

AQ management in the EU

Activity 2.5

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- Examples of measures
- Synergies and antagonisms
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Legal requirements

- Art. 23 AQD: Air quality plans
 - AQ plan has to be prepared in case of exceedance of limit or target value (+MoT) of Annexes XI and XIV
 - Exceedance period as short as possible
 - Integrated programmes in case of exceedance of several pollutant thresholds
 - Consistency with IED, NEC, noise programmes
 - Information listed in Annex XV A
 - Two years after exceedance year
 - Art. 25: cooperation in case of significant transboundary contribution
 - Art. 26: public and organisations have to be informed

Legal requirements – Annex XV A

1. Localisation of excess pollution
2. General information
3. Responsible authorities
4. Nature and assessment of pollution
5. Origin of pollution
6. Analysis of the situation
7. Details of measures or projects implemented before 2008
8. Details of adopted measures after 2008
9. Details of planned measures
10. List of publications, documents, etc.

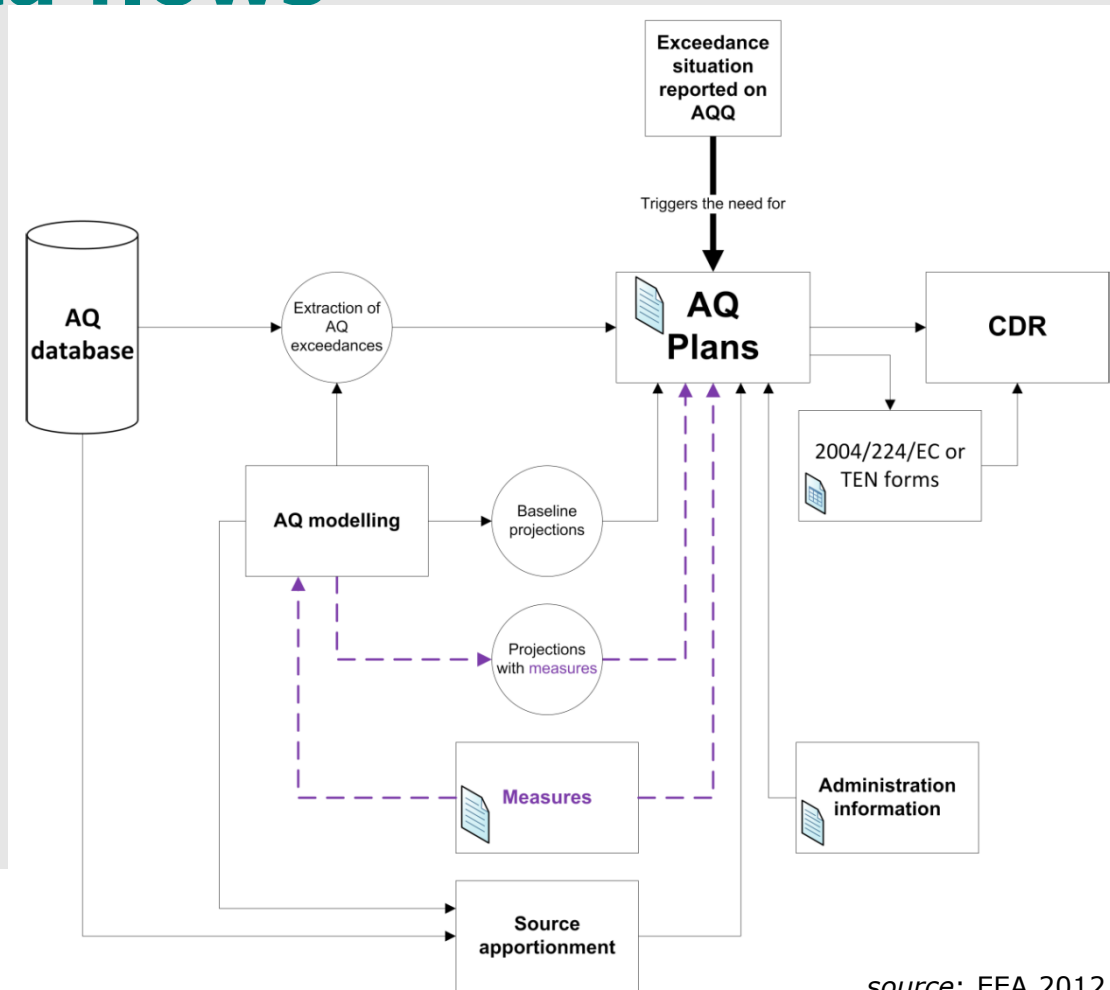
Legal requirements – 4DD Art. 7 (2)

- Information to the public on any annual exceedance of the target values for As, Cd, Ni and BaP
- Reasons for the exceedance,
- Area
- Assessment of levels, effects on health environment.
- Measures taken

Reporting

- Commission Decision for the submission of information on plans or programmes (2004/224/EC)
- [Recommendations on reporting by working group](#)
- [Excel forms](#) (either according to 2004/224/EC or time extension notifications)
- In future: e-reporting (dataset H-K)

Logic of pre-existing Air Quality Plans data flows



Types of measures

- to reduce (traffic) volume (activity)
- to change type of vehicles, installations (emission factors)
- to change emission factors of vehicles, installations
- to re-allocate emissions either spatially or temporally
- to confine emissions

Reduction of activity – traffic volume

- Congestion charge
- Parking schemes
- Increase of taxes and charges, road pricing
- Sectoral ban (Inntal motorway)
- Encouragement of public transport, bicycles, walking, ...
- ...



Type of vehicles, machinery

- Stimulating change of vehicle fleet by:
 - incentives to foster uptake of new EURO standards, EEVs (e.g. by differentiating taxes/charges)
 - incentives for gas, electric, ... vehicles
 - increase of tax on diesel
 - Scrappage schemes
- Environmental zones, ban of certain vehicles, machinery
- Encourage/require use of electric machinery instead of gasoline driven



Reduction of emissions at source



■ Traffic

- Speed limit for passenger cars
- Enforced inspections to detect high emitting vehicles
- Reduction of idling of cars and trucks



■ Traffic, off-road, stationary

- Filters, SCR (retrofitting, e.g. for ships, locomotives, stationary sources)
- Change of fuel (solid → gas, electricity)
- Shore-side electricity for ships
- Auxiliary Power Unit (APU) limitations, use of Ground Power Unit

■ Residential heating

- district heating, new installations, CHP, thermal insulation, ...

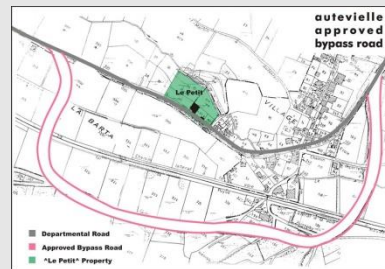
Reduction of emissions at source – residential heating, agriculture

- District heating
- Thermal insulation
- New installation
- CHP
- Inspection (installation, product standards, fuels)
- Ban of agricultural waste burning



Re-allocation, confinement of emissions – traffic

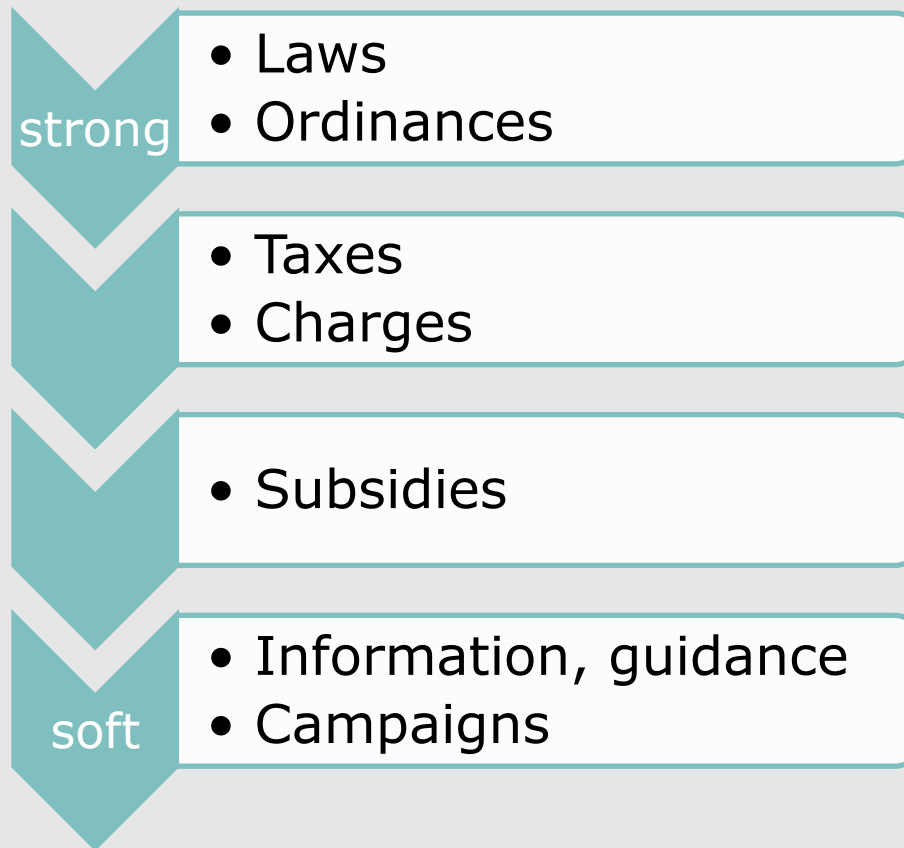
- Bypass roads, tunnels
- Night-time ban of HDV (Inntal motorway)
- Ban of through-traffic
- (Higher stacks)
- Noise barriers



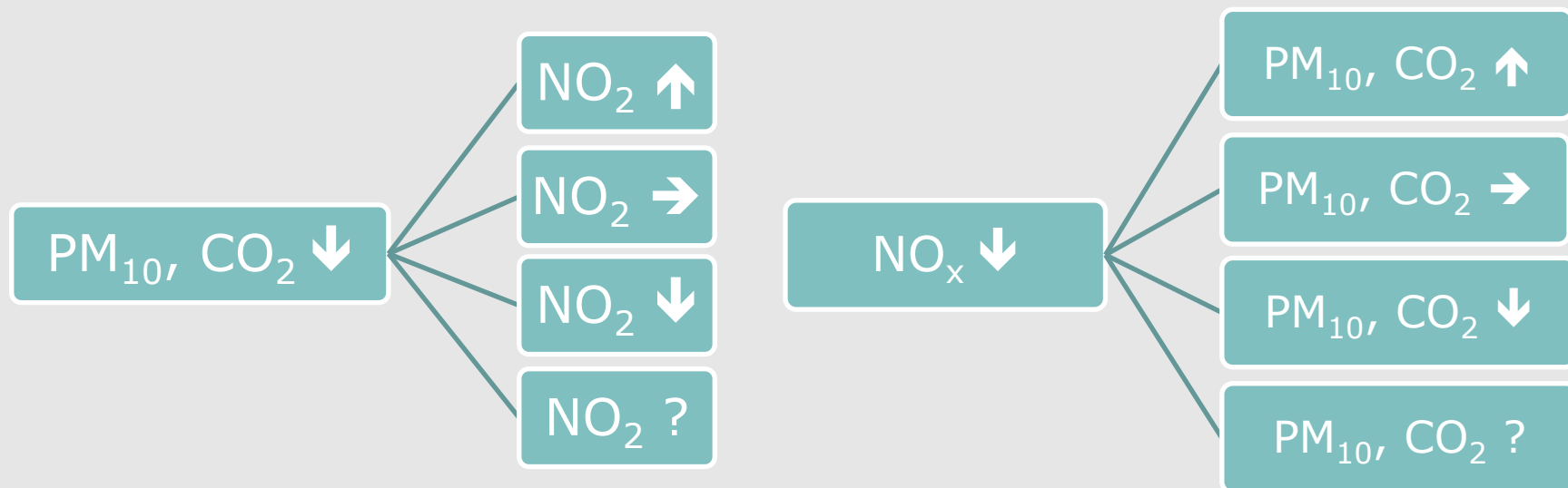
Re-allocation, confinement of emissions – commercial, industrial

- Demolition: Sheet and screen buildings
 - Covered storage of dusty materials
 - Waste recycling at site
 - Spatial planning
-
- District heating (BAT, industrial waste-heat, CHP)

Implementation of measures by ...

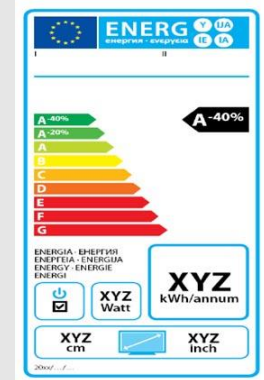


Synergies and antagonisms



no-regret measures (in most cases)

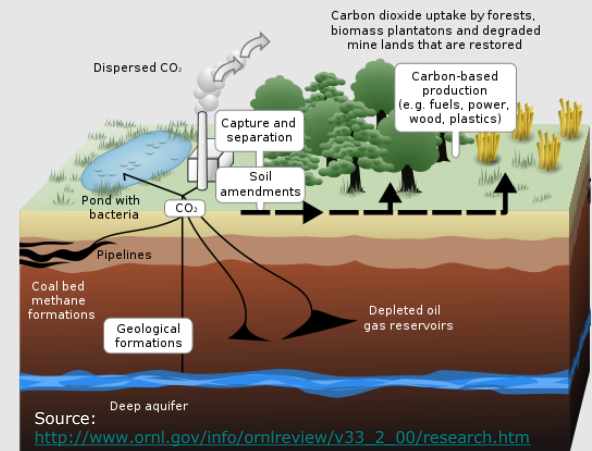
- Energy savings
- Efficiency improvements
- Combined heat and power generation
- Advanced residential combustion
- Reduction in traffic volume
- Speed limits for passenger cars
- Bans (environmental zones)
- Shore-side electricity for ships
- ...
- **BUT:** impact assessment might be needed (local hot spots)



Antagonistic measures

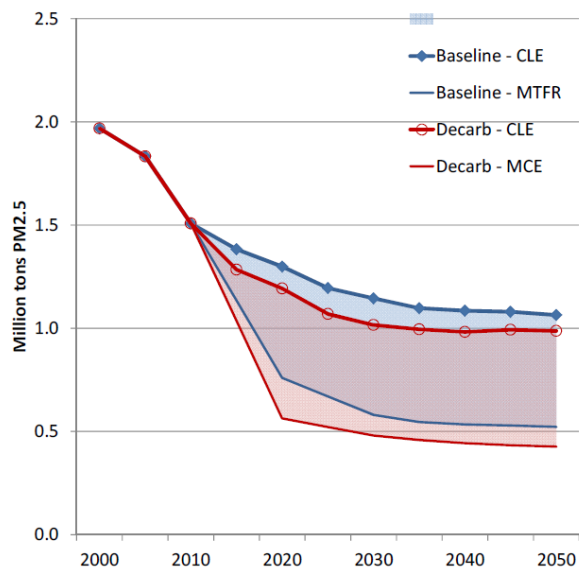
- GHG reduction, increase of PM, NO_x
 - Increased use of biomass, some biofuels (when w/o changeover)
 - (Increased share of Diesel)*
 - Carbon capture and storage
- PM reduction, increase of NO_x
 - Diesel particle filter (in some cases; esp. increase of primary NO₂)
- NO reduction, increase of GHG
 - SCR, SNCR might lead to small decrease of efficiency (not for traffic!)
 - increased use of natural gas (CH₄ ↑)

* thwarted by increased weight, power of diesel vehicles

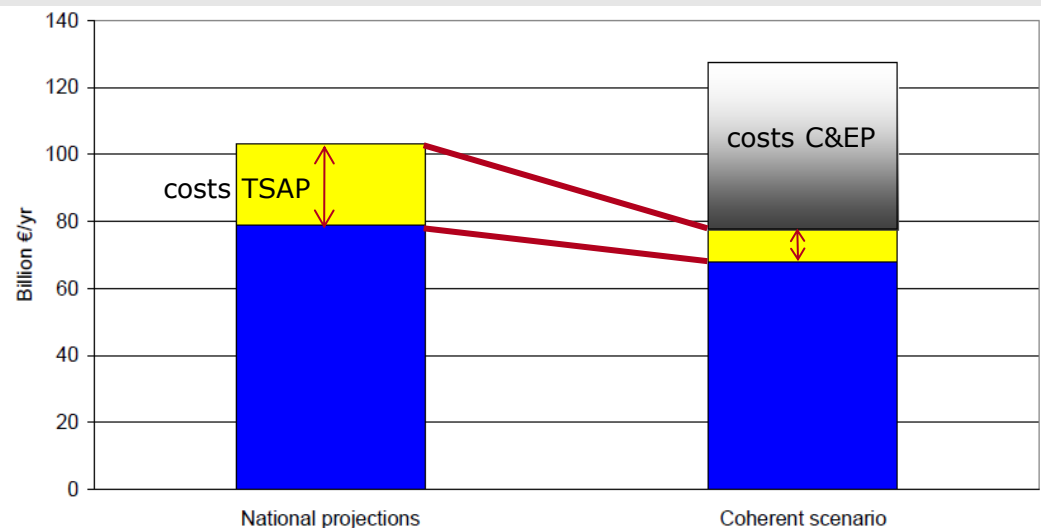


Synergies

- In general, synergies with GHG, PM reduction can be expected
- Reduction of costs to achieve environmental targets due to climate & energy package



Source: IIASA 2012



Source: IIASA 2007, NEC report #5

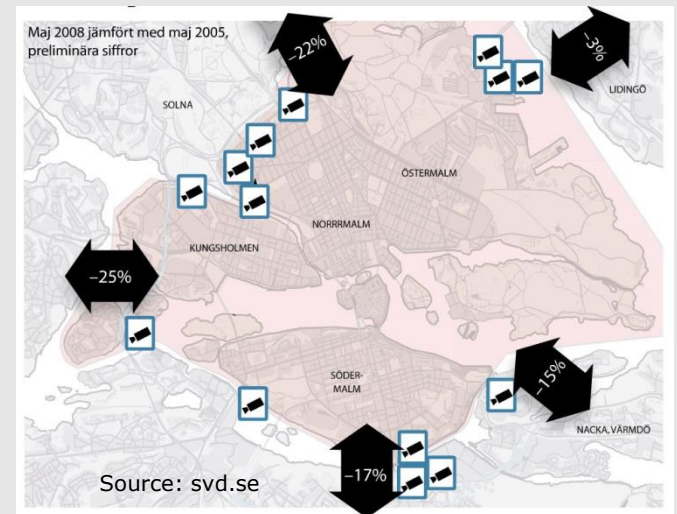
Examples of implemented measures – low emission zones

- 2008/50/EG Annex XV B asks for information
- Implemented in:
 - London
 - Lund, Göteborg, Malmö, Stockholm
 - 50 cities and regions in Germany
 - several Italian cities
 - NL, DK
 - ...



Examples of implemented measures

- Taxes, charges
 - Congestion charge in Stockholm, London
 - NO_x charge for installations in SE, NO
- NO_x bubble for airports (CH)
- Pollutant bubble for commercial area



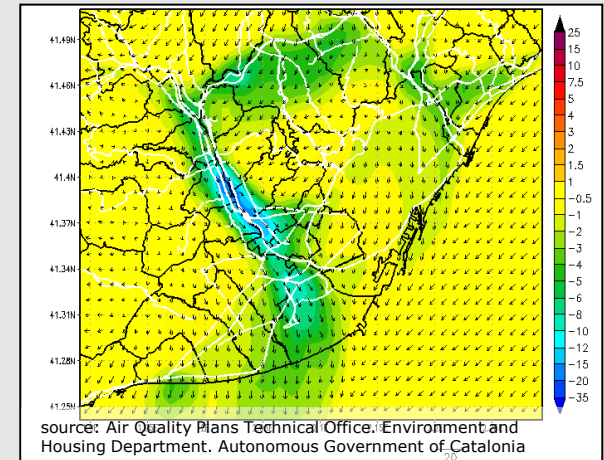
Examples of implemented measures

- Reduction of construction site (Vienna, CH, London, Berlin)
 - Constriction site logistics
 - Charges dependent on EURO standard, distance
 - Transport via rail, ship
 - Sorting and reuse of waste at site
 - Obligatory particle filters for machinery
 - Covered storage



Examples of implemented measures

- Speed limits for passenger cars
 - motorways in AT, ES, NL, ...
 - Reduction e.g. from 130/120 to 100 or 80km/h
 - Barcelona: NO₂ reduction of 4.3-7.5%
 - side effects: less noise, GHG, accidents, injuries
 - Rotterdam: -3 to -5 µg/m³ NO₂
 - Enforcement decisive
 - Inner-city effect (30km/h) small



Example: support for local administration

- Local Air Quality Management (LAQM) in the UK
 - [Dedicated website](#)
 - Helpdesk
 - Supporting documents
 - Tools
 - [Background concentration maps](#)
 - Checklist
 - Measures, good practice examples, case studies

defra The Scottish Government Environment Scotland DOE

Local Authority: Ref:

Updating and Screening Assessment Appraisal Summary

Date of receipt from Defra/DA:

Day	Month	Year

Date consultation closes:

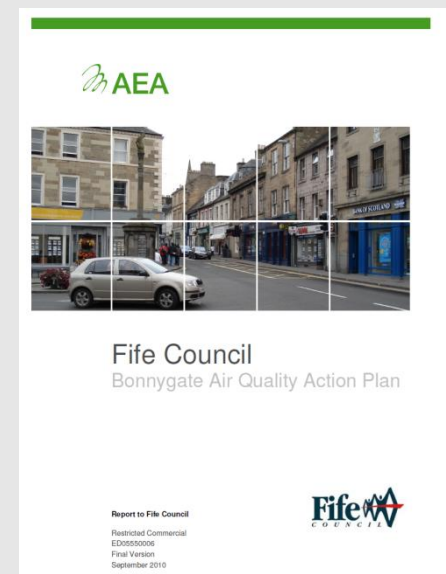
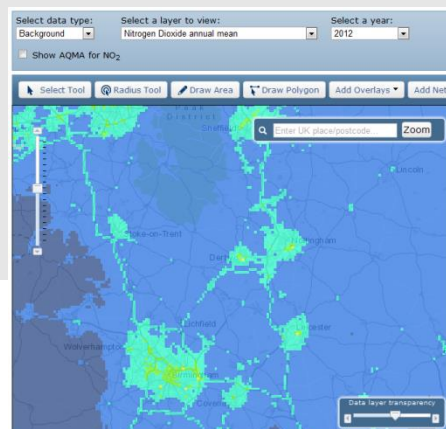
Draft	Final

Date appraisal sent to Defra/DA:

	Appraised by

Link to RSW: (Log-in to the RSW first before clicking link) HYPERLINK TO DOCUMENT

Brief Outcomes of Previous Round



Examples of quantified measures

- LEZ
- Early introduction of EURO 5, 6 (DE, DK, NL, UK, ...)
- Speed limits (AT, ES, NL, ...)
- Bypass roads
- Noise barriers
- Replacement of buses
- Ban of through-traffic (DE, ...)
- Reduction at point sources, agricultural sources
- NO_x tax (SE, NL)
- ...

Measures difficult to quantify

- “Soft” measures
 - Improvements public transport, bicycle, ...
 - Information campaigns, guidance, ...
 - Greening of city
 - Spatial development
 - Parking schemes
 - ...
- Possibly quantification/evaluation by modal shift changes

Supporting factors in the planning process

- Communication and participation of stakeholders (authorities, trade organisations, NGOs, public) during planning and implementation
- Strong political commitment
- Awareness raising and information of the public about air quality issues

Further information

- [European Commission on AQ management](#)
- [European Commission on AQ reporting](#)
- [EEA reporting obligation database](#)
- [Catalogue of measures](#)
- [PM workshop](#)
- [Time extension notifications](#)
- [Air Implementation Pilot](#)
- [Urban emission inventories](#)
- [Low emission zones in Europe](#)
- [Local air quality management UK](#)
- Best practice construction: [Berlin](#), [Munich](#), [CH](#), [London](#), [Styria](#)

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