

## Visit at EnergyLab

On the 24<sup>th</sup> of July 2024, Jörgen Held, BEIC, visited the EnergyLab in Vigo, Spain. The EnergyLab is a National Innovation and Technology Center and has been recognized by CDTI as a Centre of Excellence. CDTI is a Business Public Entity under the Ministry of Science, Innovation and Universities that promotes **innovation and technological development of Spanish companies**

The R&D lines of EnergyLab include;

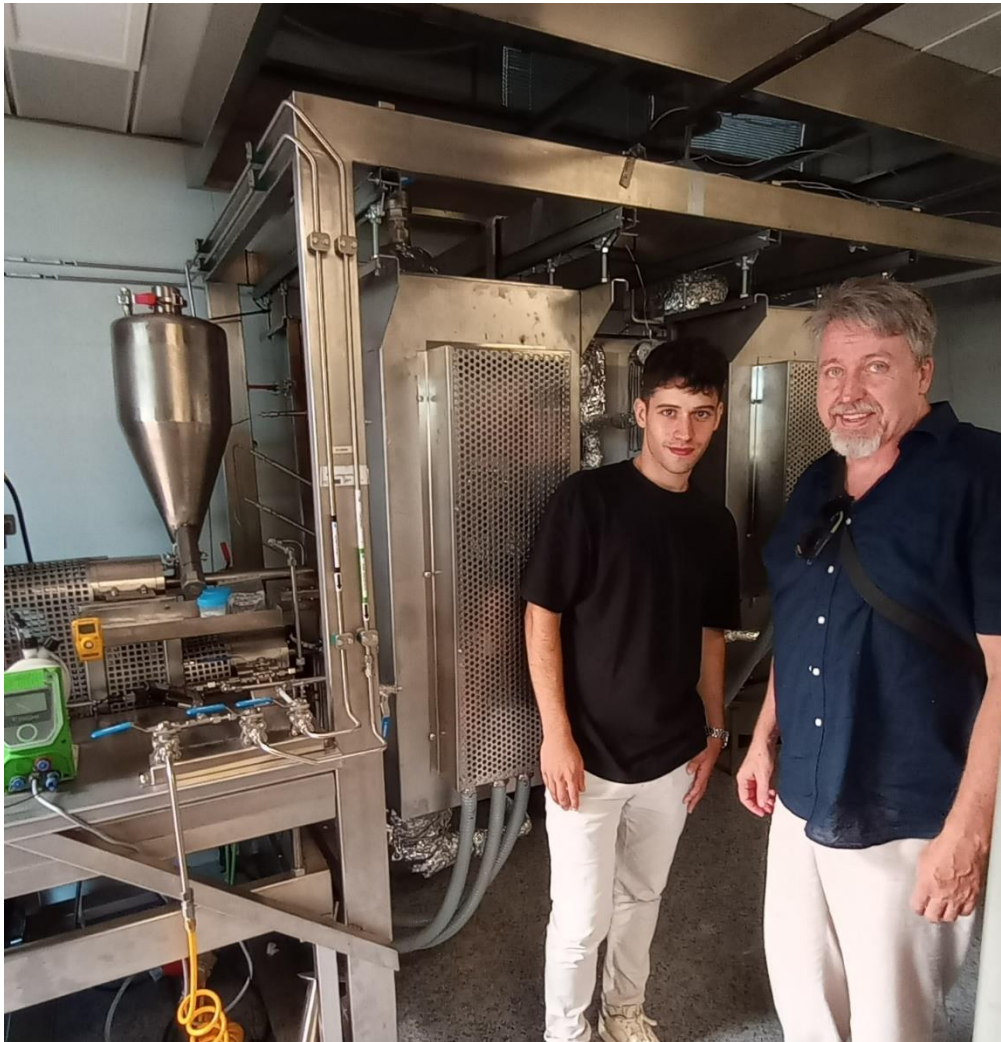
- **Anaerobic digestion and dark fermentation.** Optimization of processes to obtain **biogas** and **biohydrogen**: pre-treatments, co-digestion, new designs, monitoring and control, and recovery of the streams generated (nutrient recovery and VFAs).
- **Gasification and thermochemical recovery:** direct and combined gasification (water gas shift-WGS and sorption enhanced water gas shift –SEWGS) of residual biomass to obtain **syngas** and **hydrogen**. Study of pretreatment of materials, use of additives, catalysts and hybrid systems.
- **Treatment and recovery of gas streams:** systems for cleaning and purifying gas mixtures, (biological methanation, CO<sub>2</sub> capture, membranes and PSA). Transformation processes into thermal and electrical energy (combustion combined with ORC).



From left: Gerardo Rodríguez Vázquez, Innovation and Markets Director, Elena Olaya, Senior Researcher Biomethane and Sonia Pascual, European projects unit and manager of the HYDEA project.

*Photo: Jörgen Held*

Elena Olaya showed the counter-current trickle bed reactor for syngas fermentation as well as reactors for hydrogen production through dark fermentation of organic waste.



Xandre Costas (to the left) showed the fluidised bed gasifier and the subsequent catalytic tar reformer reactor.

*Photo: Gerardo Rodríguez Vázquez*

The gasification activities include among others the use of pulverized seashells for sorption enhanced gasification and co-gasification of sewage sludge with different types of biomasses.

Joaquín Grassi, Senior Researcher Hydrogen and SOEC electrolysis highlighted some of the fuel cell and electrolysis R&D activities.

The EnergyLab expressed an interest in the CarbonNeutralLNG project and the possibilities for further information exchange.