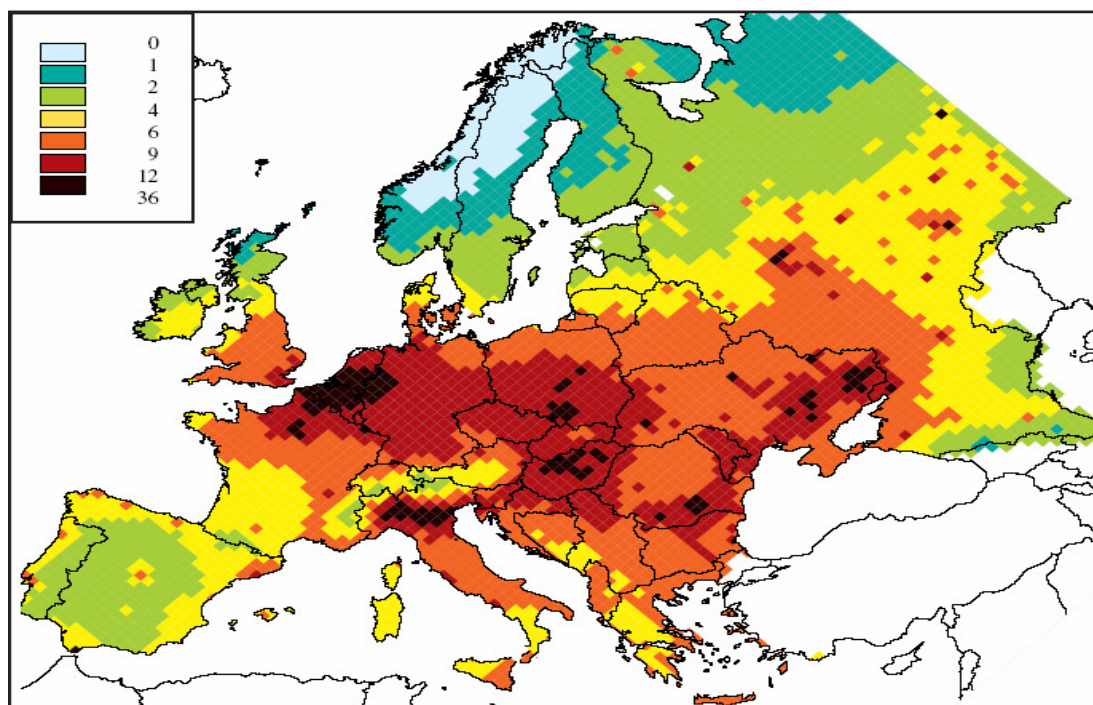


The new AQ Directive 2008/50/EC

PM2.5 requirements



*Andrej Kobe, Alessandro Bertello
ENV C3, DG Environment*

2002: 6th Environmental Action Programme

‘achieving levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment’;
(Art 7.1. of 6th EAP)

Outline

■ Path towards the first EU PM2.5 regulation

■ Directive 2008/50/EC

→ Objectives, expectations

→ Legal provisions

■ Implementation challenges

→ Monitoring, exposure, management

■ Supporting activities

■ Revision in 2013

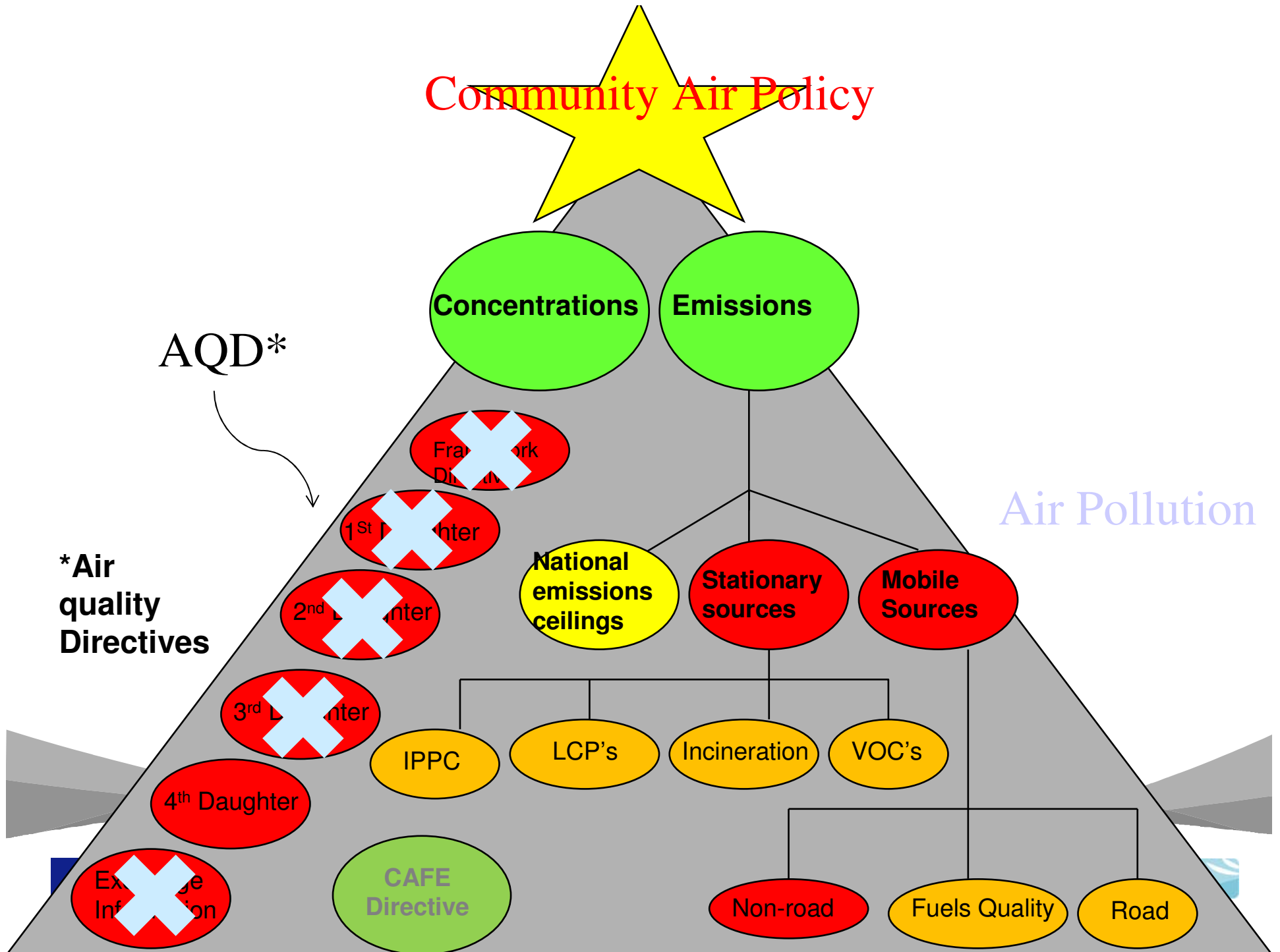
■ Final messages

→ EU provisions blunt; smart implementation required

Historical Perspective

- **Serious impacts of air pollution first recognised in EC environment programmes of the 1970s and 1980s**
- **Patchwork of measures**
 - Car emission controls in 1970s
 - Automotive fuel quality (1980s)
 - Air Quality standards for SO₂, NO₂ and suspended particles (1980s)
 - First legislation on permitting industrial installations (1980s)
 - EC became party to the UN ECE Convention on Long Range Transboundary Air Pollution in 1981

Community Air Policy



Particles in EU regulation in past and present

- **Early recognition, but important knowledge gaps**
 - Unfortunate policy choices (ex. diesel, EURO4 PM ambition)
- **Emission regulation**
 - sectoral (no national ceiling), Some unregulated (shipping)
 - addresses TSP (also in BREF*s)
- **Secondary PM**
 - not explicitly regulated or used in setting objectives
- **Standards based on WHO guidelines**
 - Limit values, only PM10, total mass in 1999
- **Wide divergence in AQD implementation (strong subsidiarity)**
 - PM2.5 / monitoring requirement not implemented well
 - Local vs. regional/national, how to address secondary...
 - Coherence of policies, transitional arrangements
- **Abatement action & Enforcement**
 - Late

6EAP

Better regulation

CAFE

Science & peer review
Implementation experience
IAM + CBA*
Stakeholder involvement

Commission + internal debate

2005

Thematic Strategy on Air Pollution
Proposal AQ Directive

Co-decision : Council & European Parliament

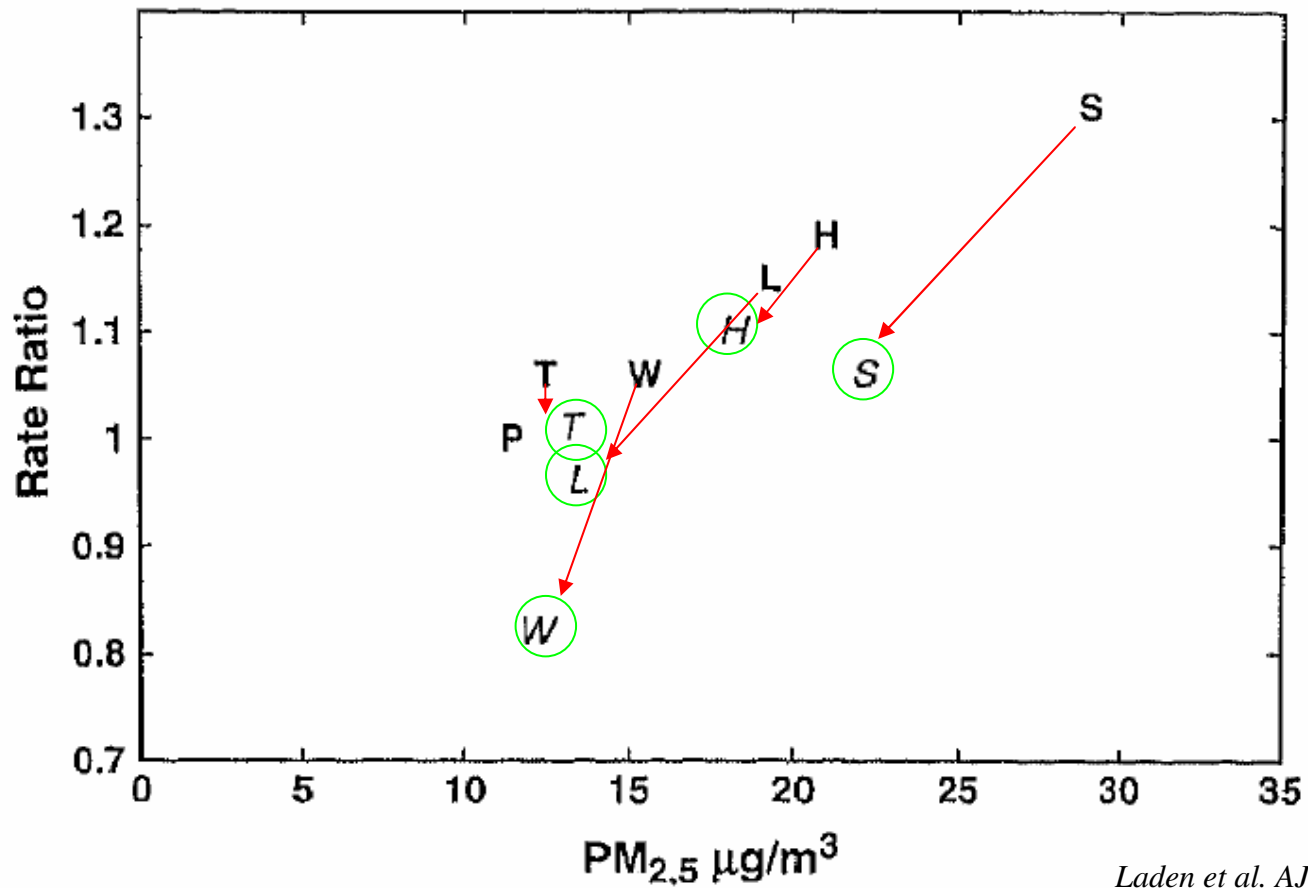
2008/50/EC , Transposition, Implementation, **Review**



*IAM : integrated assessment modelling
CBA: cost benefit analysis



Always good to know it works...



Laden et al. AJRCCM 2006

The Washington Post

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Study Links Cleaner Air to Longer Life

By [Juliet Eilperin](#)

Washington Post Staff Writer

Thursday, January 22, 2009; Page A15

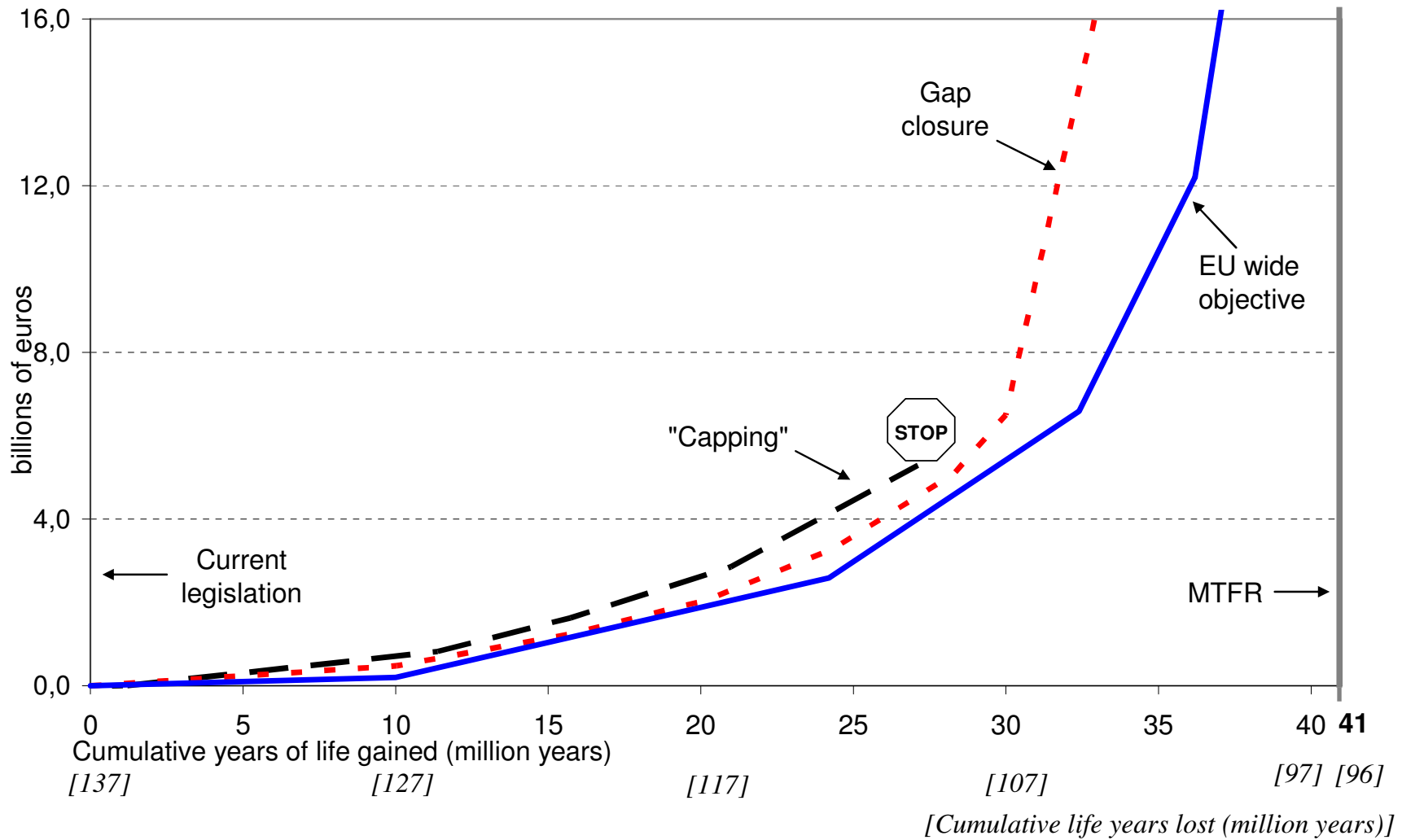
Reducing air pollution has extended average life expectancy by five months for urban residents in dozens of U.S. cities over the past two decades, researchers found.

A team from Brigham Young and Harvard universities reached that conclusion based on data on changes in air quality and life expectancy between 1980 and 2000 in 51 cities, including Washington. After taking into account extending effects of other factors, including

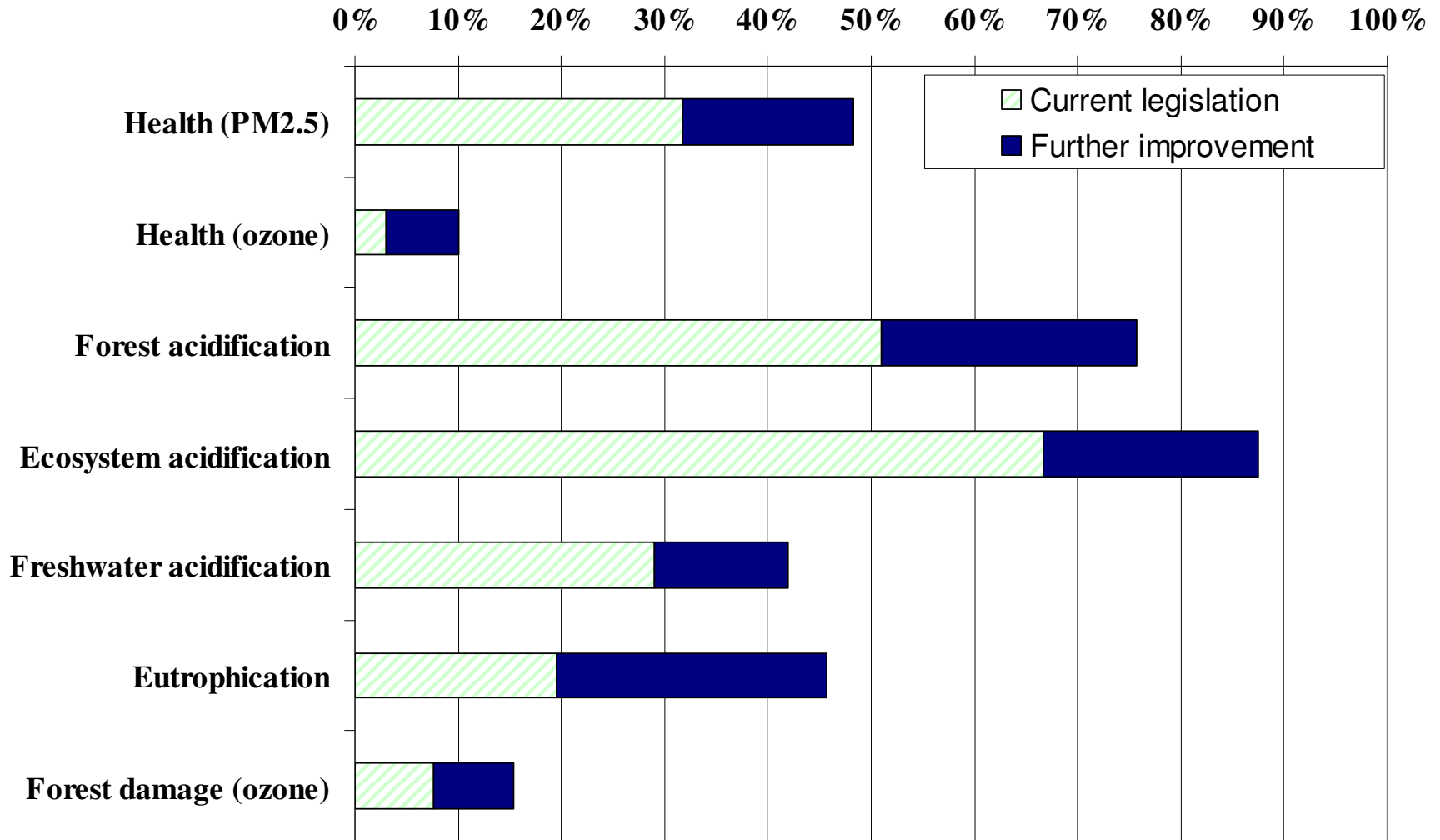
Particles in CAFE

- **Baseline up to 2020 – do we need to do more?**
 - YES
- **Can we fix the problem fully in a reasonable time?**
 - NO > setting interim objectives by 2020
- **Due to strong health effects fine particles PM_{2.5} dominated the process**
- **PM non-threshold pollutant**
 - How to set meaningful standard
- **Knowledge gaps identified**
 - Not possible to consider regulating based on PM composition, finer fraction, PM numbers
 - Secondary organic PM still largely uncertain
 - Some structural measures, non-technical and local measures not possible to consider

Target setting



Improvement of health & environment indicators following the Strategy (improvement relative to 2000)



EU AQ Directive(s) - How does it work (I)

- **Assessment (monitor, model, estimate) throughout the territory**
 - Minimum requirements (# stations...) vs. proper understanding
- **Inform public, Commission & Member States**
- **Develop air quality plan where necessary**
 - good understanding, abatement measures

EU AQ Directive(s) - How does it work (II)

■ Implementation!

- Planning and fast timing essential: some measures take several years to implement
- Janecek case (ECJ 2008): individual can request that measures are taken

■ Legal sanctions after limits in force

- Commission vs. Member State before ECJ
- Individual before national court

New Directive – Expectations(I)

- **Streamlined provisions, more clarity in implementation**
 - Where limit values apply?
- **PM2.5 objectives, monitoring requirements**
 - Focused , more coherent measures, better information for further policy development
 - New approach: exposure objectives based on urban background monitoring in cities
 - Exposure monitoring operational on 1 Jan 2009!
- **More time for compliance, under conditions**
 - Art. 22 : PM10, NO2, benzene
 - Assessment of measures by Commission

New Directive – Expectations(II)

- **Expanded concept of deduction of natural contributions**
 - Better Assessment > better understanding of sources, more effective measures
- **Additional QA/QC provisions, reference methods...**
 - higher quality data (monitoring & modelling)
- **New reporting provisions,**
 - Faster availability (NRT), higher quality, spatial dimension of AQ
- **Updated guidance**
 - Support to implementation and more harmonized approach

5 objectives for PM_{2,5}

1) Target and limit value

- 25µg/m³ annual average to apply everywhere .
- Target value in 2010, **limit value in 2015**
Indicative limit value of 20µg/m³ in 2020, to be confirmed at review

2) Exposure (based on national average exposure indicator)

- PM non-threshold pollutant – adverse effects also below limit value
- Largest exposure in urban areas > average across cities
- **Exposure concentration obligation 20µg/m³ in 2015**
- **Exposure reduction target** to reduce national average measured urban background concentration **0 to >20% between 2010 and 2020** subject to later review

Provisions PM_{2,5} (I)

■ Target and limit value

- Scope, technique identical to other pollutants, with limited changes compared to established practice

■ Assessment

- Ref. Method EN14907, new provisions on QA/QC
- Similar to established, identical to PM10
 - Including ratio requirements
- 'Aggregate' PM10/PM2.5 requirement for minimum number of stations in zone
- Should sampling strategy PM10/PM2.5 be any different?
- Exposure / Average exposure indicator
 - Urban background stations 1 per million in larger urban areas
 - Equivalence issue – specific challenge for AEI
- PM2.5 speciation in rural background

Provisions PM_{2,5} (II)

■ Management

- Similar to existing provisions
- Now: AQ plans also after limit and target value entry into force
- PM2.5 has both TV and LV; exceeding margin of tolerance may modify objective of measures in a plan, but plan triggered already in 2010 by TV

■ Exposure/average exposure indicator

- Very blunt proxy for public exposure, more refined local methods can be used for guidance in taking exposure-abatement measures
- Tracking feeble AEI trends = QAQC challenge

■ Can exposure objective be used to steer abatement decisions?

■ How can it be linked within AQ plan? Is national plan required?

AQD Implementation Ongoing (I)

■ Notifications under Art.22 – time extensions

- 18 MS notified to date, NL concluded
 - (may not include all their zones in exceedance)
- Initial analysis finds
 - Lack of the assessment of impact of measures
 - Governance issues

■ Enforcement

- Lack of Plans and Programmes
- Sulphur dioxide
- PM10

AQD Implementation Ongoing (II)

■ Guidance preparation

- Review & update of existing
- Specific guidance
 - Equivalence
 - Natural contributions
 - Winter sanding/salting

■ New implementing provisions

- Streamlined, informative reporting for IT/GIS times
- **Can we facilitate exchange on measures ?**

■ Other activities

- GMES
- AQUILA, FAIRMODE
- EEA as data centre

- **Some questions remain open...**
 - Better metrics?
 - Effects of changes (tech, society)
- **Air Quality Directive review in 2013**
 - Review of health effects and impact of Community measures
 - Explicit objectives in Article 32
 - Review provision for all pollutants as appropriate
 - Explicitly PM2.5
 - Legally binding exposure reduction target, review exposure concentration obligation
 - More ambitious limit value
 - Confirm/modify indicative limit value
 - Monitoring
 - Chance to review other provisions
 - Assessment requirements in view of availability of GMES, work on modelling
 - Operational SEIS, INSPIRE

Final messages

■ PM will remain principal pollutant in the future

- PM2.5 provisions step towards better steering to final-objective relevant outcomes (health) but remain a blunt instrument. Smart implementation required!
- Ensure most PM2.5 relevant measures are taken already now to fulfil PM10 requirements
- Take all 'no regret' measures; ambitious implementation & cooperation across governance levels needed
- Several challenges addressed at EU level – follow up!

■ Review/revision

- Positive trends & good information base crucial
- Can we sharpen our policies with new metric(es)

■ Important links : Climate change, transport, indoor air

Thank you

<http://ec.europa.eu/environment/air/index.htm>

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