

Knowledge Base

# BIOPOLE

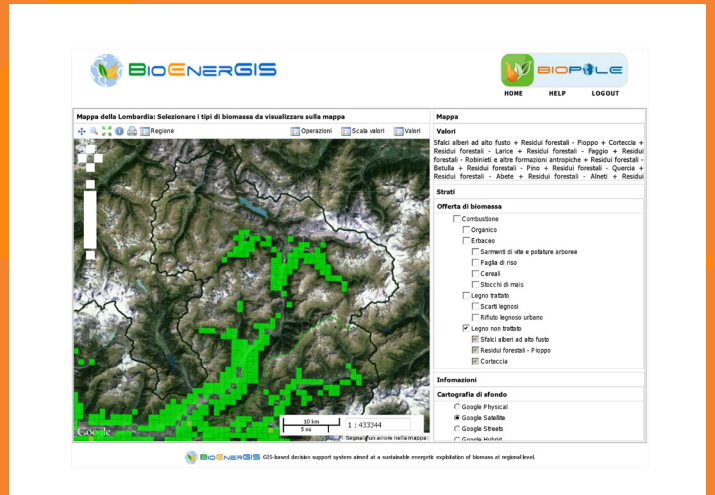
## BIOmass Plant Optimal Localization Estimator

### 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 IEE (Intelligent Energy Europe) Project BioEnerGIS developed the tool BIOPOLE, a GIS-based Decision Support System, accessible through the web, integrating the supply and demand-side analyses, to optimize - through an energy, environmental and socio-economic approach - the localization of biomass plants.

The tool is useful to assess, under submission of simple information, the capability of a specific area, to be vocated for a biomass plant installation dedicated to a heating district. The tool is very much linked to an efficient model of territorial management, where the biomass plant is planned to be a centre of a strategic cell (or set of near cells following sustainability criteria) combining supply and demand data, as well as lo-

cal legislation, so very related to a reasoned and combined planning of the territory that overleaps the simple administrative borders. The results is not only related to the availability of raw materials in each cell but also to the presence of inhabited areas in order not to increase impacts, taking into account the different needs for residential, industrial and services settlements, and considering 5 different typologies of plants (heating systems and anaerobic digesters) treating different kind of biomass.

The tool gives as a result the admissibility of each cell, identifying the plant typology and power and the sustainability criteria of plant (such as ratio demand/supply; average distance biomass resource / plant and involved population).

-  **Description:**
- The tool BIOPOLE has been developed within the IEE Project BioEnerGIS (2011).
  - The tool has been tested during the project life time and it's now freely available .
  - The tool isn't related to a specific regulation but means to support the decision makers in the planning of biomass plants.
  - The measure is a GIS tool evaluating the feasibility of a biomass plant installation in a specific area.

 **Relevance for inter-municipal planning (AlpBC):**

- The tool encourages the inter-municipal and the cross-sector cooperation since it's related to the installation of a plant working on a wider territory, beyond the administrative municipal border, combining supply and demand data.
- It combines spatial and energy planning, taking advantages of resources and concentrating a service to answer multiple needs avoiding to increase impacts on already infrastructured areas.
- The tool assesses the feasibility balancing needs and resources, so it takes into account the relation between environment and energy generation and addressing sustainability criteria.
- It's for sure related to sustainability since it means to assess feasibility of biomass plants in specific areas.
- It's for sure related to innovation, since the choice is between different technologies (combustion, digestion) and different biomass typologies.

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

The (GIS)-based Decision Support System BIOPOLE has been developed to find environmental and economic sustainability - locations for new biomass plants feeding district heating systems. out the most suitable - in terms of energy,