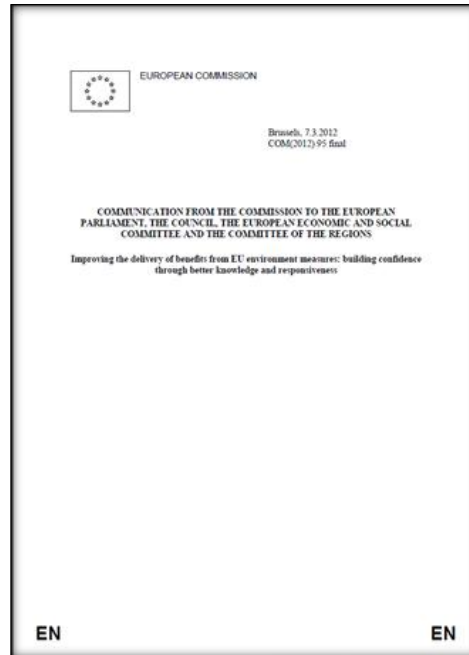
- Commission Communication on Improving the delivery of benefits from EU environment measures (2012)
- Air Policy Review (2012-13)
- 7th Environmental Action Plan (2014)

Focus on Implementation

Implementation: Not only compliance focus, but cooperative actions to build capacity and knowledge to deliver more effective policy

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1. Context: Implementation

Commissioner Potočnik June 2012:

Invited the European Commission's Directorate General for Environment (DG ENV) and the EEA to explore an enhanced EEA role in support of EU environment policy implementation, by way of pilots on air and waste.

→ Joint EEA – DG ENV project
→ Focused on selected cities in the EU

EEA supported the activity through the ETC/ACM's work plans of 2012 and 2013

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2. Objectives

A joint project: 12 cities +DG ENV + EEA

Objectives:

- Better understand challenges faced when implementing AQ legislation
- Exchange of experiences (good practices) also with other cities
- Develop general proposal to improve implementation
- Not intended to solve AQ problems, but improve information base for future action

Working process:

- Selection of cities
- Contact
- Meetings
- Questionnaires
- ETC/ACM reports
- EEA report & brochure

Workstreams:

- **Emission inventories**
- **Modelling**
- Monitoring networks
- Management
- Information to the public

FAIRMODE
Plenary, Baveno, Italy

European Environment Agency

3a. Workstreams: Emission inventories

Objectives

- Describe the quality and level of detail of city emission inventories
- Assess inventory comparability across the selected cities of the pilot.
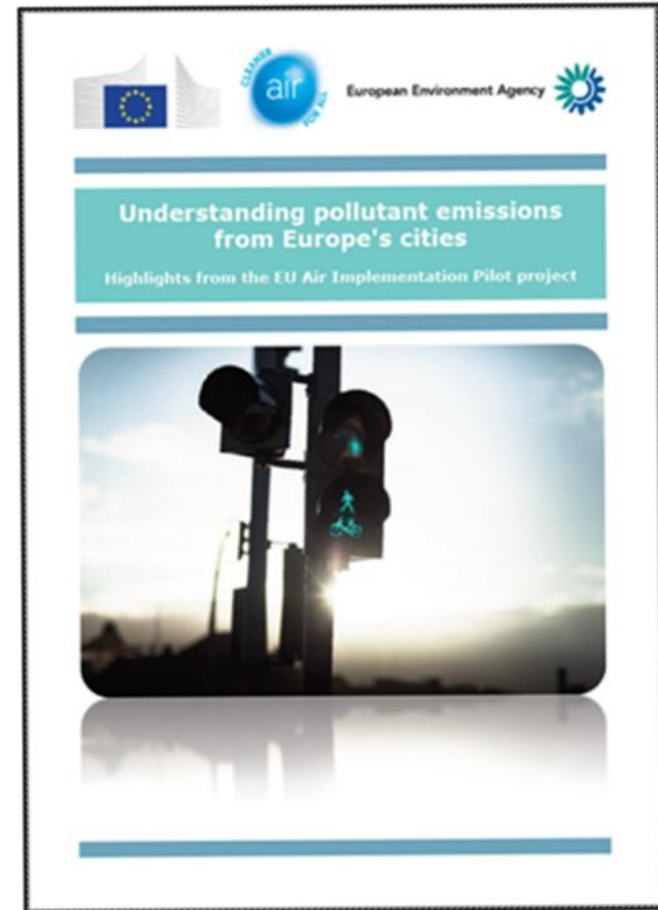
Main conclusions:

- Inventories in 11 out of 12 cities
- All of them considered NOx, SO_2 and PM_{10}. Only 7 cities considered GHGs.
- All covered at least city area; bottom-up; annual data
- Main pollutant sources, depending on importance and availability
- Updated every year; recalculations less frequent. In general, publicly available
- Not directly comparable (different classifications, pollutants, resolution, QA/QC) *Do they need to be? (fitness for purpose…)*
- Used for modelling, identifying and quantifying sources, informing time extension notifications (TEN)

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Challenges ↔ improvements:

- EI methodologies: training and guidance, also on QA/QC → cities networks, FAIRMODE(?)

- Emission factors: Availability (fugitive sources, wood-burning, construction, real driving conditions) and uncertainties.

  Better knowledge of information sources, simpler, improved EF → EMEP/EEA Guidebook etc

- Quality and availability of input data (e.g. traffic data)

Understanding pollutant emissions from Europe's cities

Highlights from the EU Air Implementation Pilot project

3b. AIP workstreams: Modelling activities

Objectives

- Examine how different air pollutant sources are taken into account.
- Assess strengths and weaknesses of model applications
- Identify lessons learned and needs for further guidance.

Main conclusions

- Models used in 11 out of 12 cities
- Different models, mainly dispersion (emission inventories + meteorology as input)
- Different purposes (AQ assessment, reporting, planning, source contributions and exposure); helpful for management
- Run by other institutions than city authorities for most cities

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3b. AIP workstreams: Modelling activities

Figure 2.1 Number of cities, out of the 10 that submitted the questionnaire, that have used models for each particular air quality purpose
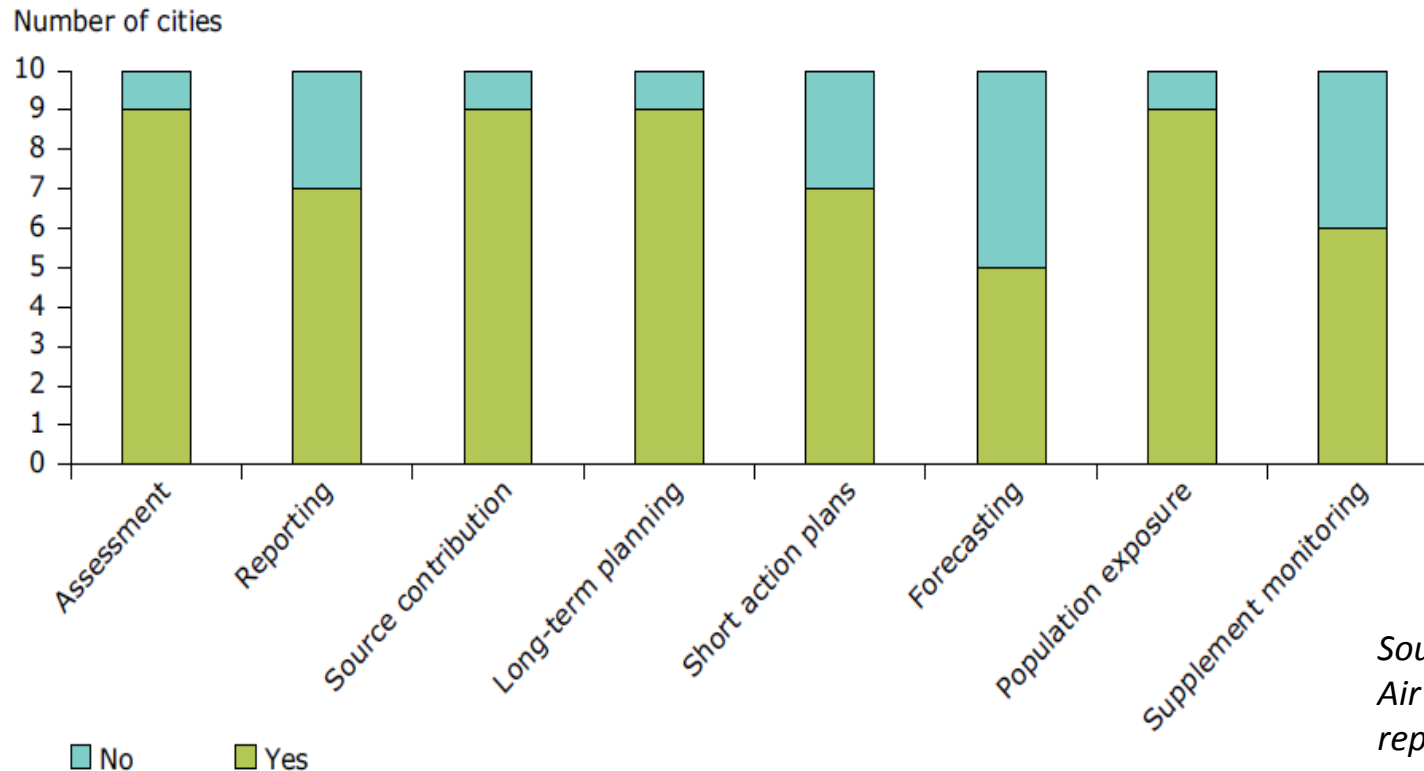
Source:
Air Implementation Pilot report, EEA 2013

Note: Note that while Ploiesti does use AQ models, it only uses them for general assessment of air quality and this use has not been taken into account in the 'Assessment' bar on the far left of this figure.

Challenges ↔ improvements

Input data:

- Emission sources (fugitive, background, quality)
- Meteorology

- **Emission inventories**
- **Background concentrations**

Processes:

- Urban topography
- Computational time

- **Training**
- **Guidance**
- **General framework (FAIRMODE)**

Results:

- Complexity
- Over/under estimation

4. Further steps

- **EEA further support on implementation**
  - Renewed focus on quality of data collected and reported
  - Information systems (access, understanding: indicators)
  - Integrated assessments of air pollution, impacts & policy effectiveness
  - Capacity building with expert communities and Eionet.

- **Clean Air Policy package proposal**
  - Potential support of LIFE+, to finance management and capacity building
  - Other funding opportunities (structural funds)
  - Programme on urban measures

- **Feedback from cities**
  - Potential to strengthen local assessment and management capacities
  - Follow up communication momentum → use existing networks

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How to start with PM modelling for air quality
assessment and planning
relevant to the Air Quality Directive
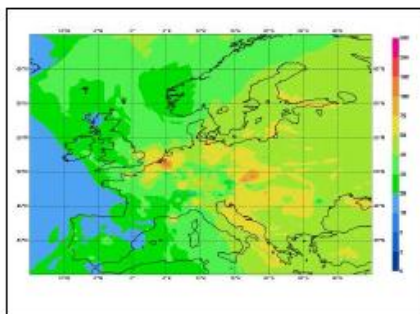
ETC/ACM Technical Paper 2013/11
November 2013

Laurence Rouil, Bertrand Bessagnet (Eds.)

FAIRMODE
Forum for air quality modelling in Europe

European Topic Centre
on Air Pollution and
Climate Change Mitigation

The European Topic Centre on Air Pollution and Climate Change Mitigation (ETC/ACM)
is a consortium of European institutes under contract of the European Environment Agency
RIVM UBA-V ÖKO AEAT EMISIA CHMI NILU VITO INERIS 4Sfera PBL CSIC

- Provides an overview of questions and recommendations for the modelling of ambient particulate matter (PM10 and PM2.5) concentrations in Europe.

- ETC/ACM technical paper 2013/11 available on the ETC website:

  http://acm.eionet.europa.eu/reports

Thank you

http://eea.europa.eu/air

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