



## FACTOR20 Project

Forwarding demonstrative ACTions On a Regional and local scale to reach UE targets of the European Climate Action Plan "20-20 by 2020"



biomass

energy efficiency

clean energy

renewable energy

### PROJECT DESCRIPTION

The **2020 climate & energy package**, launched by the European Union (EU), identifies important targets of energy efficiency and reduction of climate-changing gas emissions, pursued with a view to energy and environmental sustainability both at global and local levels. In this context, the Factor20 project had as general purpose the **definition of a set of tools to support the planning of regional and national policies for the reduction of GHG emissions and energy consumptions, as well as for the promotion of the use of renewable energy sources**. The project promoted concrete actions at local level, involving the territorial bodies of three regions: Lombardy, Basilicata and Sicily (the so-called F20 regions). Specifically, [local authorities that joined the project](#) were: Provinces of Potenza and Matera in Basilicata; Province of Bergamo and Municipality of Lodi in Lombardy; Province of Palermo, and Municipalities of Castelbuono and Comiso in Sicily. In addition, there was also the participation of the Municipality of Benevento as observer.



### OBJECTIVES

Main objectives of the project were to:

- **harmonize the energy balances** of the F20 Regions by defining a single methodology for analyzing regional energy data and environmental impacts in terms of GHG emissions;
- **define a list of priority actions** to be implemented in the territories of the involved local bodies in order to achieve the regional sustainability objectives;
- **apply burden sharing** principle in the definition of the GHG emission reduction quotas for sectors not subject to the Emission Trading and for the other 20-20-20 Package objectives (ie renewable sources and energy saving), by adopting an integrated approach that merges regional and local planning levels;
- **select local territorial areas** (Municipalities, Provinces, Mountain Communities) in the F20 Regions **to be supported in the preparation of Local Action Plans**;
- **promote the use of the SIRENA20 tool** in the planning, assessment and accounting of regional and local energy policies;
- **stress, among local and regional stakeholders, the importance of the CO2 factor** and other strategic and priority indicators in the definition of policies and actions for energy sustainability.

### PROJECT PHASES

FACTOR20 was structured in four macro [action groups](#):



#### Preparatory actions

- Data and Baseline
- Objectives
- Tools and methods

#### Implementation and demonstration actions

- Factor Model20 for Energy and Environmental Planning on a regional scale
- Implementation of SIRENA Factor20
- Implementation of Local Factor20 Action Plans

#### Communication and dissemination

- Communication and dissemination plan

#### Project management

- General organisation
- Monitoring
- Internal training

## PROJECT RESULTS

The Factor20 project has supported a number of local authorities in evaluating actions to reduce energy consumption, encouraging the use of renewable sources and promoting efficient technologies in order to foster sustainable development at local level. Many of these bodies have undertaken the path outlined by the Covenant of Mayors, starting a local planning aimed at achieving a 20% reduction in the CO<sub>2</sub> emissions. The activities carried out in the local institutions that have joined the project have led to the **development of tools and case studies** that constitute an important support for the Municipalities that intend to contribute to the achievement of the regional objectives in energy sustainability.

The main activities carried out with local authorities were: construction of the baseline (using SIRENA20), **identification of actions consistent with the regional planning** (to be included in the Sustainable Energy Action Plans - SEAPs); study of [priority actions](#) in terms of positive impact (energy use and environment), potential for replicability in the territory, and involvement, information and training of stakeholders.

Achieved results and produced documents were as follows:

- **Definition of a [common methodology](#) for harmonizing the energy balances of the F20 Regions**, which analyzes regional energy data and highlights infrastructures, consumption and energy production, and at the same time considers the related environmental impacts in terms of GHG emissions. **Energy balance** is the tool that allows obtaining a synthetic image of the energy sector of a geographical area, indicating (for a given period) the quantity and type of energy consumed and how it was produced, obtained or transformed. The outcome of the energy balance is a matrix which makes explicit the energy flows. Factor20 has provided the F20 Regions with a generalized method for estimating consumption at municipal level, through the use of detailed information on the distribution and use of energy sources in the different geographical areas of the region. Furthermore, the structure of a [database for regional energy balances](#) has been defined and a [catalog of existing data sources](#), detected at national level and in the 3 project regions, has been prepared. This allowed the updating of the energy balances of Lombardy, Sicily and Basilicata.
- **Definition of the [GHG emission reduction targets in the F20 regions](#)** for different aspects (share of renewable energy sources, non-ETS emissions, energy efficiency, reduction of final energy uses). For renewable energy sources the objectives have been defined on the basis of the *Burden Sharing* principle (Ministerial Decree 15/03/2012) and specific regional Plans.
- **Distribution of the objectives at local level in the F20 regions** on the basis of the CO<sub>2</sub> emission reduction objectives of the Covenant of Mayors (20%). The F20 Regions have elaborated a method of assignment of the objectives in function of the territories' real potentials.
- Development of the **Sirena Factor20 system** (on the basis of the [SIRENA](#) system - Regional Information System on Energy and Environment of Lombardy, whose graphics and contents were updated). The System is a [tool](#) for organizing and analyzing energy data, in addition, it **allows the simulation of future scenarios in order to support the regions in choosing the most efficient measures to achieve the objectives by 2020**. In short, provides all the information necessary to reconstruct regional energy dynamics. The use of the System is facilitated by the [Users' manual](#).

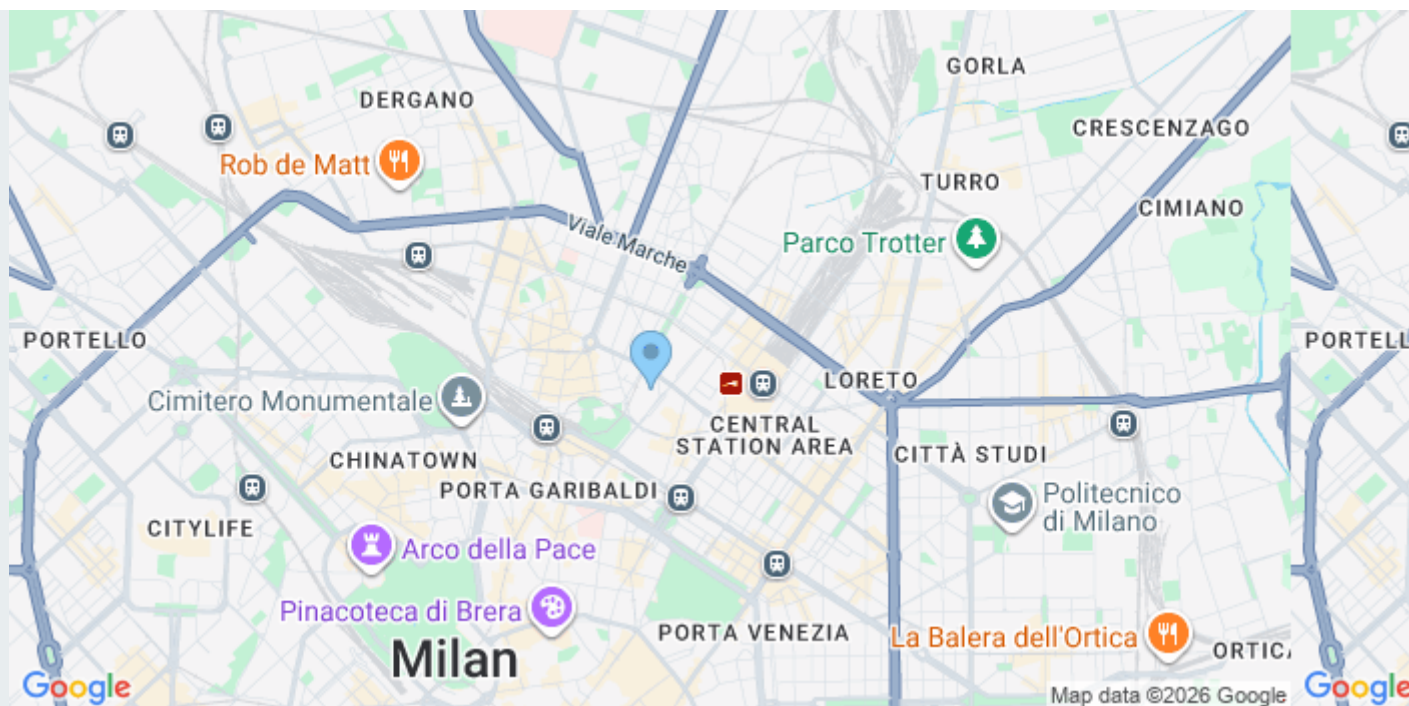


- Report on **Ex-ante evaluation of local action plans in the regions**. The document describes the methodology for the ex-ante evaluation of the local plans and actions contained therein, in order to promote an integrated process for regional and local administrations to plan efficient (as for cost-benefit ratio) and feasible actions which are replicable on the territory.
- **Development of reports on experimental activities in F20 Regions:** Report on case studies in **Lombardy: Energy upgrading of condominium buildings - Municipality of Lodi and Small biomass-powered district heating networks - Province of Bergamo**; Report on the activities in **Basilicata: Fulfillment of energy needs of production areas through the use of renewable sources available on site - Feasibility check, Reduction of energy consumption and CO2 emissions of public buildings for tertiary sector activities and Feasibility of a production district dedicated to the green economy in the province of Potenza**; Report on the activities in **Sicily: Evaluation of interventions aimed at improving the energy-environmental quality of buildings, also through the promotion and implementation of the provisions contained in the Urban Construction Regulations**.
- **Report on local actions promoted in each region**. Starting from the short-list of actions identified as priorities to be included in the Local Action Plans, the document describes the key actions implemented within the project.
- Document on the **Assessment of the 20-20-20 scenarios in the F20 regions** that describes a common and integrated approach to planning energy sustainability policies.
- **Guidelines for the ex-post evaluation of Local Action Plans in the Factor20 regions**. The document is a support tool for local authorities that have undertaken the planning and implementation of the plans, in particular for the last phase of monitoring the implementation of the actions.
- Greater awareness by local authorities of the importance of committing to reducing CO2 emissions and of the availability of tools for achieving the set out objectives.
- The project has made a significant **contribution to the definition of the National Energy Efficiency Plan** that Italy (like every Member State) must draw up in accordance with the European Directive 27/2012 on energy efficiency.

Furthermore, as a result of the joint activities in Factor20 (actions on public buildings and small district heating networks with high energy potential, using mainly renewable sources, in particular biomass) and within the framework of the Covenant of Mayors initiative, the **Province of Bergamo has launched the FABER project** (financed within the ELENA Program - *European Local Energy Assistance*) to improve energy efficiency in about 120 municipalities and 400 buildings, and implement the Regional Innovation Strategy measures over the next 3-5 years. In the same time the **Region of Sicily has assigned a specific budget to the support of the municipalities in defining SEAPs** (Sustainable Energy Action Plans), taking into account the best practices experimented within Factor20 and the data obtained from the Sirena20 System.

In the long term, the results of the project will be able to contribute to the implementation of the European directives on renewable energy (2009/28/EC), energy performance of buildings (2010/31/EU) and energy efficiency (2012/27/EU).

An additional result is given by the **decree issued in March 2012** by the Ministry of Economic Development (in agreement with the Ministry of Environment) which outlines the regional objectives in the field of renewable sources and defines the actions in case the autonomous regions/ provinces fail to achieve the objectives (so-called *Burden Sharing*). The Factor20 experience was used to monitor the achievement of the results. The F20 Regions subsequently collaborated with other administrations in order to refine the methodologies to quantify and monitor the evolution of renewable energy technologies (solar thermal and photovoltaic, biomass, biogas, geothermal energy, etc.) at regional level. Furthermore, the F20 regions were involved in the Monitoring Observatory foreseen by the Ministerial Decree. The Region of Sicily has set up a working committee on the distribution of charges in order to monitor, verify and implement shared procedures for achieving the objectives of renewable energy production.



**Acronym**  
FACTOR20

**Number of reference**  
LIFE08 ENV/IT/000430

**Reference Programme**  
[LIFE](#)

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**EU contribution**  
1.086.635

**Call Year**  
2008

**Start Year**  
2010

**End Year**  
2013

**Beneficiary headquarters**

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**Region**  
Lombardia

**Description**

Lombardia, Basilicata, Sicilia