How to use science in policy development for CAFE

The Thematic Strategy on Air Pollution and proposed new Air Quality legislation

ACCENT ASTA Workshop
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Thematic Strategy is a response to

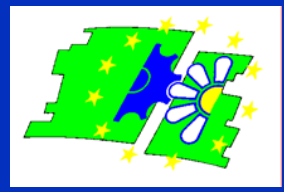
6th EAP: Objectives for Air Pollution

- *'achieving levels of air quality that do not give rise to <u>significant</u> negative impacts on and risks to human health and the environment';* **(Art 7.1. of 6th EAP)**

Towards a Thematic Strategy on Air Pollution

- **Integrated approach; consistency with other environmental policies, exploit synergies.**
- **Cost effectiveness to reach objectives**
- **Knowledge based approach**

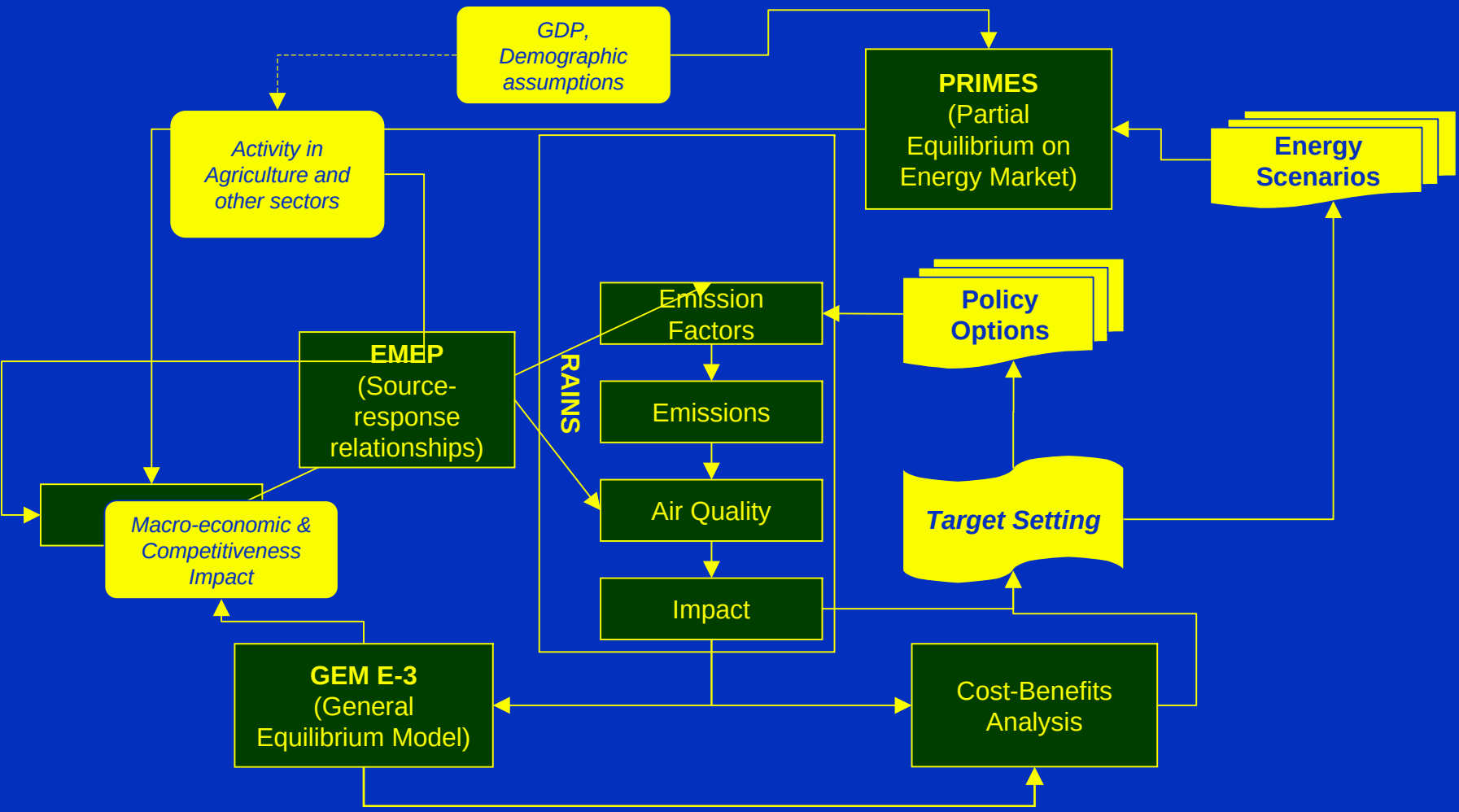
How were these interim objectives defined?



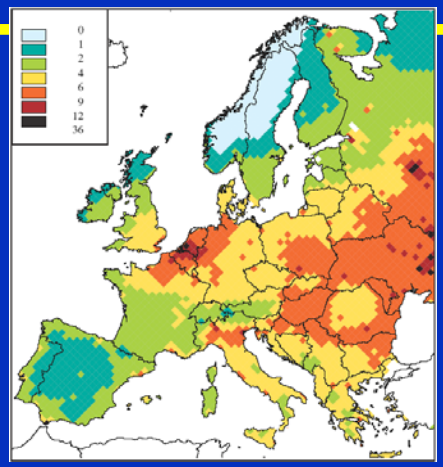
- Peer-reviewed health (WHO) and scientific advice
- CLRTAP Expert groups advice – Critical loads and levels, etc
- Assessment of the effect of current policies
- Peer-reviewed integrated assessment to develop cost-effective solutions for both health and environment
- Peer-reviewed Cost-Benefit Analysis
- Macro-economic analysis
  - Lisbon Strategy & Competitiveness
- Stakeholder involvement and consultation
  - Over 100 stakeholder meetings and over 10.000 responses in Internet based consultation

➢ Accompanied by Comprehensive Impact Assessment (170+ pages)

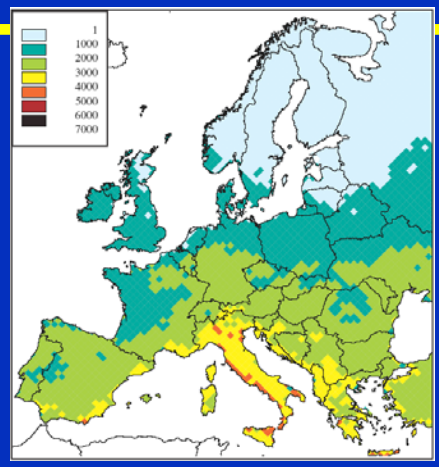
Modelling Framework



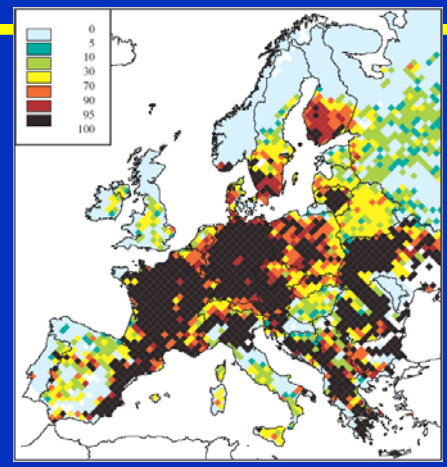
Remaining problem areas in 2020 - CAFE Baseline



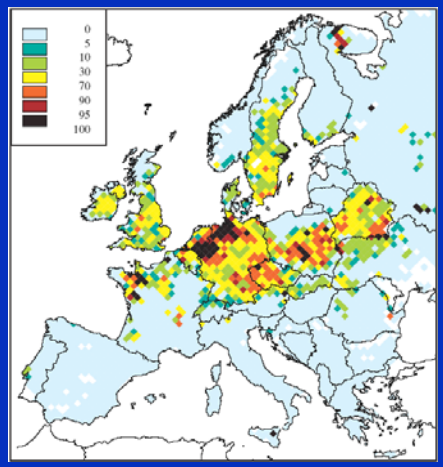
Health - PM



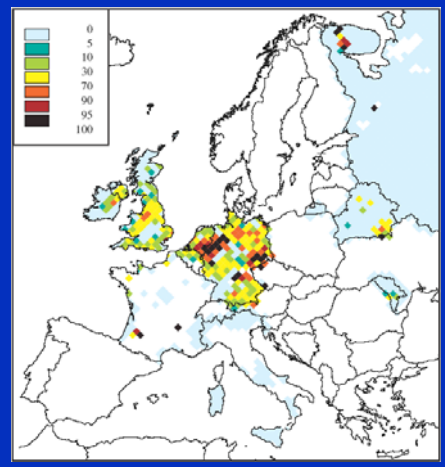
Health+vegetation - ozone



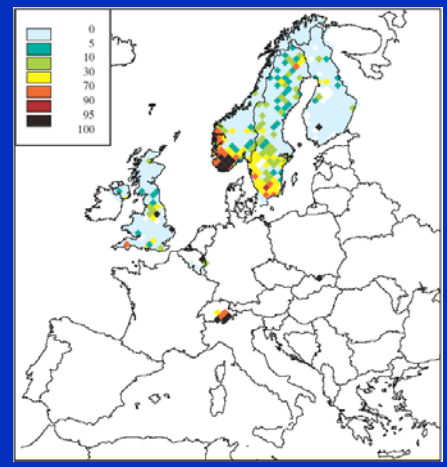
Vegetation – N dep.



Forests – acid dep.



Semi-natural – acid dep.



Freshwater – acid dep.

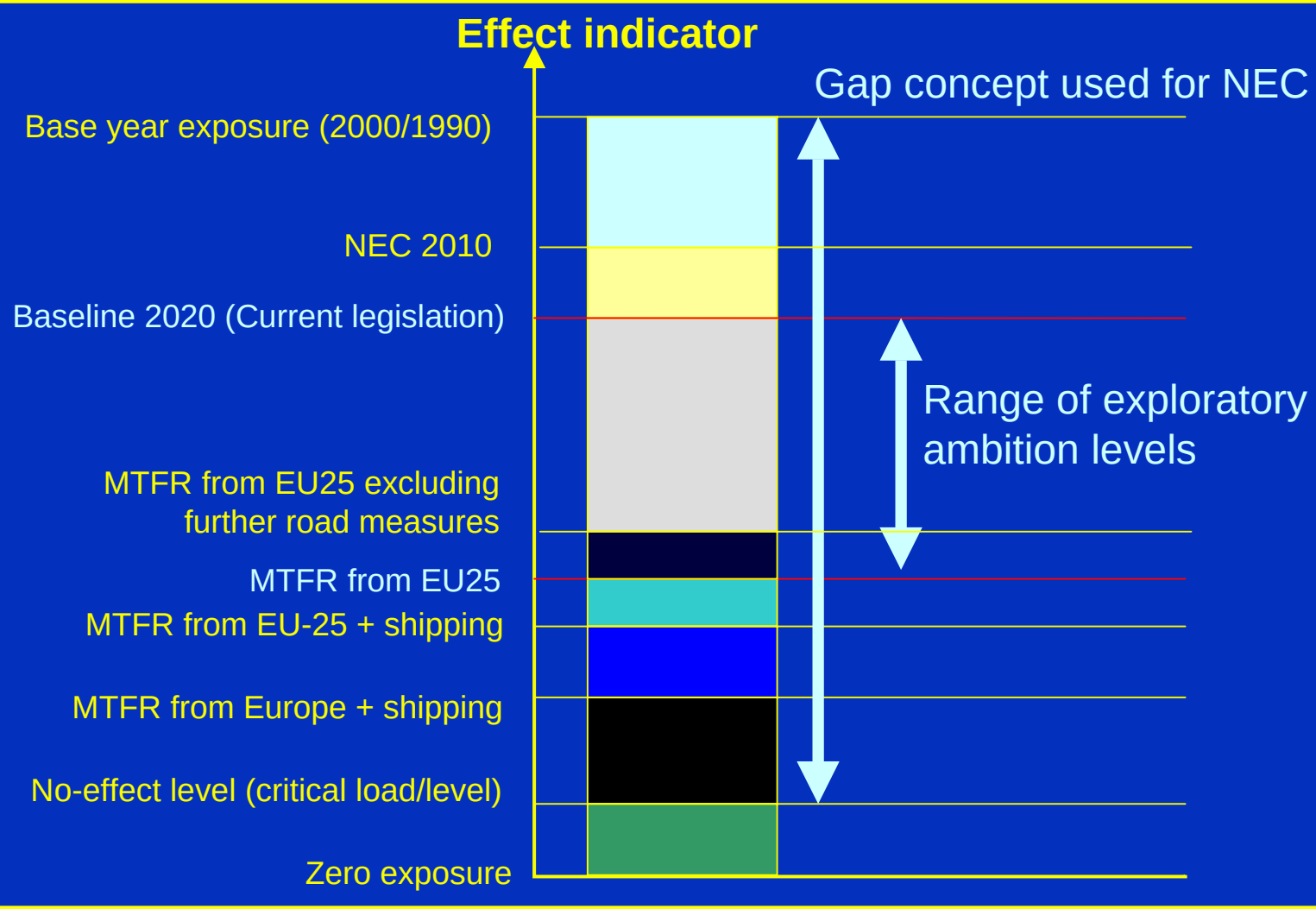
(Light blue = no risk)

PM dominates Health effects

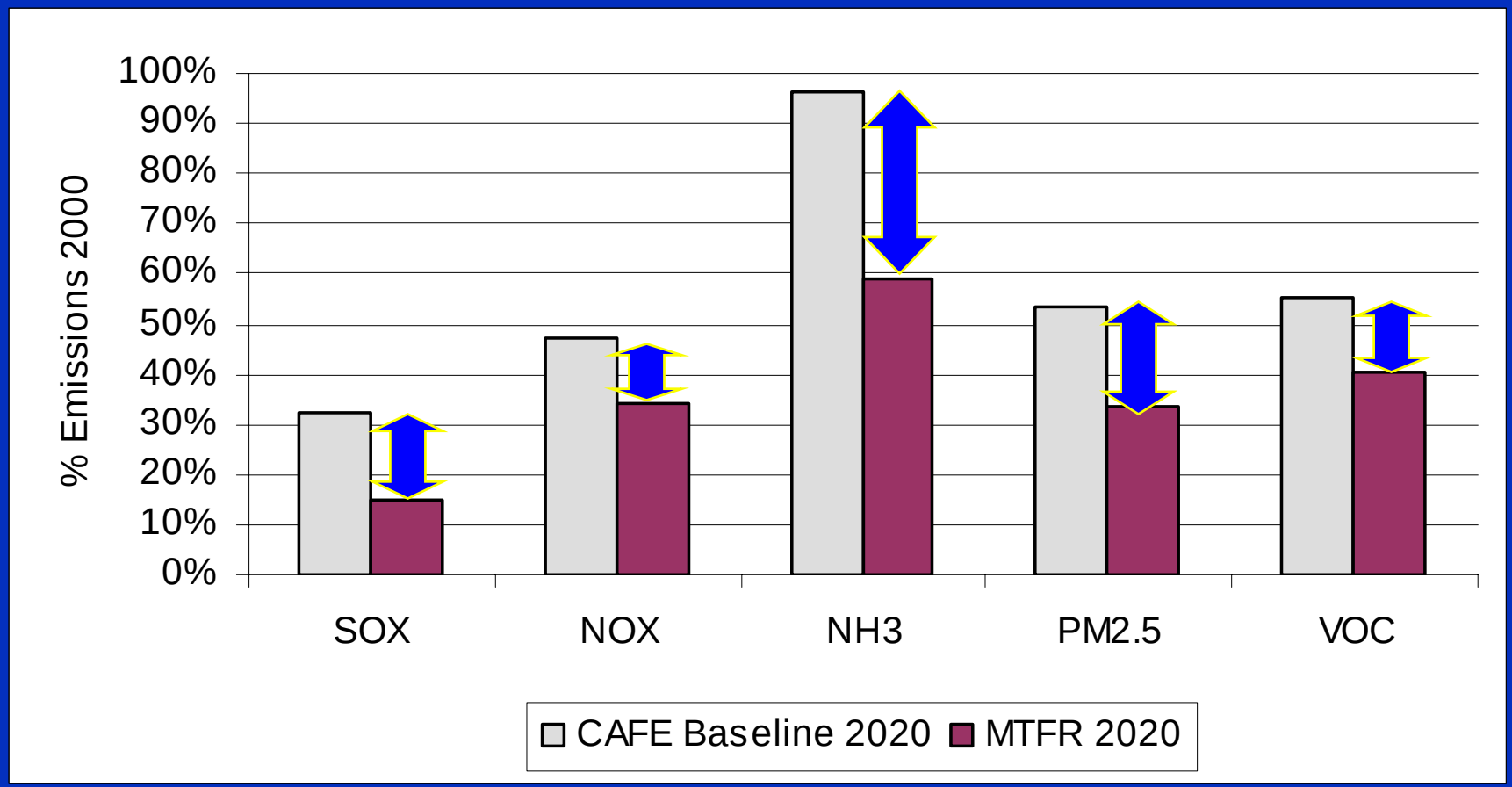
- **PM**
  - **Annual 2.5 million years of life lost or 250000 deaths + 500 infant deaths**
  - **60000 (serious) hospital admissions, 23 million respiratory medication use days, and 200 million restricted activity days**
- **Ozone**
  - **Annual impacts EU 25 ~ 20 000 deaths brought forward in year 2000**
  - **20 millions respiratory medication use days**

	Value of health damage in 2020 (€ Millions)
PM Mortality	**129,495 - 548,190**
PM Morbidity	**54,072**
Acute mortality from ozone	1,085- 2,435
Morbidity from ozone	4,197
Total Health damage	**188,848 - 608,893**

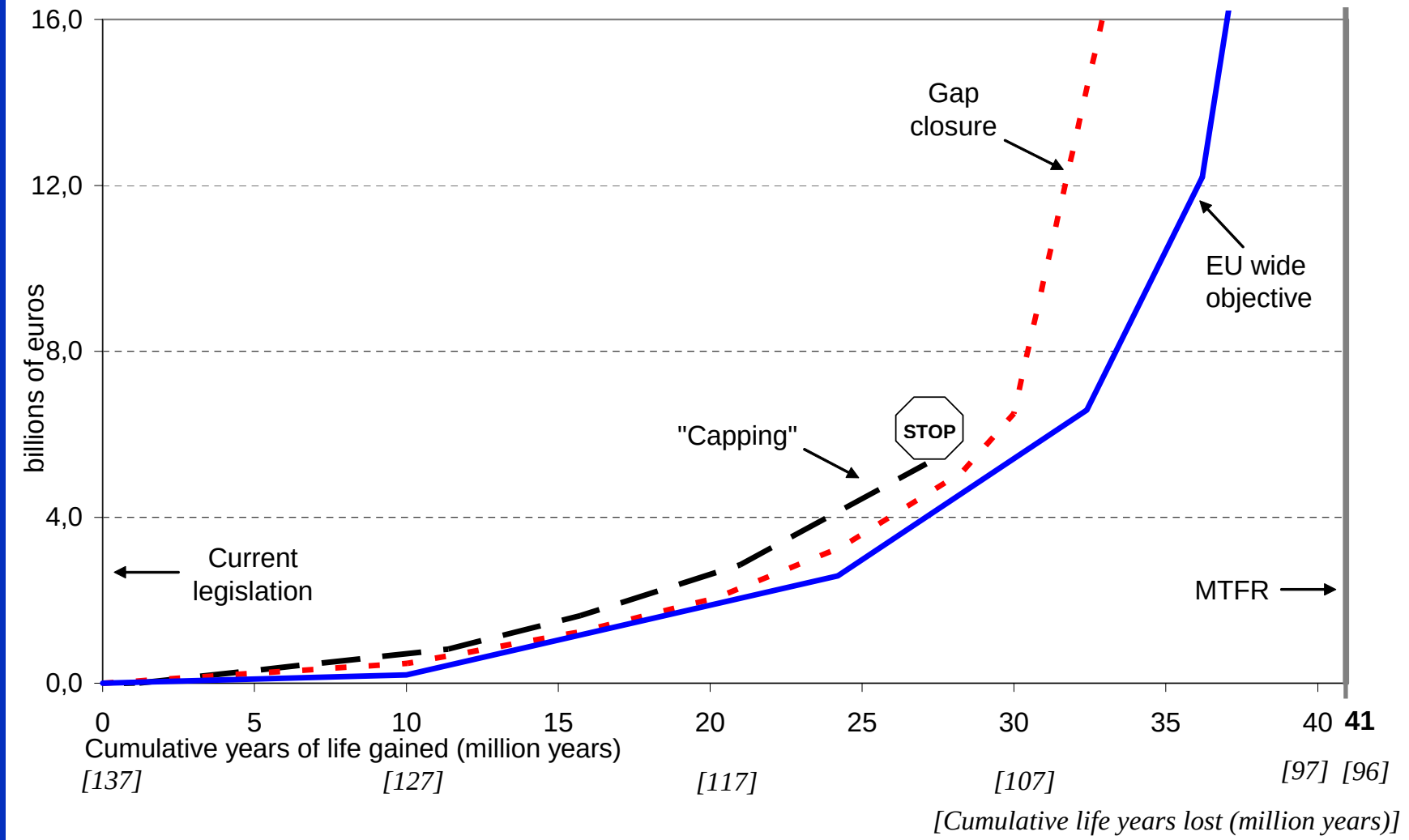
Definition of “gap closure”
used for the Thematic Strategy



Scope for further technical emission reductions



PM: Cost-effectiveness of the target setting approaches



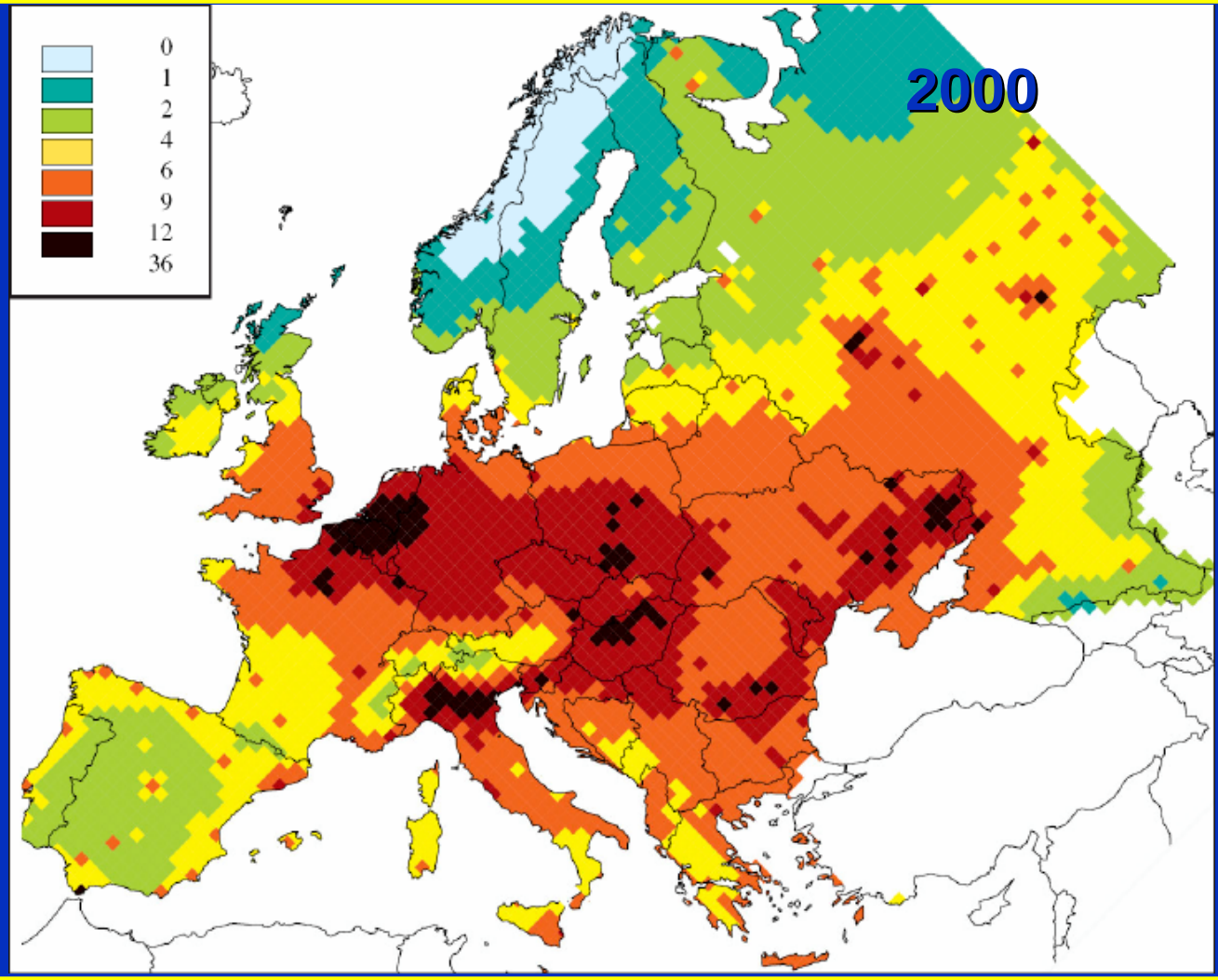
Final set of policy options June 2005

			Ambition level			
	2000	Baseline 2020	Scenario A	Scenario B	Scenario C	MTFR
EU-wide cumulative years of life years lost (YOLL, million)	203	137 (0%)	110 (65%)	104 (80%)	101 (87%)	96 (100%)
Acidification (country-wise gap closure on cumulative excess deposition)	120	30 (0%)	15 (55%)	11 (75%)	10 (85%)	2 (100%)
Eutrophication (country-wise gap closure on cumulative excess deposition)	422	266 (0%)	173 (55%)	138 (75%)	120 (85%)	87 (100%)
Ozone (gap closure on SOMO35)	4081	2435 (0%)	2111 (60%)	2003 (80%)	1949 (90%)	1895 (100%)

Impact Assessment of policy options

- Impact on emissions and air quality
- Uncertainty / sensitivity analysis
  - Gaps in the modelling framework
    - Discussion robustness result on PM
    - Advice from WHO vs SCHER
  - Influence of the chosen environmental end point (Joint optimisation vs PM optimized)
  - Agriculture: Abatement cost data, impact CAP, Nitrate and IPPC Directives
  - Road transport (EURO 5 and 6)
  - Maritime transport
- Comparison costs and health impact
- Description impacts on ecosystems and crops
- Wider economic and social impacts
  - GEM-E3 : macro-economic modelling
  - Analysis competitiveness issues US, China
- Impact on other environmental polices (Climate, Soil, Water…)

Loss in life expectancy attributable to exposure to fine particulate matter



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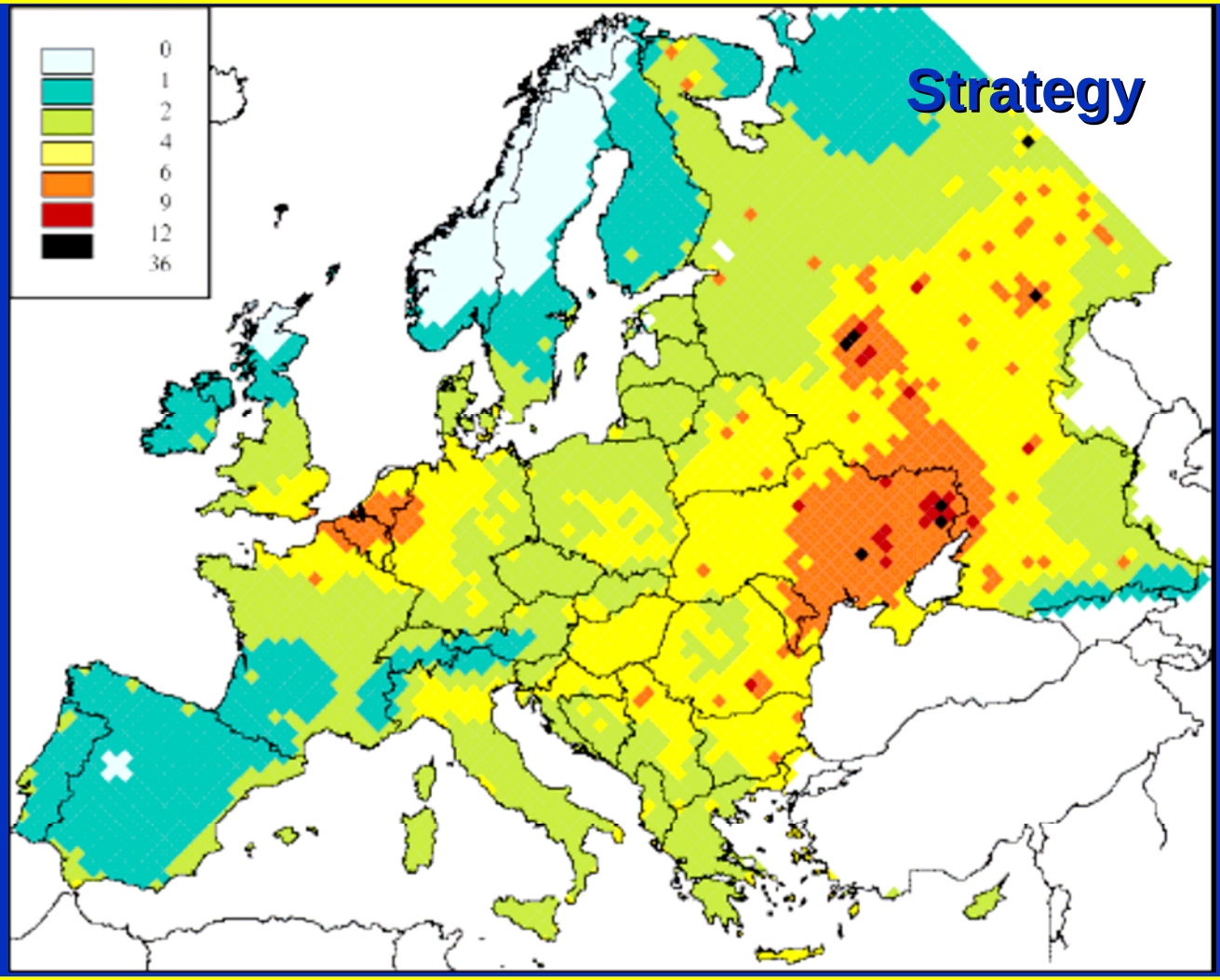
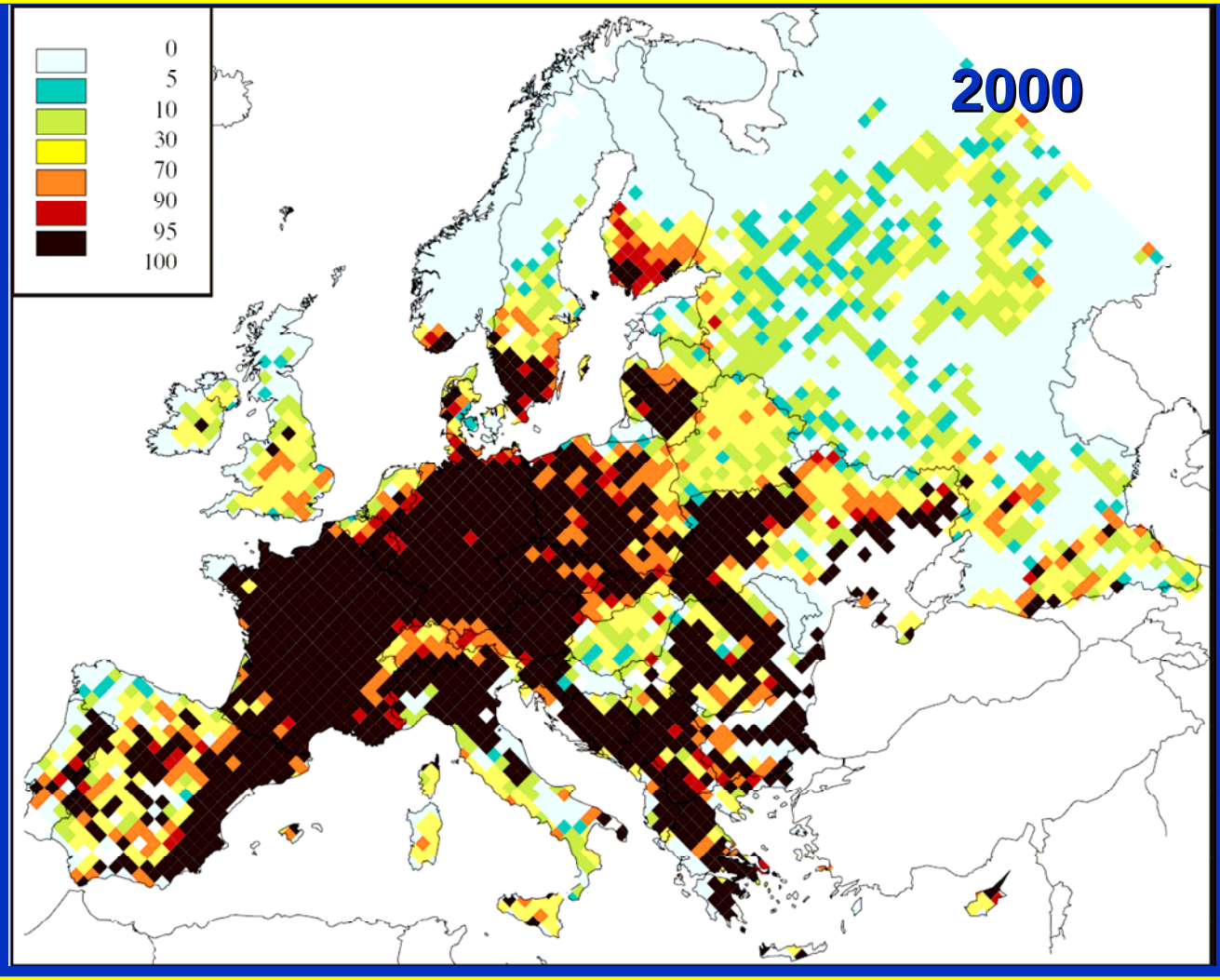


Excess nitrogen deposition



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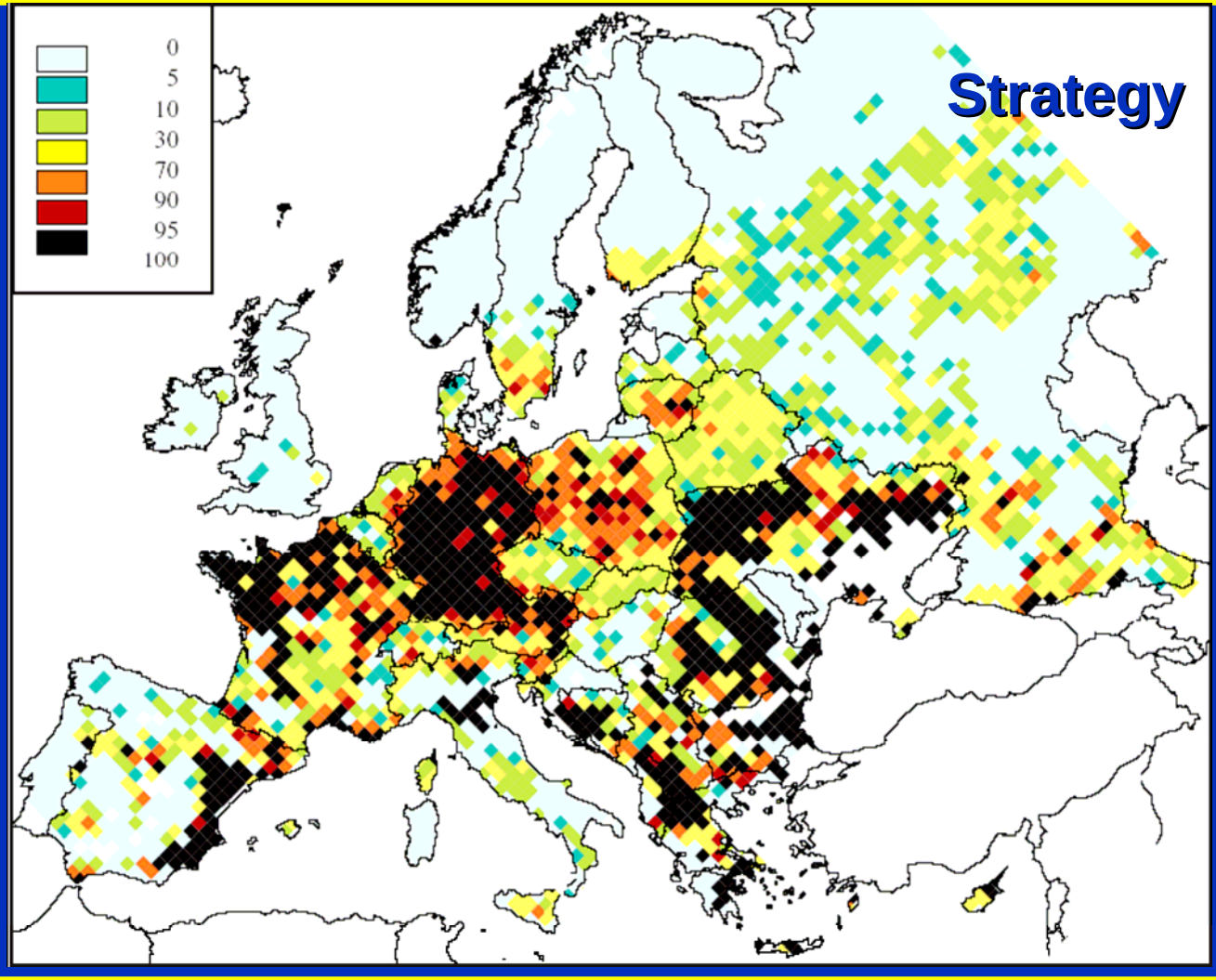
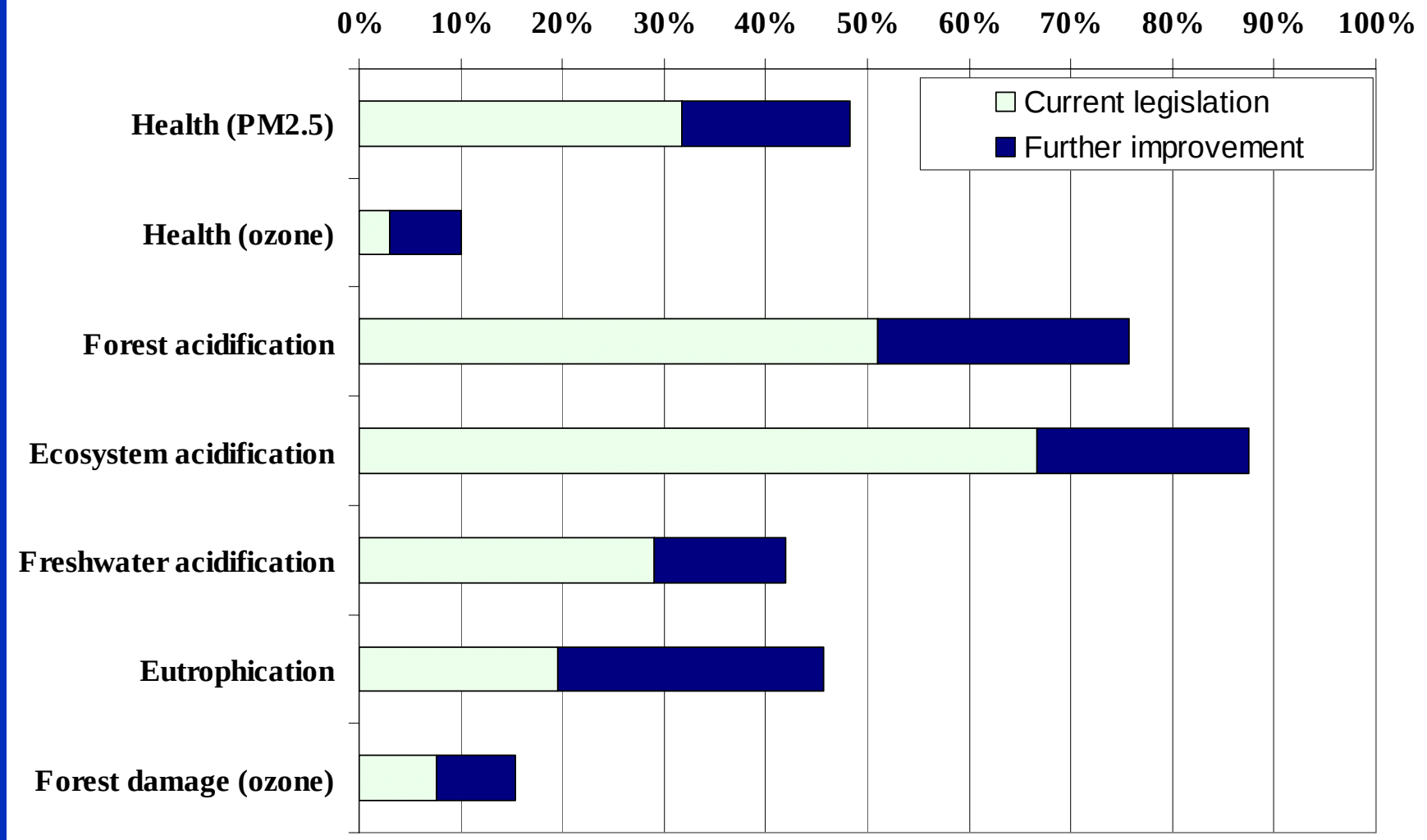
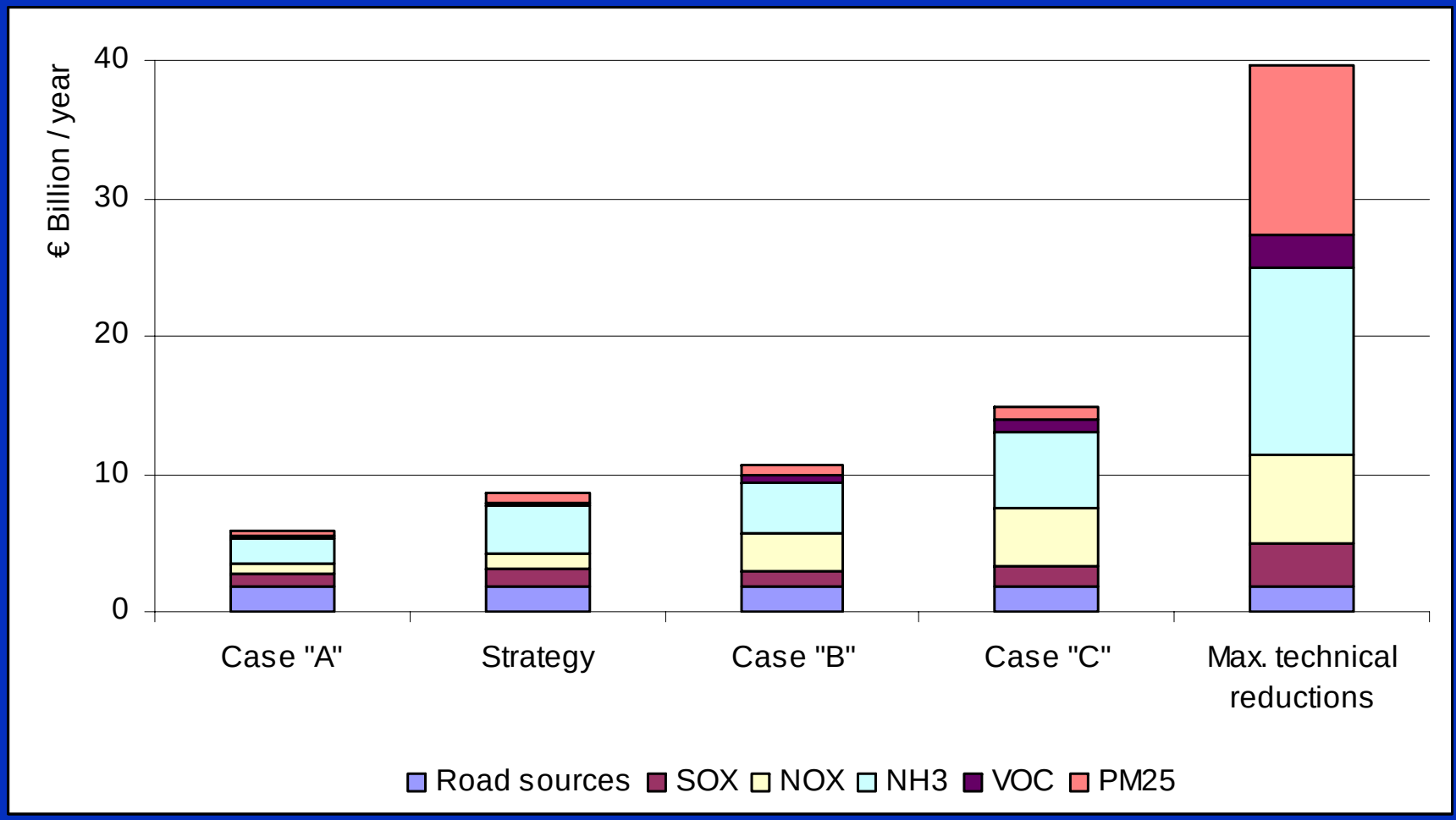


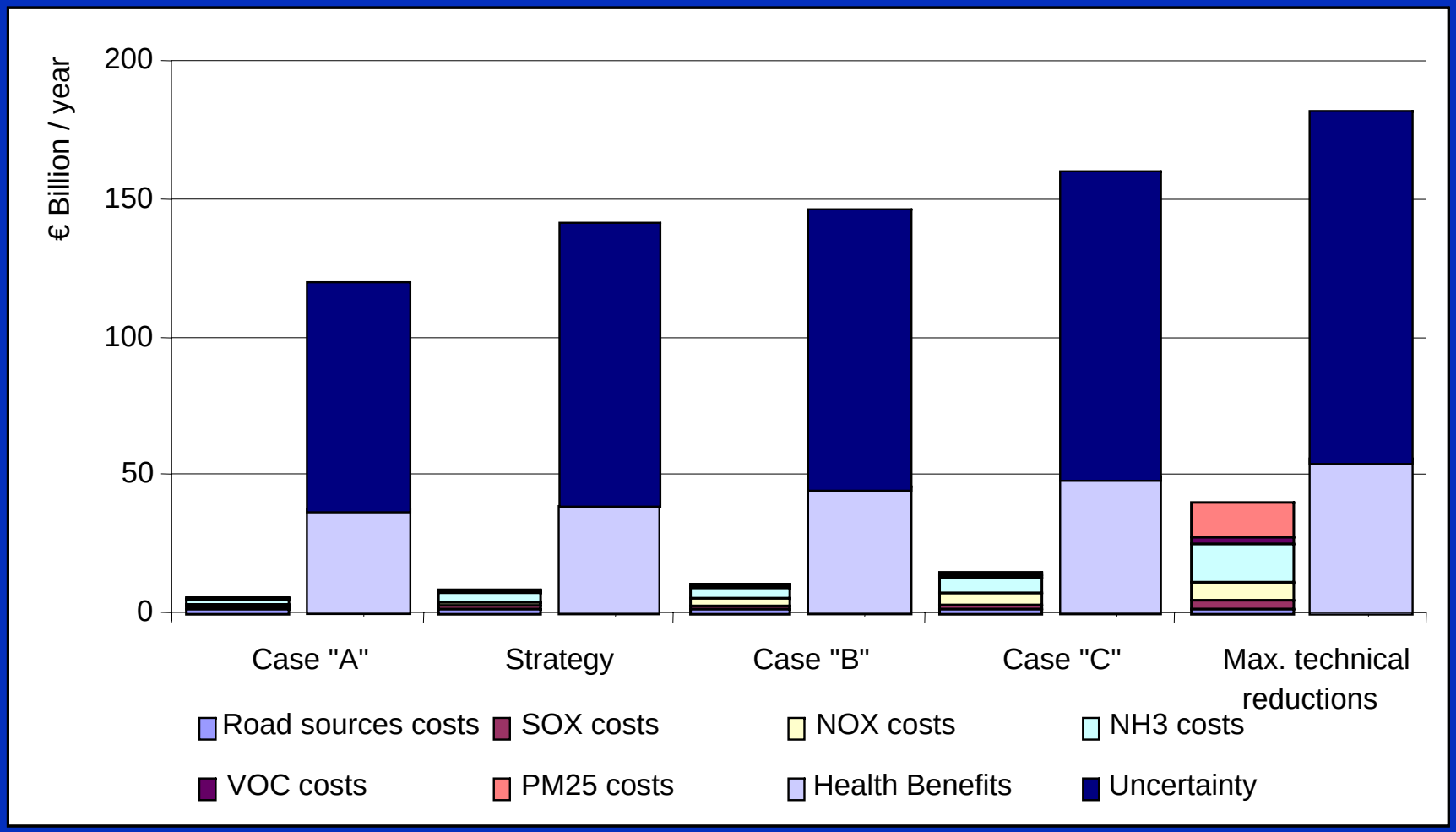
Improvement of health & environment indicators following the Strategy (improvement relative to 2000)



Emission control costs
of the CAFE policy scenarios in EU



Costs and benefits of the CAFE policy scenarios



Proposal for a new AQ Directive

- Health Advice (WHO, SCHER)
- Maintaining the present standards
- Proposals for
  - Reduction average concentration for PM2.5
  - « Concentration cap » for PM2.5
  - Accounts for natural sources of pollution
  - Flexibility - allows MS to apply a time extension in meeting AQS up to five years if objective criteria are met
- Better regulation - Improved streamlined provisions for reporting and monitoring

Conclusions and what's next

- CAFE process has been using the 'state of the art' in knowledge-based approach:
  - Baseline and Integrated Assessment Modelling
  - Cost-effectiveness analysis
  - Cost-Benefits analysis
  - Macro-economic analysis

- Thematic Strategy and proposal on AQ legislation also account for the "political and practical reality"

- Next steps
  - Pass legislation on AQ Directive
  - Revise the NEC directive (mid/fall 2006)
  - Review and revise existing legislation on sources
  - Develop new legislation and policy on sources not covered in EC
  - Initiate new research for the next policy cycle – High priorities: AP health impact, Hemispheric air pollution, nitrogen cycle – CAFÉ and research needs