Italian National Agency for New Technologies,
Energy and Sustainable Economic Development

FAIRMODE pilot
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Source apportionment and planning activities

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Air quality plans preparation

Which are the air quality challenges in your domain? NO2, PM2.5 …

NO_2 (annual average at traffic stations), PM10 (daily average), PM2.5 (annual average), O_3 (daily maximum)

How do you identify the main sources of pollution in/to your domain?

Both in terms of activity sectors and in terms of geographical sources (Regions, NUTS 2), using the brute force method (dedicated simulations). We plan to apply the tagged species approach in the next 2 years.

We have a customized GAINS version with simplified S-R relationships (20 km resolution, meteo 2003, 2005, 2007 - upgrade to 10 km scheduled).

In local studies we apply PMF (online and offline) on measured PM10, PM2.5,

Air quality plans preparation

Which tool/approach do you use to identify sources? Are you aware of differences between “source apportionment” and “planning” approaches?

See previous answer. We are aware of the difference and we are working to have separate tools for SA and planning.

Do you perform any kind of “validation” of your results?

Only a qualitative comparison between input emission variations and output concentration variations, focusing on primary contributions.
PMF: yes, with external parameters (e.g. gas, meteo, other components)

Future projections and measures

How do you project in the future the current concentrations? Do you perform ‘business as usual’ scenarios for the future? Using which tools?

We build emission scenarios in GAINS-Italy, starting from official national activity scenarios, and run the AMS-MINNI CTM. We usually have ‘business as usual’ scenarios as reference for evaluations.

Future projections and measures

How do you select additional measures to be applied? How do you evaluate impacts and costs of additional measures?

Depending on the plan, we receive official evaluations of additional measures (from the National Environmental Agency) in terms of modified activity rates, or we carry out in-house design of additional measures.

We can evaluate health impacts either with GAINS-Italy or by applying WHO functions to model outputs.
We can evaluate costs of measures by a GAINS-based optimization tool.

Uncertainty and governance

Do you evaluate uncertainties of your results? How?

Not yet.

Do you coordinate the air quality plan with other policies? i.e. National air pollution control programmes (NEC directive)? Covenant Of Mayors? Mobility plans?

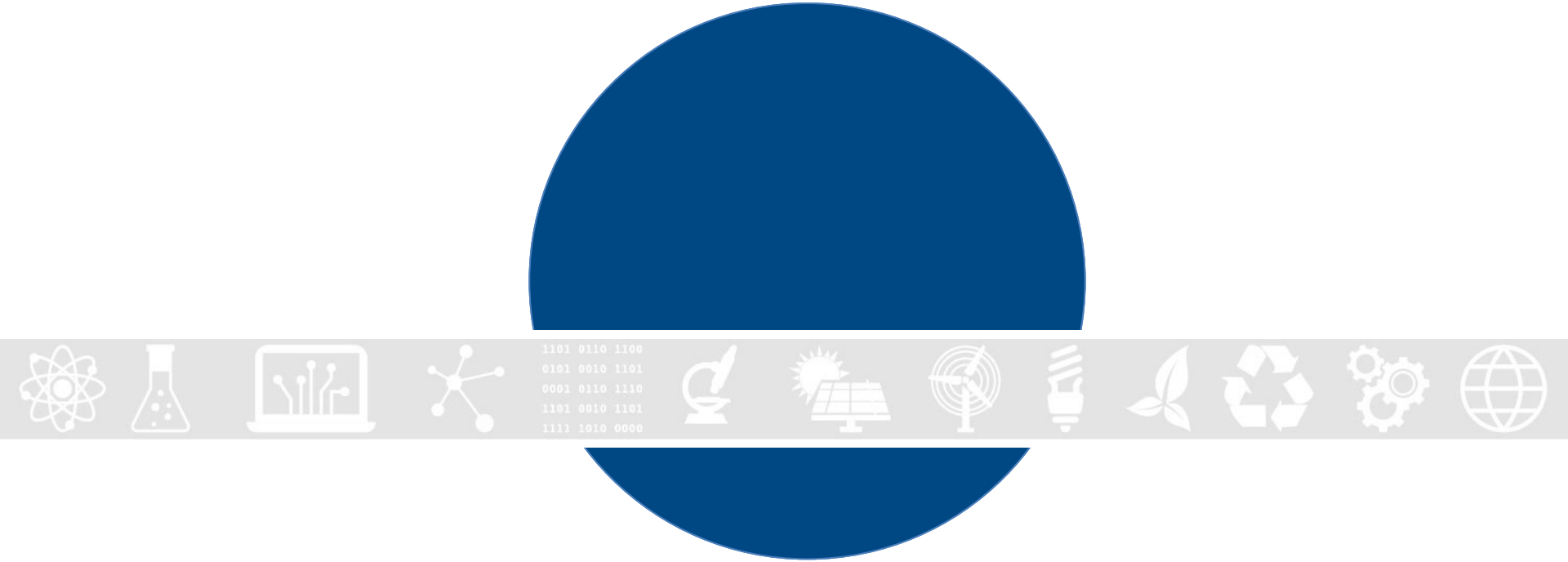
We use energy scenarios which are in principle shared between different national plans, i.e. National Air Pollution Control Programme for NEC Directive and National Energy and Climate Programme.
Local air quality plans share the same national energy/activity scenarios, but not the same abatement technologies and enforcement areas.

Uncertainty and governance

Are you aware / are you using the source apportionment (SA) and planning FAIRMODE tools/resources?

- DeltaSA tool
- SPECIEUROPE database
- Dynamic indicators in the delta tool
- SHERPA

We are aware of the tools.
We use the SPECIEUROPE database when applying the PMF.
We have tried the dynamic evaluation in the Delta tool, useful for supporting SA.
We do not use SHERPA because we have an alternative approach for planning, based on GAINS and national emission scenarios.
We never tried DeltaSA.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