

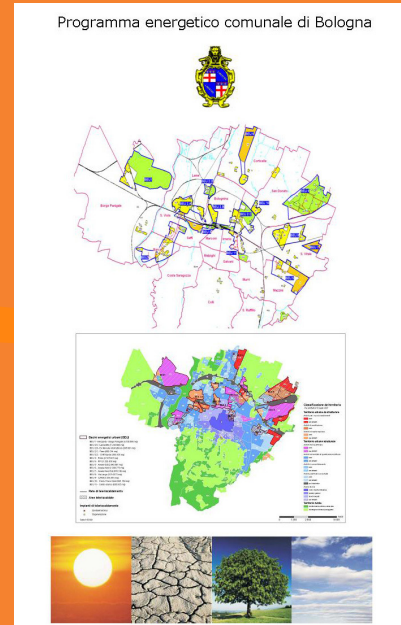
Integration of energy strategy within Urban Municipal planning tools – The Municipal Energy Programme of Bologna

KEYWORDS:

- Building culture
- Construction
- Closed loops
- Governance
- Planning Tools
- Ecology
- Energy efficiency
- Indicators
- Mobility
- Technology transfer

TARGET GROUP:

- Architects
- Builders
- Citizens
- Craftsmen
- Home Owners
- Planners
- Politicians
- Policy Makers



Results and outcomes (use cases):

The Municipal Energy Programme is an ambitious project for the achievement of Kyoto targets through a regulation of energy efficiency and RES exploitation for new urbanizations to be inserted in the new urban planning tools (such as Master Plan, Building Regulation, and Operative Plans). To achieve this goal a Geographic Information System (GIS) was implemented that allows to:

- esteem the energetic-environmental impacts of new urbanisation areas;
- program the intervention modalities to achieve foreseen reduction targets on the selected areas;
- monitor the actuation of the Urban Master Plan and the effectiveness of the applications of energy efficiency proposals and projects.

The developed methodology allows for the characterization of urban transformation areas foreseen by the Urban Master Plan by:

- Definition of three consumption and GHG emissions Scenarios with different level of implementation of energy saving measures and RES exploitation.
- Choice of the scenario necessary to

achieve the emission target.

- Development of Energetic Guidelines for new settlement standard.
- Development of a GIS tool for the urban transformation areas and definition of Urban Energetic Basin as the base for interventions combining energetic, urban and environmental information.
- Adaptation of the Energy Guidelines to each Urban Energetic Basin taking into account specific features and typologies of foreseen settlements for each areas.

Description:

In 2007 The Municipality of Bologna developed a Municipal Energy Programme (PEC) in parallel with the review process of the Urban Master Plan. The PEC was developed by the Municipality of Bologna with internal resources organised in an interdepartmental working group in collaboration with local expert consultant in energy matter "ESCo del Sole" Company.

The PEC has been elaborated in 2007 in parallel with the renewal process of the Municipal Master Plan. The PEC's goal was to achieve

the GHG reduction of 28% by 2012 (equal to 7% on 1990 basis as foreseen by the Kyoto protocol).

The tool was developed in order to quantify as precisely as possible the evolution of energy consumption and GHG emission according to the Master plan implementation.

www.lg-action.eu/fileadmin/template/projects/lg-action/files/it/case_studies/LG_Action_case_Bologna_EN.pdf

Relevance for inter-municipal planning (AlpBC):

In the energetic-environmental analysis of the new urban developments the tool allows to identify and study those areas on which is necessary to intervene because they show critical elements (or opportunity) on an energetic point of view.

- These areas are defined as the Urban Energy Basins (BEU): areas of the urban territory identified by a combined set of cognitive elements of nature energy, urban and environmental;
- The BEU perform the task of helping the urban planner and designers not to lose sight of the energy aspects of the urban fabric, coming to define criteria to be met to build new buildings in a given area, and to identify situations of high concentration of energy uses that could promote concrete actions (localized and synergistic) for the energy upgrading of the existing building stock;
- Successful mitigation policies also often depend on technical infrastructure, which transcends city borders e.g. power distribution and transmission infrastructure. Whereas an individual city might be able to think ways to improve energy efficiency in housing within existing structures, at the inter-municipal level it may be possible to consider urban planning strategies that will result in not only more efficient housing designs and standards, but also where houses are built and their relationship to the regional environment.

Relevance for policy goals (Alpine Space, Europe and the region):

To match emission targets local authorities have to intervene on the existing buildings, but the definition of a clear energy strategy for new buildings is preliminary.

The tool allows local authorities to:

- quantify as precisely as possible the evolution of energy consumption and GHG emissions according to the Master plan implementation, taking into account variables such as future regulations and

technologies related to buildings energy efficiency.

- monitor energy consumption and compare it to the foreseen scenarios of urban development.