



Fairmode

# The EU Air Quality Package 2013

*Updated State of Play*

12 February 2015

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European Commission

DG ENV.C.3

Air Quality and Industrial Emissions

# EU Air Policy – An Overview

## The international context

- **UN ECE Convention on Long-Range Transboundary Air Pollution (CLRTAP)** and its Protocols (e.g. Gothenburg Protocol for 2010 and 2020)

## The main EU Air Policy Instruments

- **Source-specific performance standards:** euro and fuel standards, Industrial Emissions Directive, energy efficiency standards, etc.
- **National Emission Ceilings Directive (NECD):** National emission inventories and caps to limit transboundary pollution (SO<sub>x</sub>, NO<sub>x</sub>, NMVOC, and NH<sub>3</sub>):
- **Ambient Air Quality Directives (AAQD):** Maximum concentrations to be attained across the EU (SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, benzene, lead, CO, O<sub>3</sub>, arsenic, cadmium, nickel, PM<sub>2.5</sub> and BaP)
- **Thematic Strategy on Air Pollution (TSAP):** Strategic H&E impact reduction objectives and action areas up to 2020.

## The MS Air Policy Instruments

- Air Quality Plans & Programmes (AAQD)
- National Emission Inventories, Projections, and Measures (NECD)

# The main features of the NEC proposal

## Emission reduction targets vs. 2005

(NECD Art.4, Annex II & Art.5 Flexibilities)

	<u>2020*</u>	<u>2030**</u>	<u>Δ '20-'30</u>
SO <sub>2</sub>	59%	81%	22%
NO <sub>x</sub>	42%	69%	27%
NM <sub>VOC</sub>	28%	50%	22%
NH <sub>3</sub>	06%	27%	21%
PM <sub>2.5</sub>	22%	51%	29%
CH <sub>4</sub>	--%	33%	33%

\* Transposed from UNECE Gothenburg Protocol already agreed in 2012

\*\* Recalculations forthcoming based on most recent MS data revisions

# The main features of the NEC proposal

## **New & additional flexibilities compared to current NEC Directive**

- Relative targets (vs. absolute emission ceilings)
- Emission inventory adjustment procedure (up to 2020)
- Maritime off-setting (for NECA etc...)
- ...

## **Better streamlined air quality governance**

- National Air Pollution Control Programme
- To better connect national and local air pollution action

## **Better synergies with Climate and Energy policies**

- Prioritizing action on "short-lived climate pollutants"
- e.g. black carbon (when taking PM reduction action)
- e.g. ozone (by including methane ceiling)

# The main features of the MCP proposal

## Addresses main gap in policy framework (1-50 MWt)

- Above Ecodesign Directive
- Below Industrial Emissions Directive
- Increasingly important segment (in view of energy market trends)

## Sets fuel-specific emission limit values and contributes to national emission reduction needs for:

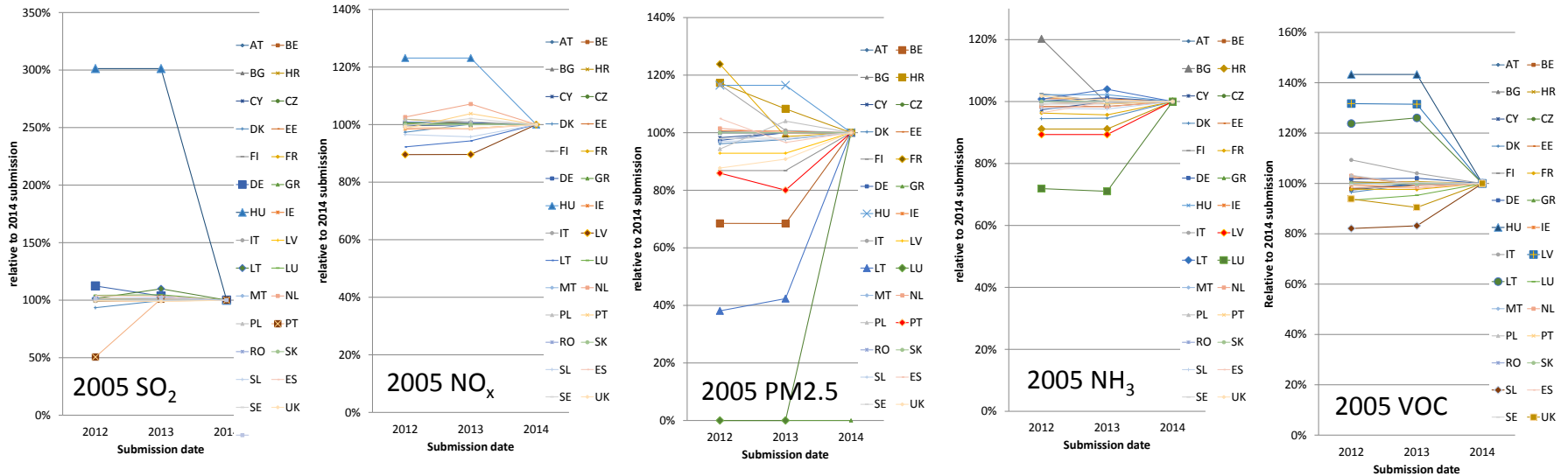
- SO<sub>2</sub>, NO<sub>x</sub> and PM
- New plants (from entry into force date + 2.5 years)
- Existing plants (from 2025 or 2030)
- Hotspot zones (benchmarks)

## Keeps admin burden low (registration not permitting)

# Council 1: Reconciliation of MS data with the data used for Impact Assessment analysis

- **Main issues:**
  - Differences in 2005 (base year) emission estimates
  - Differences in projected emissions for 2030
  - Feasibility of proposed targets
- **Bilateral contacts with all 28 Member States**
- **Outcomes reported in TSAP 13 / 14 / 16**

# Changes in emission inventories for 2005 between 2012 and 2014 submissions



While GAINS has been adjusted to 2012 submissions based on consultations with 14 Member States, many submissions have substantially changed thereafter.

# Updated emission projections and reduction commitments for 2030 (EU)

EU28	2005 [kt] <sup>1</sup>	2012	2020 GP	2030 COM 2013			2030 WPE 2014			Difference WPE-COM		
				CLE	67%GC	MTFR	CLE	67%GC	MTFR	CLE	67%GC	MTFR
SO <sub>2</sub>	7710	-48%	-59%	-73%	-81%	-83%	-74%	-81%	-84%	-1%	0%	-1%
NO <sub>x</sub>	11531	-27%	-42%	-65%	-69%	-74%	-63%	-65%	-73%	2%	4%	1%
PM2.5	1414	-12%	-22%	-27%	-51%	-63%	-32%	-54%	-62%	-5%	-3%	1%
NH <sub>3</sub>	3878	-5%	-6%	-7%	-27%	-35%	-8%	-25%	-35%	-1%	2%	0%
VOC	8775	-24%	-28%	-41%	-50%	-66%	-40%	-46%	-61%	2%	4%	5%
PM <sub>eq</sub>	5315	-29%	-38%	-49%	-63%	-69%	-50%	-63%	-69%	-1%	0%	0%

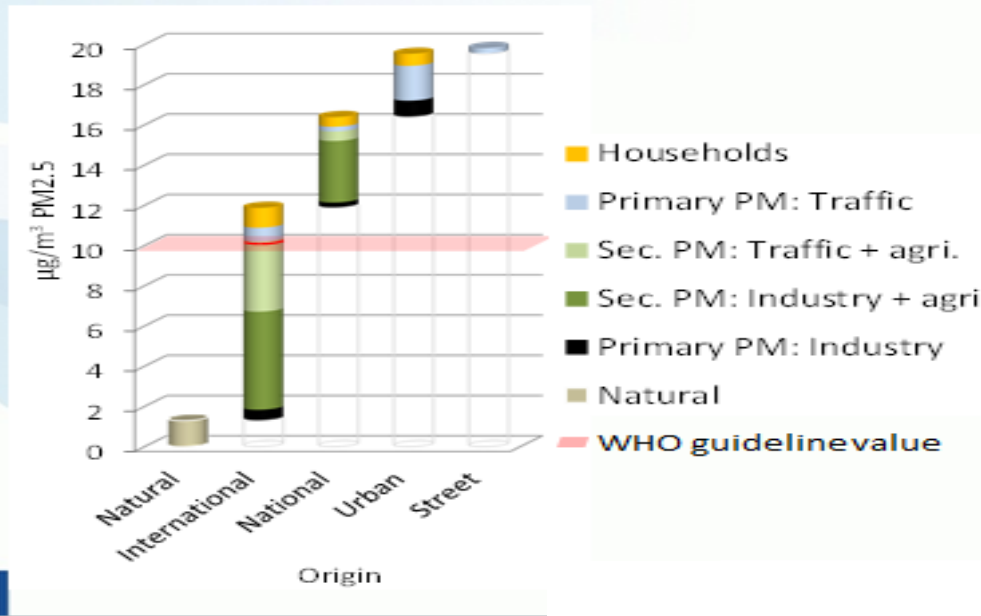


# Council 2: Ambition Level of NECD (compliance with PM 2.5 WHO guideline)

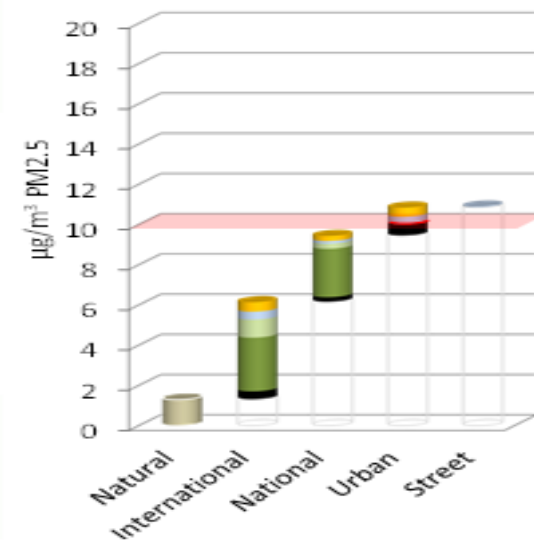
## Origin of PM<sub>2.5</sub> in Belgium

Average of 4 urban AIRBASE stations modelled in GAINS

2009



2030 Commission proposal



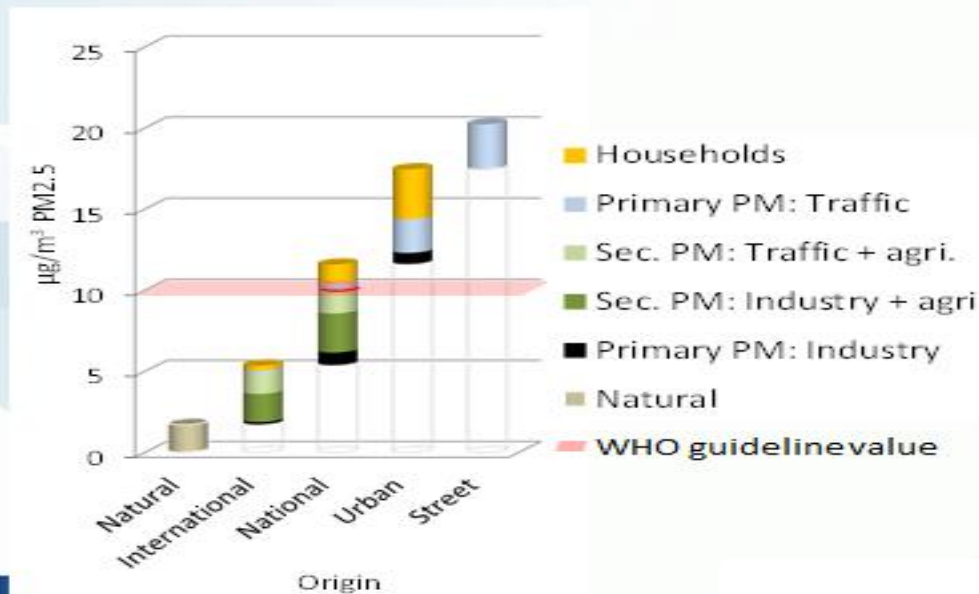
Based on: IIASA TSAP 12 Report (2014)

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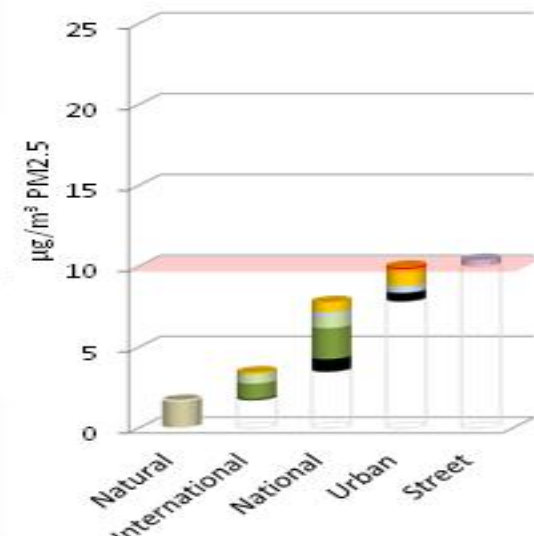
## Origin of PM2.5 in France

Average of 29 urban AIRBASE stations modelled in GAINS

2009



2030 Commission proposal



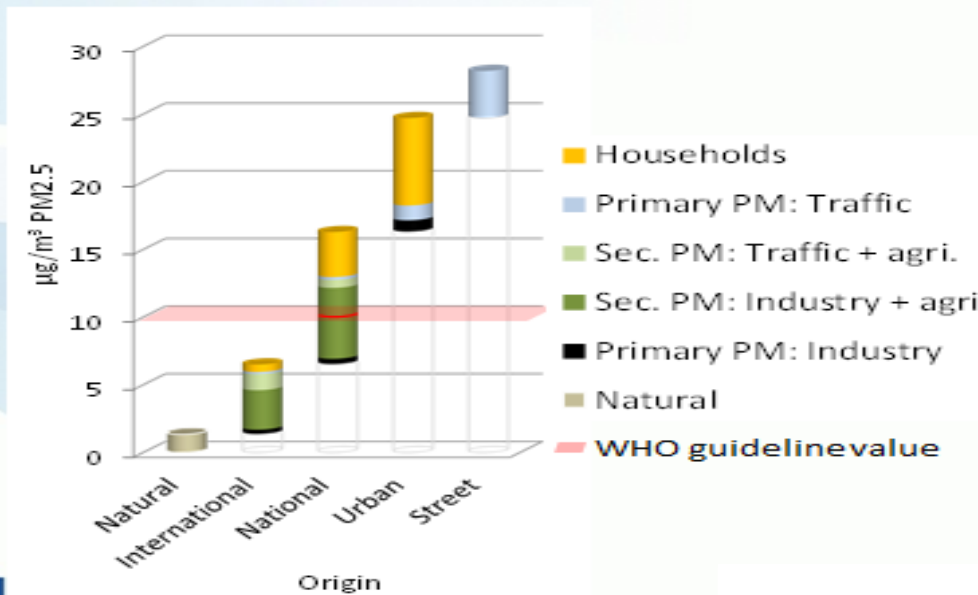
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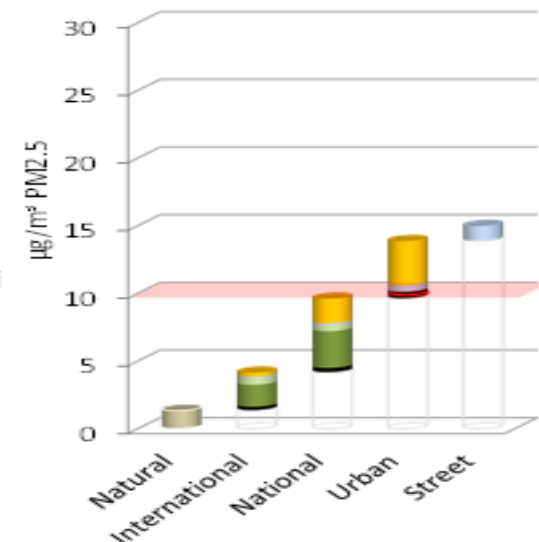
## Origin of PM<sub>2.5</sub> in Poland

Average of 142 urban AIRBASE stations modelled in GAINS

2009



2030 Commission proposal



Based on: IIASA TSAP 12 Report (2014)

## Council 3: Additional or alternative flexibility based on 'PM equivalence'?

Relative ceilings, emission inventory adjustments, maritime offsetting, joint implementation (methane)...

... The sum of the emissions of the five pollutants, each weighted by the respective PM equivalent factor, must remain below the weighted sum of the five NECs

The sum of the percentage exceedances in each ceiling cannot be greater than 10.

Pollutant	Weight $k_x$
PM2.5	1.0
SO <sub>2</sub>	0.298
NO <sub>x</sub>	0.067
NH <sub>3</sub>	0.194
VOC	0.009

## **Council 4: Climate, energy, and agriculture**

- Methane ceilings
- Ammonia ceilings
- ...

## **Council 5: Smart ('light') regulation**

- Reporting frequency
- Monitoring obligations
- ...

## Summing up where the NECD is now ...

- Better reconciliation obtained between MS and IIASA 2005 base year data;
- All reduction commitments in Annex II recalculated and achievable;
- National projections to 2030 not suitable basis for optimisation because departing substantially from PRIMES/CAPRI in ways which are not mutually consistent (sensitivity analysis).
- Limited offsetting between pollutants is possible without significantly compromising environmental objectives.
- Implementation of the package will make substantial progress towards meeting the WHO guideline for PM<sub>2,5</sub> in 2030.
- Early implementation initiatives can/should help building confidence by MS

## **Link to Fairmode work**

### **Air quality assessment modelling**

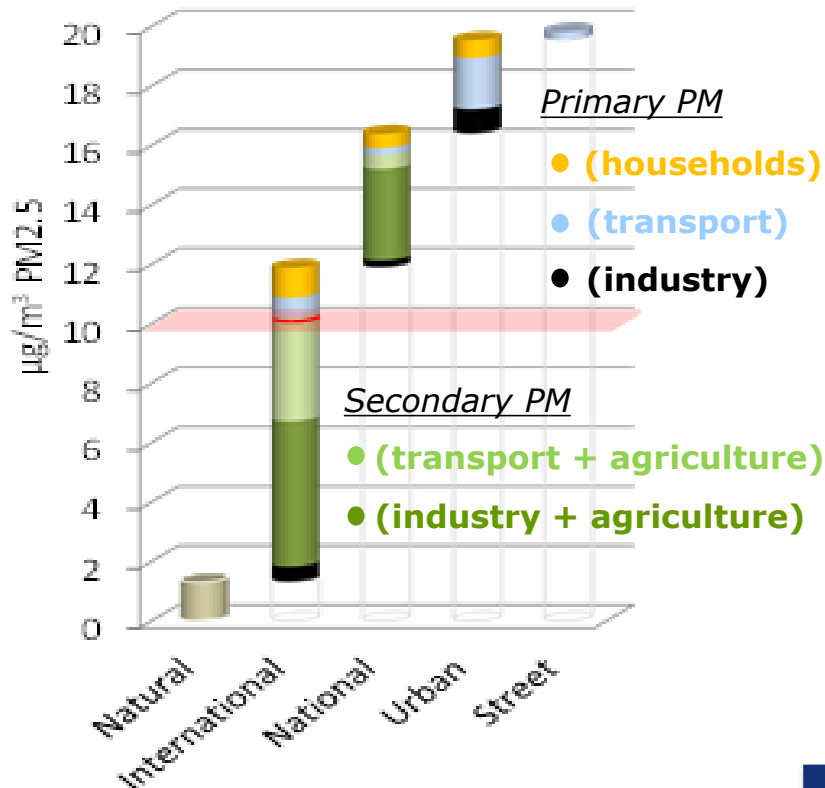
- Extrapolation (of measured concentrations)
- Validation (of emission inventories)
- Standardisation (and certification)
- ...

### **Air quality management modelling**

- Source apportionment
- Forecasting & Decision Support Systems
- 2020 focus: AAQD Compliance
- ...

# Modelling outcomes help make a case ...

Belgium (2009)



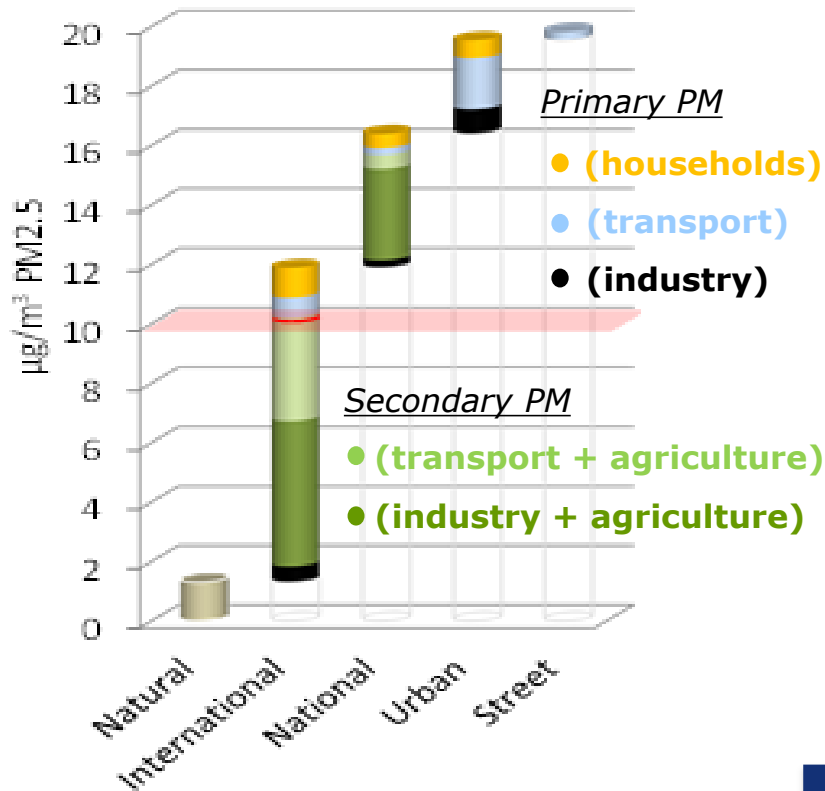
Reducing (urban) air pollution requires:

- Updating transboundary air pollution limits notably for ammonia
- Aligning local and national air pollution policies and measures
- Supporting full implementation of existing air quality policy framework and promoting best practice

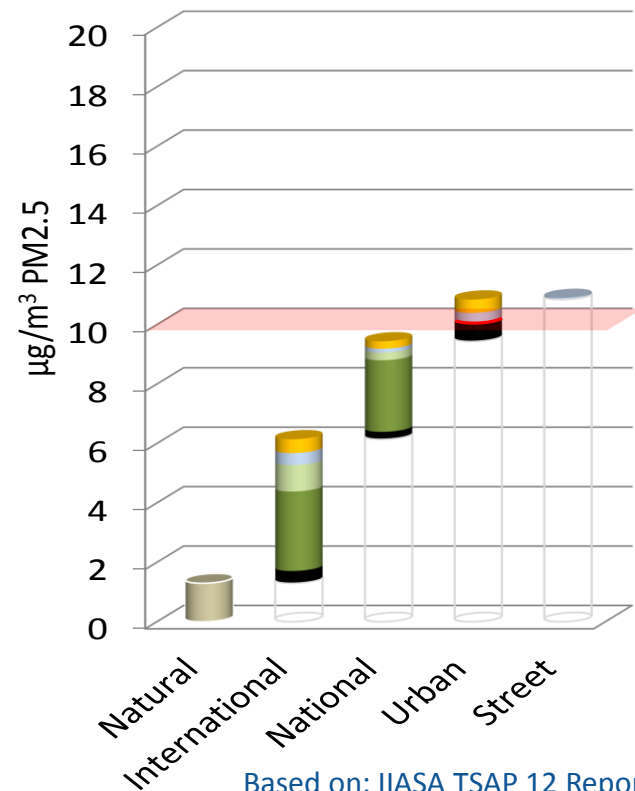


# Modelling outcomes help make a case ...

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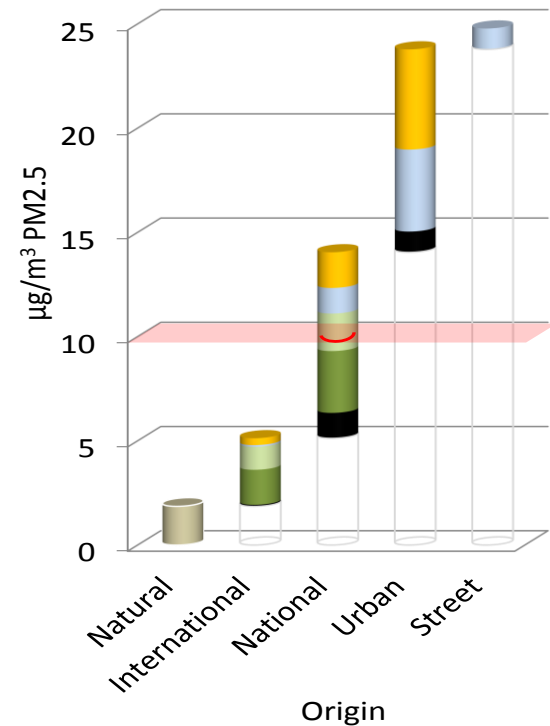
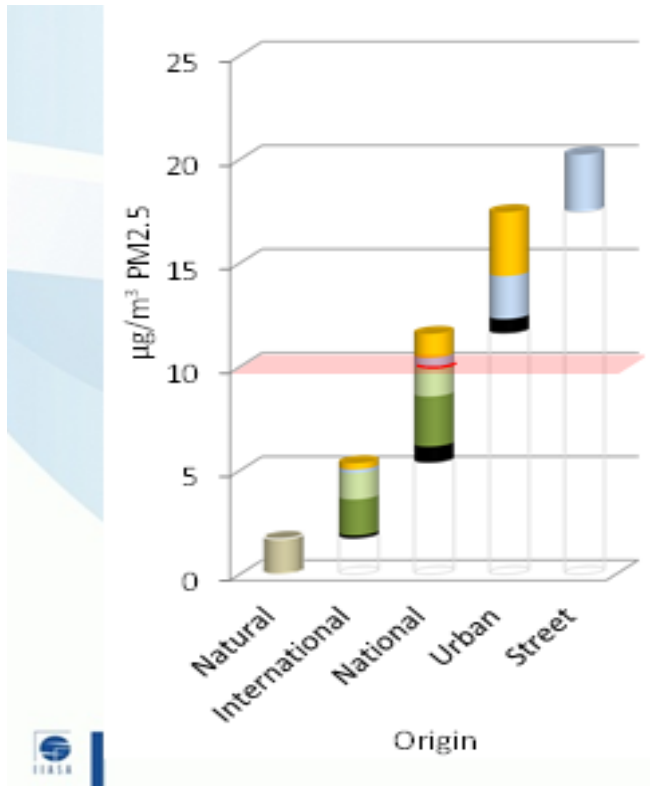
Belgium (2030 Proposal)



## ... even more so if translated to a local level ...

France, average of the urban AIRBASE stations  
(PM2.5, 2009)

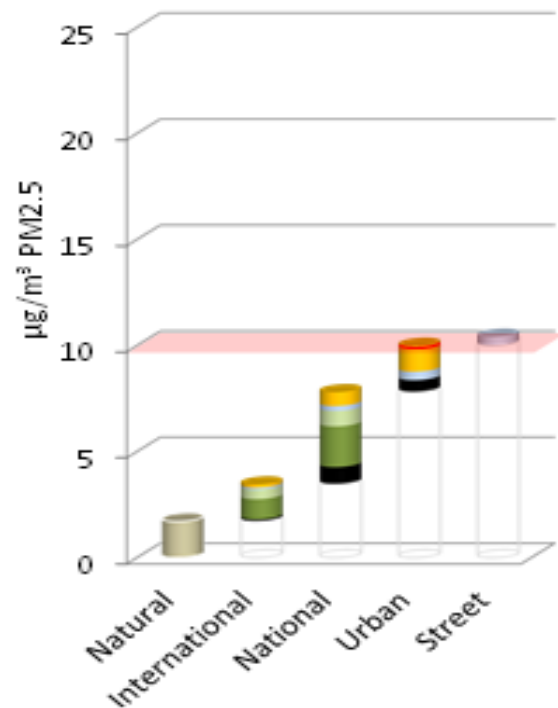
Lyon, Centre Ville  
(PM2.5, 2009)



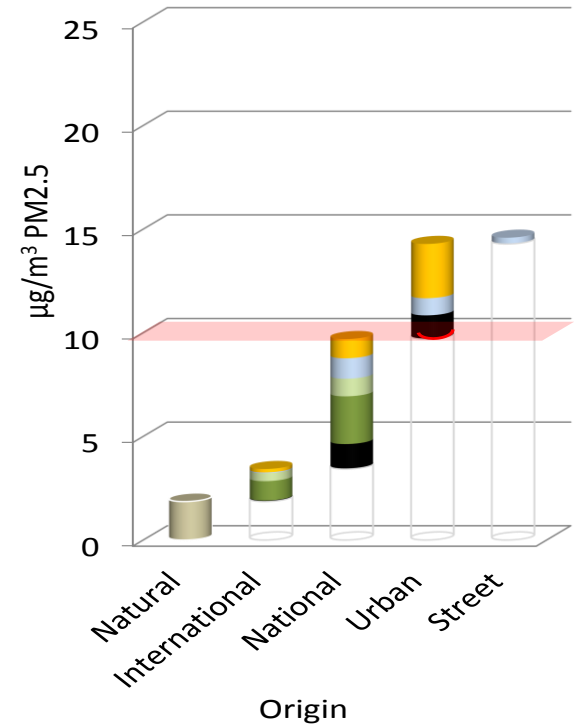
Source:  
IIASA GAINS

## ... even more so if translated to a local level ...

France, average of the urban AIRBASE stations  
(PM2.5, 2030 COM Proposal)



Lyon, Centre Ville  
(PM2.5, 2030 COM Proposal)



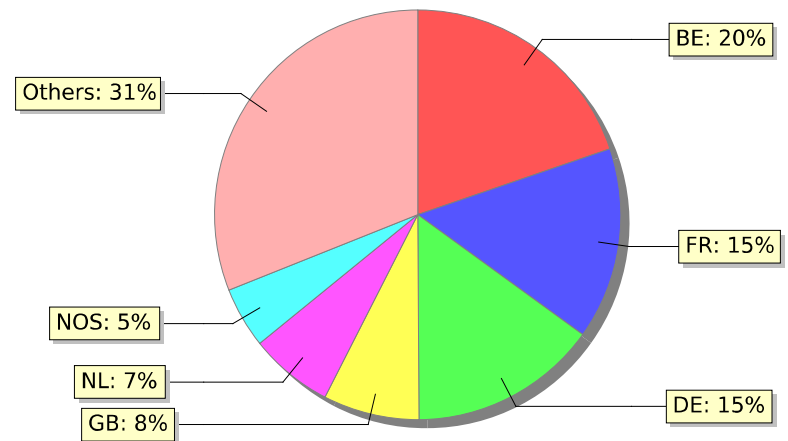
Source:  
IIASA GAINS

## ...and help identify whom reductions depend on

PM2.5 emission reductions in an NEC proposal compliant scenario for Belgium

	Activity changes 2005-2030	CLE control measures 2005-2030	Additional control measures 2030	Total reduction
Power and heating plants	0.2	-0.1	-0.8	-0.7
Domestic combustion	6.2	-2.5	-6.1	-2.4
Industry	-1.3	-0.4	-1.9	-3.6
of which				
Refineries	-0.2	-0.3	-0.1	-0.5
Other industries	-1.1	-0.1	-1.8	-3.1
Road transport	0.9	-6.9	0.0	-6.0
of which				
Light duty	0.4	-4.6	0.0	-4.2
Heavy duty	0.4	-2.3	0.0	-1.9
Non road mobile	-0.5	-1.3	-0.2	-2.0
Other sectors	0.3	-0.1	-0.7	-0.5
<b>TOTAL</b>	<b>5.7</b>	<b>-11.2</b>	<b>-9.8</b>	<b>-15.2</b>

Main contributors to concentrations of Urban PM2.5 in Belgium (2010)



## Some food for thought for FAIRMODE

- Need to make sure we can use FAIRMODE outcomes for policy development support
- Need to make sure we can use FAIRMODE to better connect to national, regional and local air quality management – and future revision of AQ Directive
- Reflect on relevance of FAIRMODE for a future European Clean Air Forum & Outlook

## Further info

[http://ec.europa.eu/environment/air/clean\\_air\\_policy.htm](http://ec.europa.eu/environment/air/clean_air_policy.htm)

## Thank You