



Italian Agency for New Technologies,
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Development

The national perspective on air pollution in Italy

Presented by

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Presentation outline

- 1) Introduction
- 2) The Integrated Assessment Modelling Project MINNI
- 3) Successful examples of techno-scientific support to the policy makers, at national/international level
- 4) Conclusions

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Introduction

This presentation is aimed at illustrating how the creation of a Modeling Project at the National Agency ENEA has been successful in providing techno-scientific support to the policy makers in assessing air quality policies, at local/national level. Moreover, the Modeling Project allows to highlight and deeply analyze the critical aspects of air pollution in Italy, to provide elements, useful in the international negotiations (e.g. Gothenburg Protocol, EU Directives).

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The Integrated Assessment Modelling Project MINNI

In 2002, with the financial support provided by the Italian Ministry of the Environment, ENEA and the International Institute for Applied Systems Analysis (IIASA), Laxenburg (Austria) started a Joint research Project to develop the Integrated Assessment Modeling system, called RAINS_Italy, now evolved in GAINS_Italy. Within the Agency the Atmospheric Modeling System (AMS), a sophisticated pollution dispersion and atmospheric chemistry model, was developed. Both the models are part of the new established MINNI Project.

The work has been carried out in cooperation with ARIANET – Milan, (IT)

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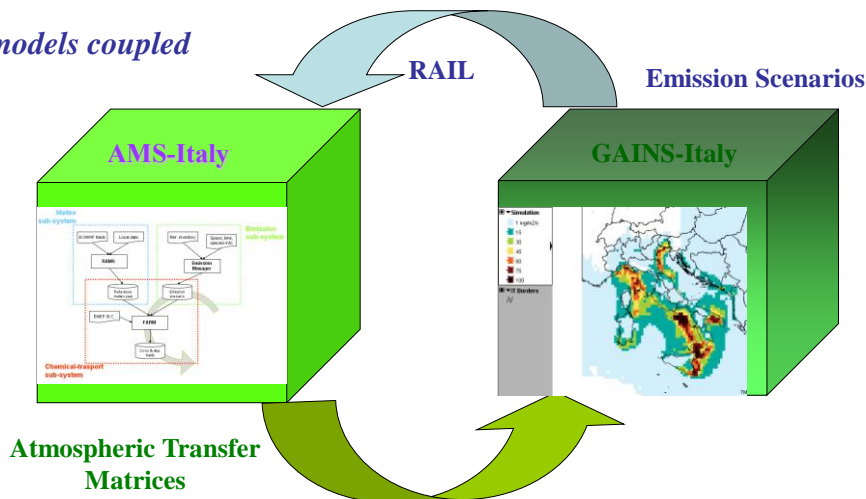
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The MINNI Modelling System AMS/GAINS_Italy

2 models coupled



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Structure of GAINS_Italy

Same structure and functions, as in
GAINS_Europe, are applied to
the Area Sources:

20 Administrative Regions

4 Metropolitan Areas

1 Sea Traffic Area

1 National Area



Scenarios can be calculated,
independently, for each Area Source

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Advantages of National GAINS

Support the policy makers on scientific based approach at national/local scale

1. **Reproduce the IIASA Scenarios**
2. **Develop alternative scenarios**
3. **Higher quality on national data/expertise**
4. **Introduce national meteorology**
5. **Higher spatial resolution (20x20 km cell)**
6. **Highlight national peculiarities**
7. **Discuss scenarios, with the EU Commission, on the basis of the same methodology**



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Example of application to policy definition at National level

The GAINS_Italy Model and the Atmospheric Modelling System have been successfully used to support the policy makers at Regional Administrative level, to assess the measures included in the Air Quality Plans, as defined by the local authorities.

Region by region, the list of measures have been discussed by the ENEA experts and the local experts, and evaluated by the GAINS_Italy model, in terms of emission reduction and related effect on concentrations. To facilitate this process the GAINS_Italy model has been made available to the regional experts, by remote connection online.

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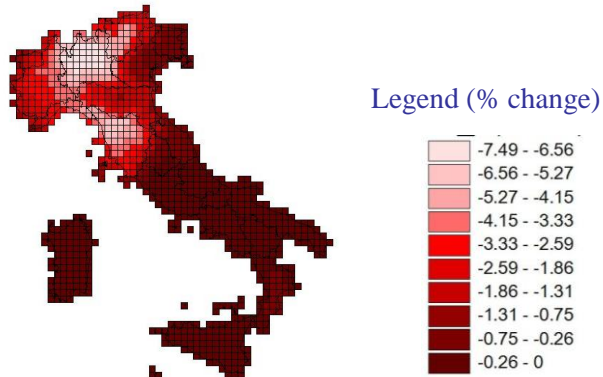
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Examples of applications to policy definition at National level

Change in PM10 concentrations applying the Air Quality Regional Plans, compared to the concentration values in the reference scenario (CLE), at 2010



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Example of application at International level (Gothenburg Protocol)

The GAINS_Italy Model has been applied to identify:

- a) the criticalities in the Italian national emission scenarios (2020 projected emissions).
- b) Evaluate the margin of feasible reduction in the critical sector(s)

Therefore, provide the national negotiators with elements useful to establish the margins of negotiation.

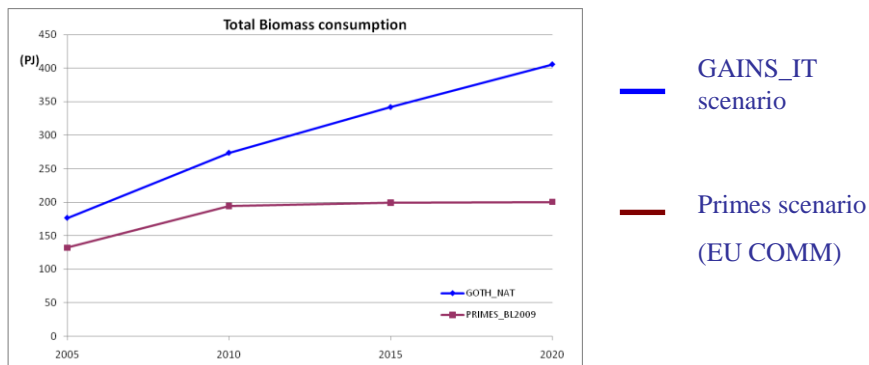
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Example of application at International level (Gothenburg Protocol)

From the analysis by GAINS_IT Model a critical issue, concerning the bio mass consumption in the residential sector, came out.



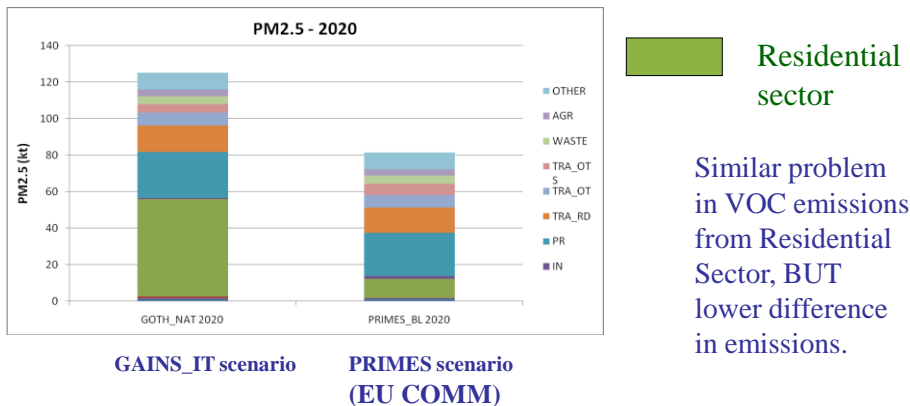
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Example of application at International level (Gothenburg Protocol)

Therefore, consequences on PM_{2,5} projected emissions, at 2020



Similar problem in VOC emissions from Residential Sector, BUT lower difference in emissions.

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Conclusions

The MINNI Project, with its models, has succeeded to provide the policy makers with scientific based elements for a more accurate assessment of the measures to be implemented at local (regional level). Also it provided a better understanding of the potential of reduction of measures adopted at national level, allowing an assessment of the critical issues, for the purposes of the international negotiations.

Thank you for your attention !

большое спасибо !

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