

Bioenergy Factory

Bioenergy Factory is a knowledge center placed in Cremona, in Northern Italy (Lombardy Region).

The project began as a public private partnership initiative, led by local government (Provincia di Cremona) and co-funded by Cariplo Foundation.

Other founding partners of Bioenergy Factory are: Politecnico di Milano (scientific and operative member), Chamber of Commerce of Cremona, ERSAF (Lombardy Regional Agency for Research in Agriculture) and Cremona Municipality.

The activity is mainly divided into three interconnected areas. All of them are focused on promoting Bioenergy development, achieving efficiency and enhancing potential energy produced by biomass, without compromising local vocations and environmental equilibrium.

RESEARCH activity aims to increase anaerobic biodegradability and improve treatability of organic matrices, to get better energy performance from plants and develop new techniques in order to remove ammonia from digestate.

SERVICE activity enables stake-holders (plant owners, plant producers, certification authorities, etc) to solve issues like: process optimization, assessment and audit duties, start-up and management through dedicated process models, routine analyses, feasibility studies, machine testing and inspection, surveys and censuses, etc.

The strategic role of the **OBSERVATORY** consists in acknowledging specific local needs, thanks to dedicated Group of experts and thematic working tables. Ongoing issues are evaluating environmental, economic e social impacts, monitoring of technology progress and of best practices in the industry, proposals to address technological, legislative and administrative decision. The Observatory works as well on dissemination, information and **TRAINING** for the results of the project.

Service information

Further information about Bioenergy Factory services and their customization may be asked to this email address fabbrica@cremona.polimi.it or calling the telephone number +39.0372.567767.

Communication of news and events are spread through Factory website www.fabbricabioenergia.it, a periodic newsletter and international mass media.



Operational Headquarter

Bioenergy Factory
c/o Politecnico di Milano
Technical University of Milan
Cremona Campus

Via Sesto, 41 - 26100 Cremona

Tel: +39.0372.567767

Fax: +39.0372.567701

Mail: fabbrica@cremona.polimi.it

Web: www.fabbricabioenergia.it



POLITECNICO DI MILANO



POLO TERRITORIALE
DI CREMONA



Camera di Commercio
Cremona



Cremona
COMUNE
DI CREMONA



ERSAF
ENTE REGIONALE PER I SERVIZI
ALL'AGRICOLTURA E ALLE FORESTE



Regione Lombardia

Iniziativa cofinanziata da



fondazione
cariplo



Bioenergy Factory

Knowledge center for Bioenergy
and renewable sources improvement

SERVICES

TRAINING

RESEARCH

Service Activities

Bioenergy Factory is able to satisfy individual needs, achieving different types of service customization.

High level competences, not only in energy and environment, have been developed in university context and got hold of research knowledge of Politecnico di Milano, Technical University of Milan.

Main services are:

- Feasibility studies (technical-economic-management);
- Supporting during testing and authorization;
- Supporting the plant start-up until ordinary management;
- Process optimization and efficiency maximization;
- Eligibility and digestibility of matrices and by-products;
- Characterization and treatability of digested;
- Development of process control models;
- Market research and technology scouting;
- Verification of energy yields;
- Technical appraisal.

Upon request, companies can ask for an annual package of **SUPPORT FOR PLANT CONDUCTION**. In this case, a full and constant assistance is provided, besides plant monitoring and periodic samples collection. This package refers to a customizable and renewable contract.

Again, it may have **PRETREATMENT TESTS**, with technical and economic assessments, aimed to understand the actual yield of pretreatment and find the best solution that avoid the risk of going below the equal energy principle.

Research Studies

Scientific research leads the activity of the whole knowledge center. As a matter of fact, Bioenergy Factory can be considered as a research driven cluster in agro-energetic field, that incorporate an advanced research area in the following issues:

- Energy development and recovery of new biomasses;
- Innovative plant layouts;
- Pretreatments in order to increase biodegradability;
- Sustainable treatments for digestate;
- Biogas upgrading;
- Process modelling and remote control.

Primary objective of Bioenergy Factory research is to **improve energy performances of existing plants**, working on technological and managerial implementations.

Other researches focus on **nitrogen removal from digested material**, using innovative techniques in order to comply with UE directives in the matter of pollution from nitrates and thus creating a virtuous circle of environmental respect.

Other research activities are activated on the basis of emerging needs or specific requirements.

Laboratory For research and service activities

The laboratory is fully instrumented to meet analytical needs that may arise concerning Bioenergy. Furthermore, resulting outcomes, achieved through research activities, allow the laboratory to become a reference point for local sector and a real tool for knowledge and technology transfer.

Among the measures that the laboratory can perform, in collaboration with the LISA Laboratory (DIIAR Department of Politecnico di Milano), there are:

- Potential Biochemical Methane Production (BMP) of liquids, pastes and solids;
- Undigested Organic Substance;
- Residual Biogas Production Rate;
- Degradation rates of specific stage (hydrolysis, acidogenesis, methanogenesis);
- Composition of biogas;
- Undigested fibers;
- Particle size analysis of matrices / by-products.

A full list of standard analysis can be required at the Factory office.

Customized analyzes can be provided.

Training Courses

Within the **Observatory**, Bioenergy Factory offers a wide range of training services, specifically designed to meet demands from various targets.

You can find:

- An annual training program, with courses throughout the year.
- Courses on demand, organized and built ad hoc as required.

