

Co-ordinated international activities to abate European PM emissions

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Overview

- Introduction: history of PM abatement
- common European activities on PM pollution
 - Convention on Long-Range Transboundary Air Pollution
 - The “Clean Air For Europe” Programme
 - Contribution from Small combustion sources ?
 - Scientific programme – COST 633 (particulate matter and health)
- European activities on source specifications
- Particulate matter, air pollution and climate change
- Conclusions

Introduction: History of PM abatement

- Successful measures for local PM abatement
- Transboundary air pollution agreements do not yet cover PM
- Ambient concentration levels of fine PM are recognized as harmful since 1990's
- New efforts targeting large scale PM pollution in U.S. as well as Europe;
binding ambient air quality limits from 2005

Common European activities on PM pollution

- Convention on Long-Range Transboundary Air Pollution
- The “Clean Air For Europe” Programme
- Contribution from Small combustion sources
- Scientific programme – COST 633 (particulate matter and health)

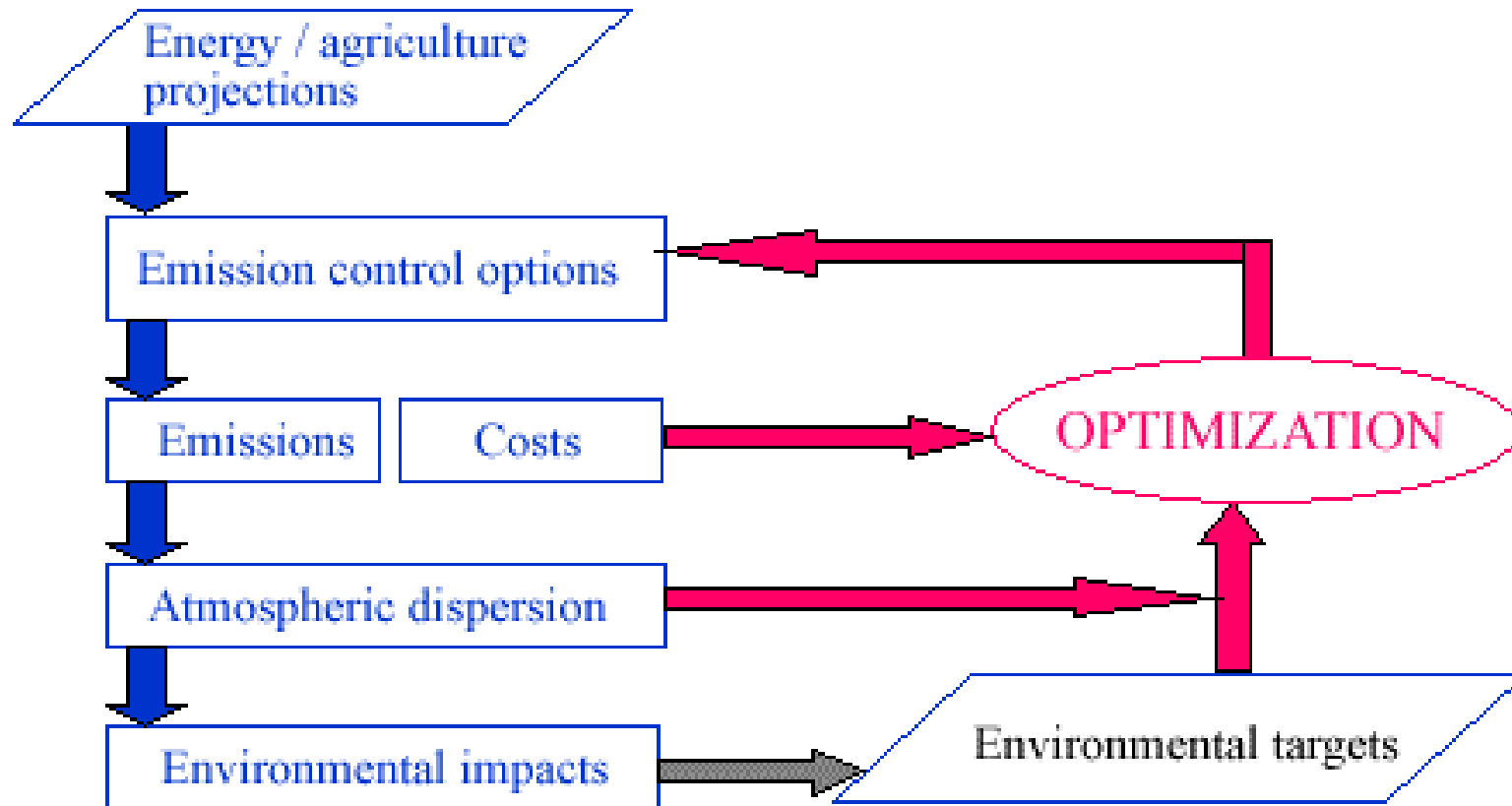
Convention on Long-Range Transboundary Air Pollution

- Virtually all of Europe participates
- Binding as an international law
- Countries are obliged to report emissions
- Successful abatement of sulphur and nitrogen compounds

The “Clean Air For Europe” Programme

- European Union induced
- EU25
- National Emission Ceilings Directive
- Update of air quality thresholds and national emission ceilings by 2005

The RAINS model



Contribution from Small combustion sources

PM10, EU27	Brown coal	Hard coal	Deriv coal	Bio-mass	Liq fuels	No comb	Sum
Power Plants	141	91	0	1	15	0	250
Small combustion	22	179	8	499	5	0	713
<i>Fireplaces</i>	0	0	0	62	0	0	62
<i>Medium boilers – automatic feed</i>	19	94	2	8	0	0	123
<i>Medium boilers – manual feed</i>	1	24	1	9	0	0	35
<i>Single house boilers – automatic feed</i>	0	0	0	5	0	0	5
<i>Single house boilers – manual feed</i>	0	10	1	47	0	0	57
<i>Stoves</i>	1	51	5	369	0	0	425

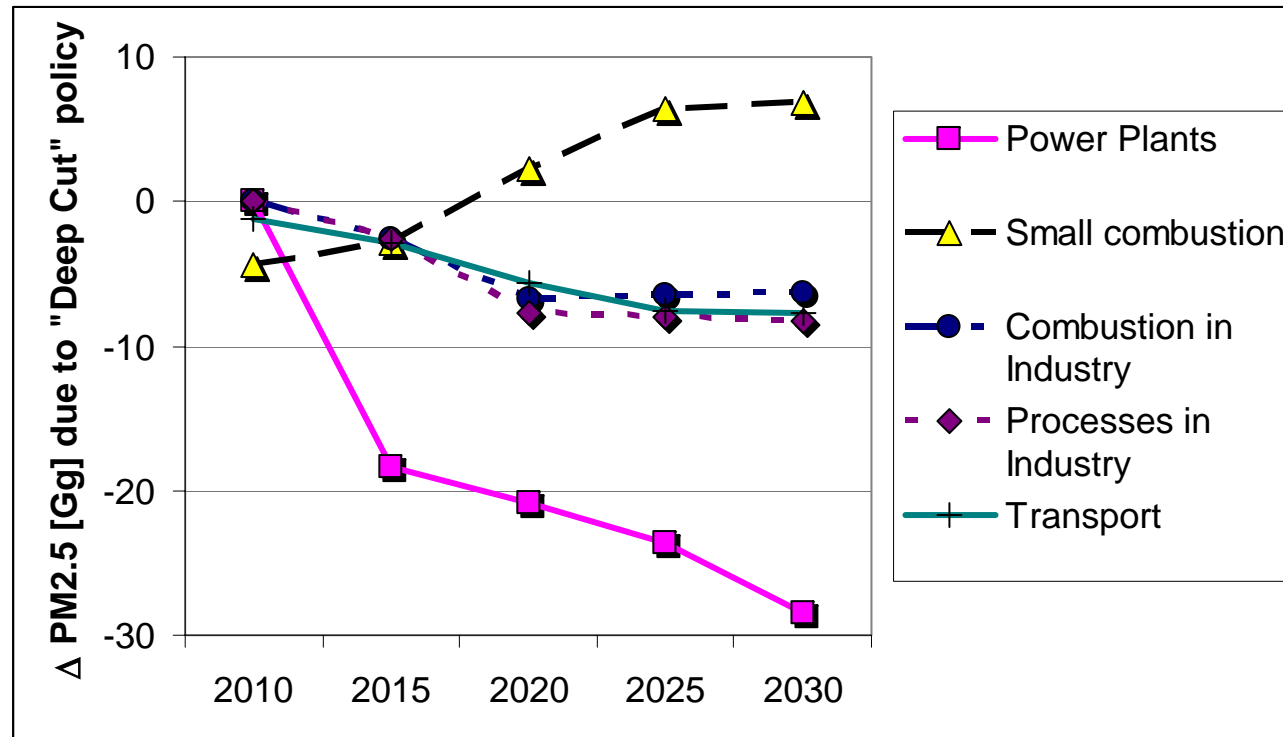
COST 633 (particulate matter and health)

- Ambient air quality data,
 - Health related issues of particles, and
 - Sources, Emission, Modelling, Economic Aspects
-
- Interdisciplinary scientific exchange

European activities on source specifications

- Economic pressure to produce “clean” devices
- Highly successful for road transport:
HDV (from 2005) observe EURO IV standard
- Less successful for off-road vehicles:
low turnover, high proportion of old equipment
- Not successful for domestic combustion installation:
isolated national (regional) source specification provide
no economic incentive to producers

Particulate matter, air pollution and climate change



European PM emissions in a low CO₂ scenario

Conclusions

- Small combustion installations, biomass fuelled: more input information required
- With introduction of climate measures, PM from biomass combustion will gain in importance
- Fugitive PM tends to occur in larger size fractions, will potentially become less important
- Integrated assessment (e.g. RAINS) allows to compare different sources, different pollutants as well as different effects under one scheme.