

## EnergyLab Description

EnergyLab is a private technology centre specialised in energy efficiency and sustainability. It is a non-profit private entity set up on 2008 as an initiative of the industry and the Regional Government.

EnergyLab identifies, develops and promotes technologies, processes, products and consumption behaviours able to contribute to the improvement of the energy efficiency and sustainability through its applications in industry, domestic products, mobility and buildings.



In 2014, EnergyLab was recognised as National Technological Centre by the Ministry of Economy and Competitiveness and it is member of ATIGA (Galician Technological Alliance) together with other five Galician centres.

EnergyLab's staff is highly qualified, with large experience on international projects development, and a 38% rate of PhDs.



## Patronage

### Private Companies

Naturgy

COPASA

PHILIPS

FINSA

GRUPO  
INVERTARESA

INDITEX

### Public Administration and Government



XUNTA DE GALICIA  
CONSELLERÍA DE ECONOMÍA,  
EMPREGO E INDUSTRIA

inega Instituto Enerxético  
de Galicia

### Universities



UNIVERSIDADE DA CORUÑA

USC  
UNIVERSIDADE  
DE SANTIAGO  
DE COMPOSTELA

Universidade de Vigo

## Working Fields

EnergyLab performs its technological development in four main areas:

- **Bioenergy:** renewable sources of energy such as biogas, biomass, geothermal, ocean energy, etc for secure, efficient and sustainable energy.
- **Sustainable Mobility:** new systems for sustainable mobility mainly electric and gas mobility.
- **Industry:** energy efficiency optimisation in industry and transport.
- **Sustainable Buildings:** efficient technologies for heating, cooling and lighting in buildings.



## R&D Capabilities

### Bioenergy

- Biogas production optimisation: new digesters' designs, co-digestion, etc.
- Characterization of organic wastes and biodegradability assessments.
- CFD modelling related to biogas and biomass gasification and combustion.
- Energy from the sea: tidal, wave prototypes.
- Environmental impact analysis with Life Cycle Assessment (LCA).

### Sustainable Mobility

#### Natural gas propulsion systems:

- Natural gas and biogas use in boats and land vehicles.
- Effects of the use of engine transformation instead of dedicated engines.
- Simulation alternative engines with mixed gas-liquid fuels .

#### Electric vehicles:

- Use of electric propulsion systems in boats and land vehicles.
- Characterisation of components of electric propulsion systems, especially batteries.

### Industry

- Monitoring and data processing in industry for energy efficiency.
- New techniques of local interior positioning systems: LIDAR and GIS.
- Advanced systems in industrial processes with compressed air and adjustable speed drivers.

### Sustainable Buildings

- Heat pump technology development: for heating and cooling.
- Geothermal systems aligned with heat pump uses.

- Nearly zero energy buildings (nZEB) with renewable energies and energy storage .
- Monitoring and data processing in buildings for energy efficiency .

## R&D Projects

Since its creation, EnergyLab has carried out more than 90 R&D public and private projects with companies, universities and technology centres. Some examples are:

### Bioenergy

- Biomasa-AP (POCTEP Project): improvement of biomass research capacities.
- Digester 2.0: FORTISSIMO2 Project for the optimisation of anaerobic digestion process for biogas generation.
- Sustainable Mobility Joint Research Unit: technological development of the use of natural gas and biomethane in maritime and agrarian generation.
- Renewable Gas Joint Research Unit for increasing the understanding of biomethane production processes for wastewater treatment plants in the urban and food sectors.

### Mobility

- Hybrid NG/electric system in fishing ships.
- Movelco: vehicles in motion data analysis.
- Plug & charge: optimize of electric vehicles batteries charge.

### Industry

- LIFE ECORAEE: re-use process of WEE in accordance to EU law.
- POCTEP ESTRAEE: sustainable cross-border strategy for WEE management.
- Energy management systems for energy efficiency.

### Sustainable Buildings

- Domestic hot water applicability and introduction combined with heat pumps.
- LIFE OPERE - efficient management of energy networks.
- GeoAtlantic: Boosting local ecosystems for the use of geothermal energy in the communities (Atlantica Area Project).

