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# **Brief report on the recent developments at IIASA (IAM GAINS)**

COST729, MC Meeting, Lisbon, 23-25 April, 2008

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- NECD News
- Scales
- Availability of national data in GAINS
- Further development of IAM GAINS

# National Emission Ceilings Directive review

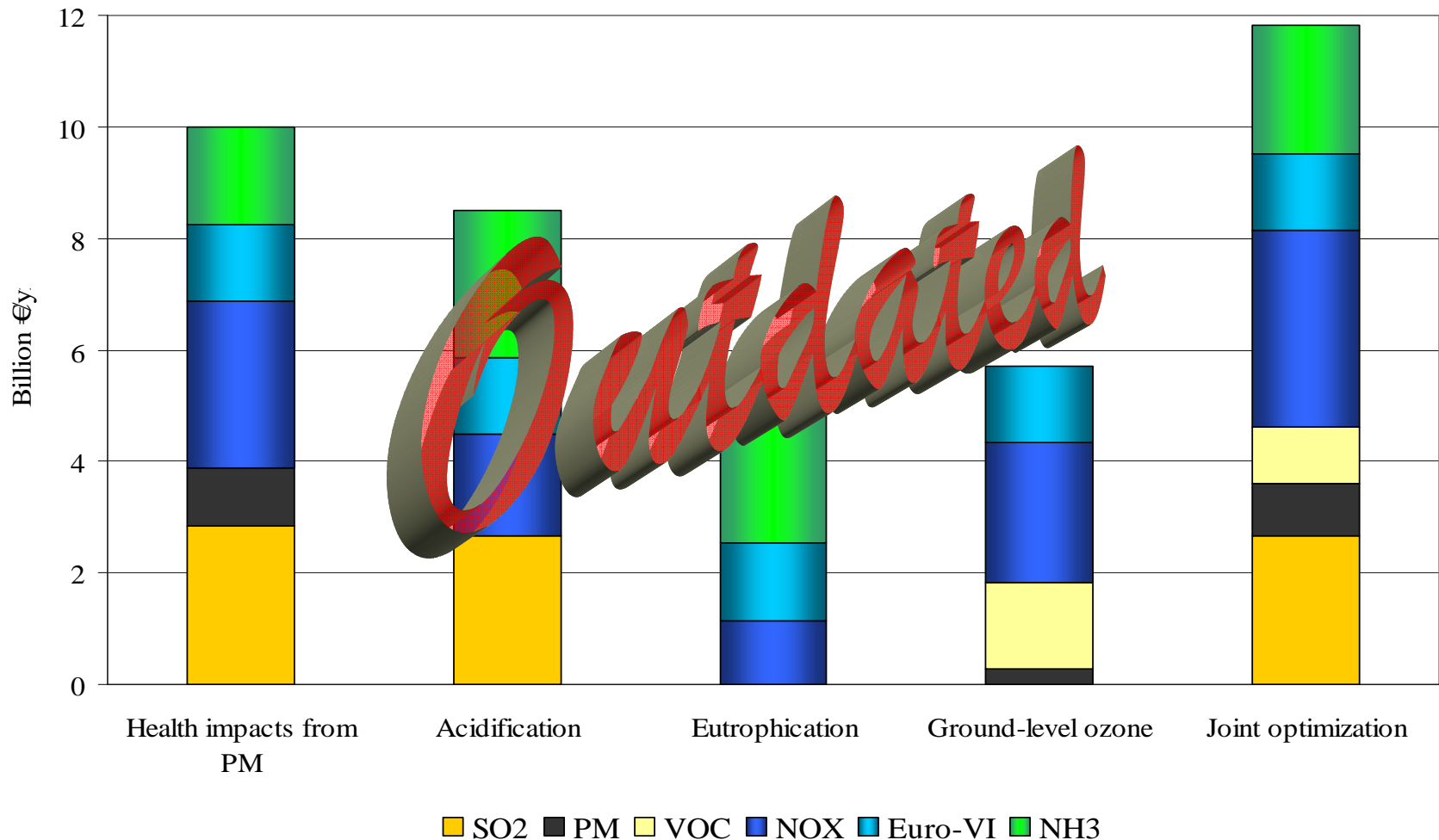
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- Not allowed to share the news 
- Latest round of calculations done and delivered to the Commission (*the baseline scenario includes burden sharing agreements*)
- The Commission will present the NEC proposal to the Parliament in June 2008 ... *and only then we might be able to share the results publicly*

# Nitrogen is an essential element of current policies

## Additional emission control costs for CAFE targets – EU-27



# Scales

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- Not much new
- Spatial and temporal resolution of GAINS remains principally the same (annual, country or province)
- For PM impact calculation (YOLL) urban adjustment coefficients are used; derived within the City-Delta project
- However,
  - For nitrate leaching NUTS2 and NVZ level data are used
  - Some parameters are estimated using monthly or seasonal data
  - An attempt of linking certain categories of farms (operations) to where and what type of manure is spread is discussed within EC4MACS

# Availability of national data in GAINS (1)

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- CAFE and NECD Review consultations carried over few years were the platform for communication with countries
- The communication continues via the online model available from *[www.iiasa.ac.at/gains](http://www.iiasa.ac.at/gains)*



# Availability of national data in GAINS (3)

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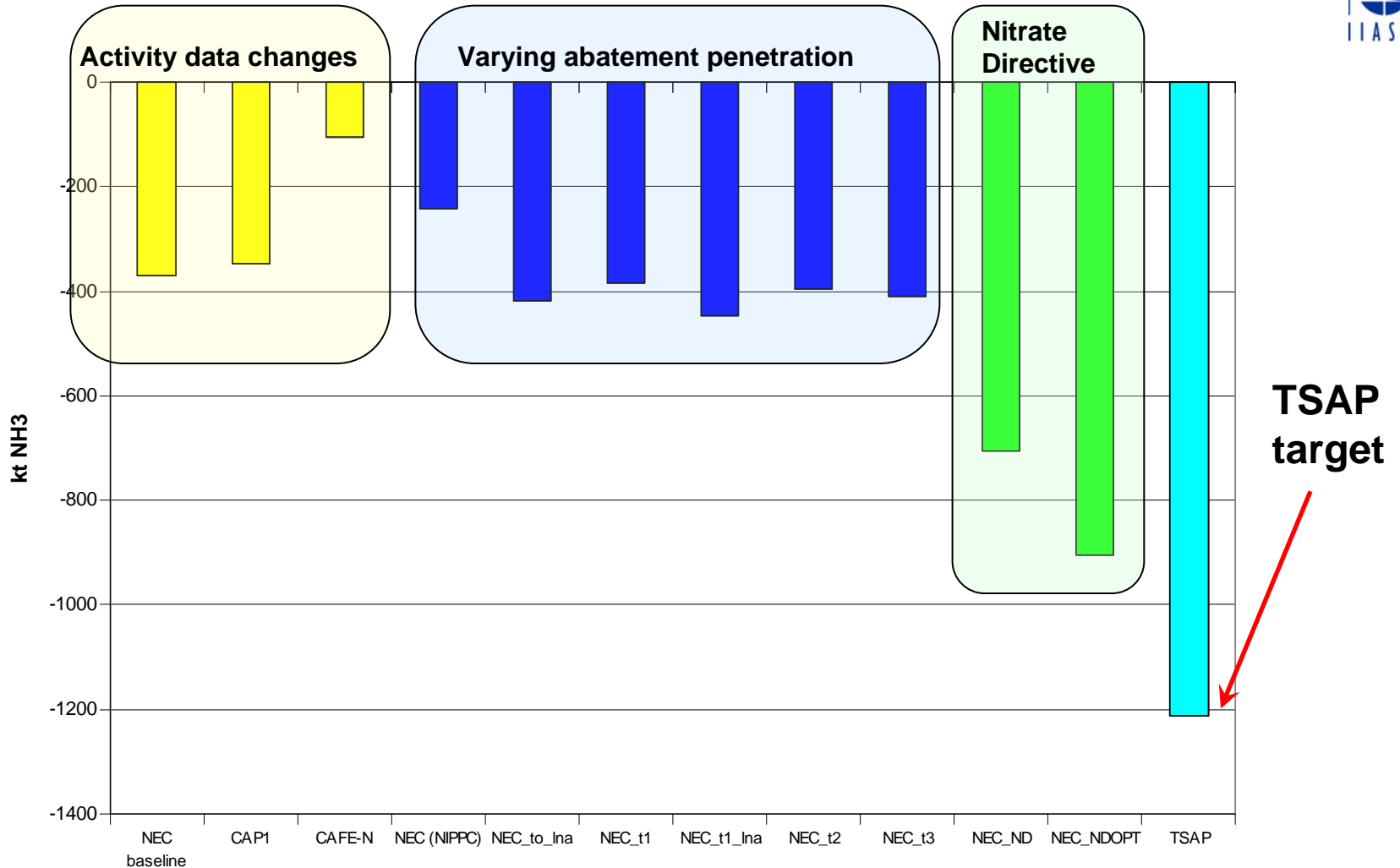


- A lot of open questions....
  - Interpretation of IPPC Directive
  - Implementation of Nitrate Directive and assumed impacts
  - Is animal welfare and cage directive considered in projections?
  - To what extent the agricultural and energy projections are consistent with respect to biofuel projections?
  - Very little information on national cost data
- Some of these issues have been or are going to be looked at ... soon

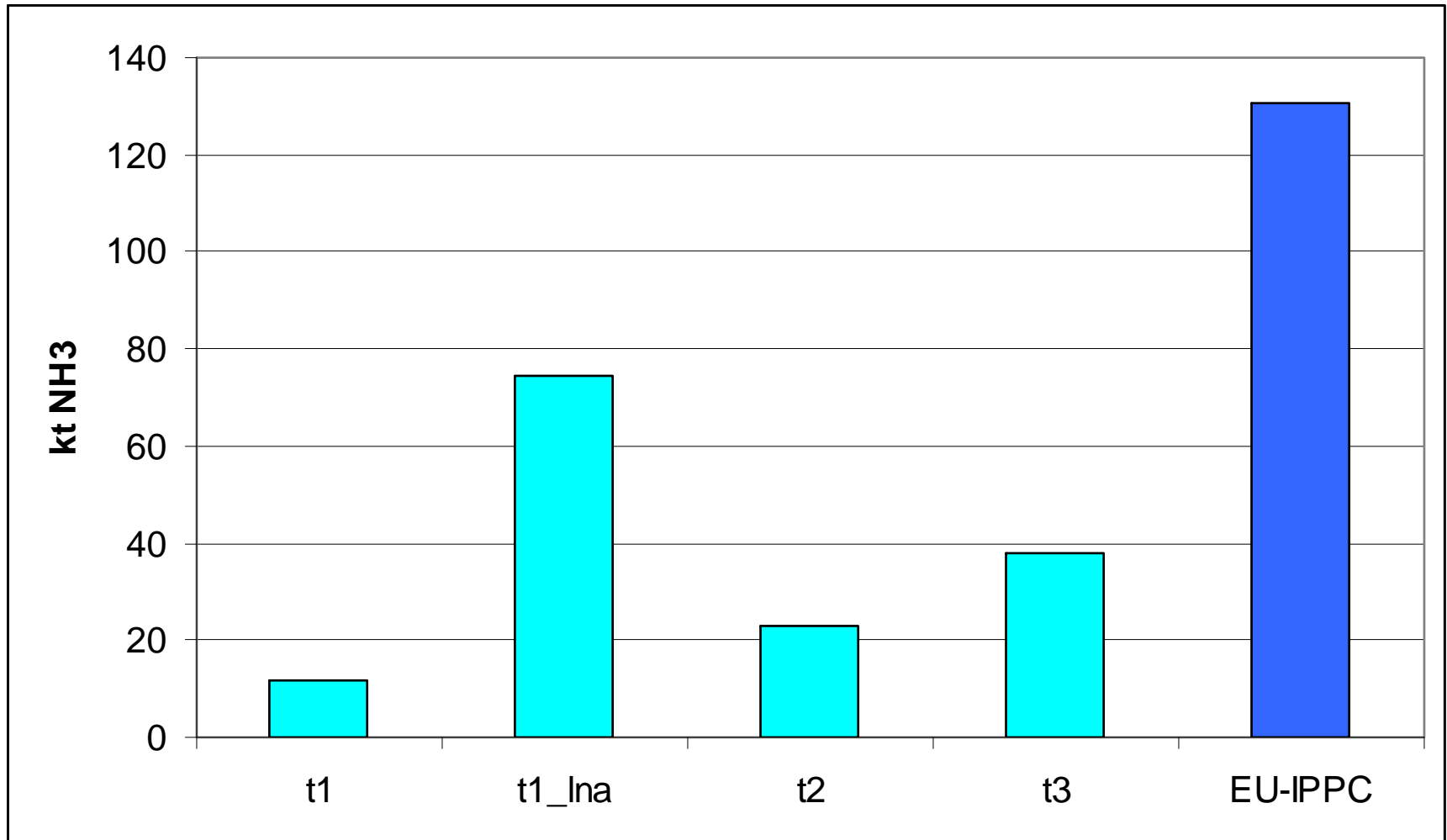


# Reductions of NH<sub>3</sub> in various baselines

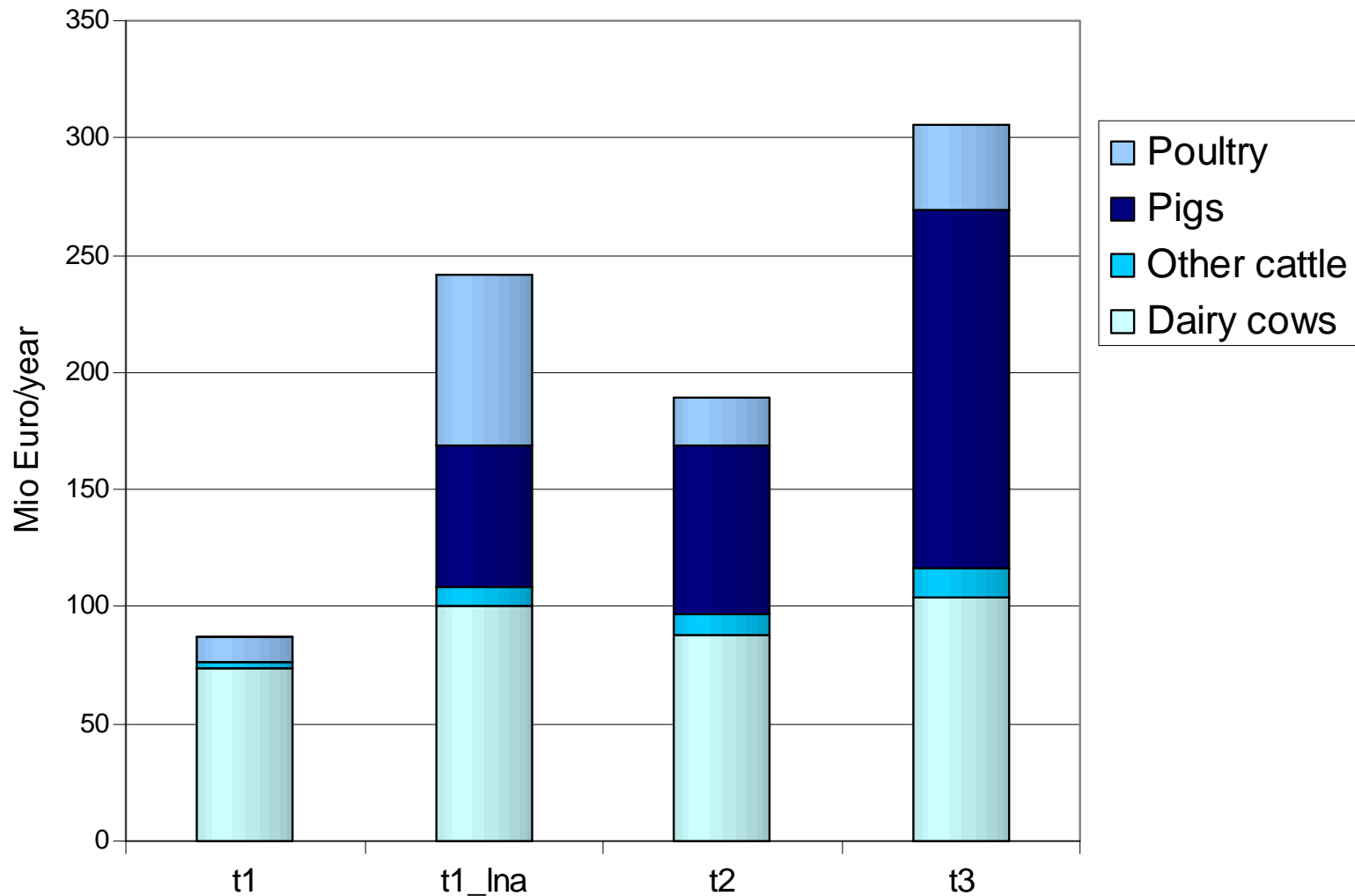
Changes relative to the EU-25 emissions in 2000 (Klimont et al., 2007)



# Comparison of achieved NH<sub>3</sub> reduction in different scenarios (varying IPPC thresholds in EU25) (Klimont et al., 2007)

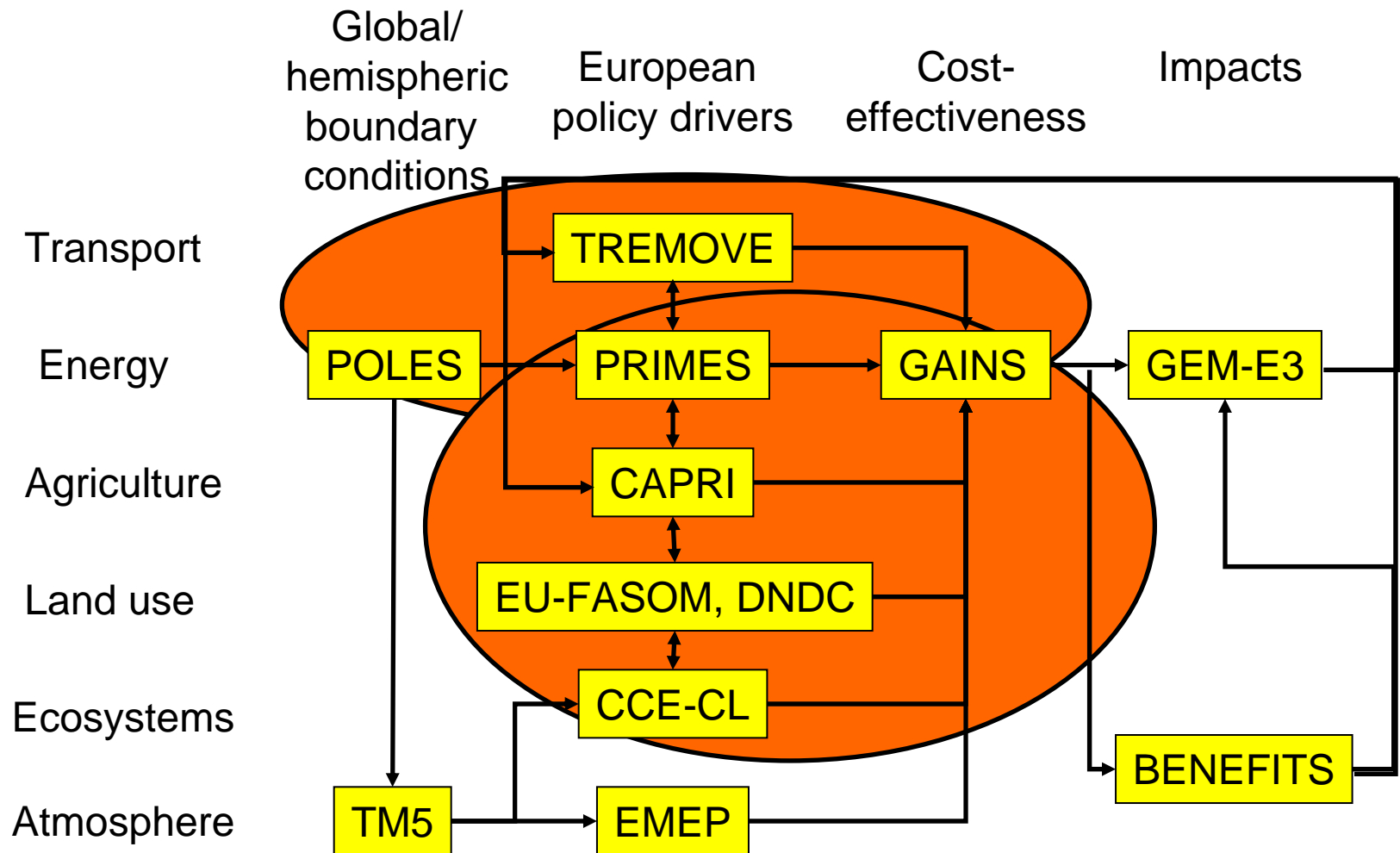


# Change in control costs for the IPPC extension scenarios to the NEC (v3) baseline for the EU25 (Klimont et al., 2007)



# The EC4MACS model system

(European Consortium for Modelling of Air Pollution and Climate Strategies)



# Policy questions within the agricultural component

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- Agric. activity =  $f$  (energy, carbon price, ...)
- GHG emissions from soils
- Impacts of N-leaching constraints
- Potential and costs of carbon sinks  
(management change, not land use change)
- Consistency of EU legislation
- Site-specific ("Natura 2000") legislation
- ...

# Interaction with national modelling teams, e.g., working under NIAM

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- Information that could be offered:
  - GAINS is accessible available on the Internet, all data can be freely downloaded
  - National versions of GAINS possible
- Most useful information from national teams:
  - Implementation of current emission control legislation
  - Energy projections coherent with national climate policy
- Under EC4MACS, bilateral consultations foreseen for 2010.

# Different approaches for national GAINS implementations

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## The “Italian” way:

- Provinces as separate emission source regions
- Province-to-grid transfer matrices
- Software hosted locally, only limited update

## The “Dutch” way:

- Entire country as one source region (as in GAINS-Europe)
- Sector-to-grid transfer matrices
- Software hosted at IIASA server (but with restricted access), regularly updated
- Fully integrated into GAINS-Europe