

## Energy and Environmental Observatory of Liguria Region [IT]

### Key Achievements

- efficient data management
- integration of the information coming from different modular systems
- complete integration of the air emission inventory within the “environment and energy governance system”
- next step: direct link with Covenant of Mayors initiative (Baseline Emissions Inventory and Monitoring Emissions Inventory)

### Context & Rationale

The Energy and Environmental Observatory of Liguria Region has several objectives:

- Monitoring GHG emissions
- Following up the Air Quality Plan
- Computing energy balances at different levels (regional, provincial and municipal)

### Description

The Energy and Environmental Observatory of Liguria Region was created in 1997 to prepare the inventory of polluting emissions. Today it's extended to numerous environmental data and indicators.

Monitoring covers energy consumptions and production, energetic and non-energetic GHG emissions and air quality.

The data and indicators coming from the Regional Observatory support the Regional policy on energy and climate change and they are also relevant to the evaluation of pressure on other environmental media (water and waste).

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The system can be used at different time and spatial scales (regional, provincial, municipal, grid) and allows the aggregation and disaggregation of data between different levels of analysis arranged by economic activity, time interval, territory unit and fuel (if applicable) related to 11 groups of emissions sources (according to SNAP classification).

The geographical unit used is 1 square km. Input data sources include:

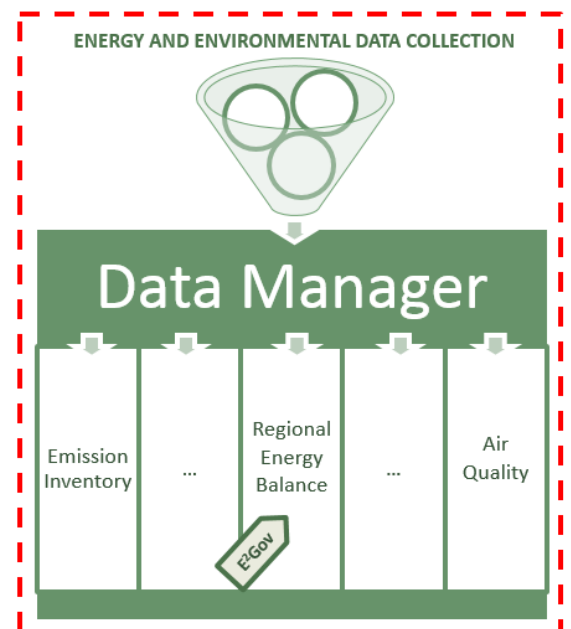
- Energy units related to:
  - Punctual facilities: plants, fuel depots, noise detection units, water treatment plants, antennas, wind turbines...
  - Areal facilities spatially confined: transport infrastructure like ports, airports, railway areas, storage areas like landfills, tank parks, natural areas like parks, wetlands...
  - Linear facilities: transport infrastructures like highways, railways, power lines
- Agriculture
- Non-energetic productive processes
- Fire emissions, both anthropic and natural
- Shadow emissions (electric)

The methodology used to compute the emissions is consistent with standards from CORINAIR, IPCC and National Energy Balance (ENEA). Specific models are available to assess emissions from road transport, airports (AIR AIR model), ports and shipping lines (AIR SHIPS model), vegetation (AIR FOREST model) and forest fires (AIR FIRE model).

The module, within the Regional Observatory, able to process energy data is “E2Gov”. It provides energy balances at regional, provincial and municipal level, in physical units and energy units. Also CO<sub>2</sub> emissions (territorial approach, IPCC emission factors) can be calculated. The formats for the energy balances correspond to:

- National Energy Balance format by Ministry of Economic Development
- Regional Energy Balances format by ENEA (National Agency for new technologies, energy and sustainable economic development).

#### Regional Energy and Environmental Observatory



Energy Balances represent energy flows: from the energy production, through the energy transformation to the final energy consumption by sector. This approach fits Eurostat methodology.

In the framework of DATA4ACTION Project, a targeted application of the Regional Observatory has been developed and, after a test phase that is ongoing, will be

available in 2016 for the Regional Municipalities involved in the Covenant of Mayors initiative. The aims of this new feature are to allow the municipalities to collect and manage energy data related to their own properties, to improve the data reliability of the observatory (through the integration of these data at municipal level in the regional system) and to automatically generate CoM BEIs and MEIs.

## Main Results

The Regional Observatory allows the preparation of the Emission Inventory (to monitor GHG emissions), the Air Quality Plan, the Report on the Status of Environment and the Energy and CO<sub>2</sub> balances.

The inventory refers to the following years: 1995, 1999, 2001, 2005, 2008 and 2011 and the Energy balances are available for 2005, 2008 and 2011.



*New Interface Observatories on Liguria Region website*

## Lessons Learned & Success Factor

The structure of the Regional Observatory (modular, with a horizontal data manager) allows efficiency in the data collection and processing. The Observatory is a tool for energetic and environmental planning and programming. Therefore the dialogue between the regional departments and the involvement of local administrators is essential.

Moreover, the inventory is a dynamic system which needs to be constantly updated, so IT, energy and environmental experts are requested to be part of the management staff.

## Implementing Structure & Partners - Governance

The main partners are the Liguria Region (owner of the Observatory), IRE SpA (formerly ARE Liguria), Liguria Digitale SpA, the Regional Agency for Environmental Protection of Liguria Region-ARPAL, the Metropolitan City of Genova (formerly Province of Genoa) and other Local Authorities, plus technical partners in charge for data providing and processing.

## Financing and Costs / Time Frame

- Budget: 774.685 € (initial Ministerial funding)
- Since 1997 – ongoing

## Contacts & Links

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### Observatory Website

[www.banchedati.ambienteinliguria.it](http://www.banchedati.ambienteinliguria.it)