

#support

PROMOTING RENEWABLE ENERGY THROUGH SMALL-SCALE ANAEROBIC DIGESTION FACILITIES

Structure : PICOJOULE



Ramonville-Saint-Agne

Occitanie

Picojoule refers to a unit of energy measurement in physics

. Since 2012, it has also been the name of an organization that promotes renewable energy through small-scale anaerobic digestion facilities

Following its experiences at Artilect, the Toulouse Fab Lab, Picojoule joined the Maison de l'Économie Sociale et Solidaire (MES) in Ramonville in 2016.

WE OFFER

Training programs that include theoretical sessions and hands-on workshops on the basics of anaerobic digestion and the challenges involved in building small digester units yourself.

Picojoule's Initiatives: Outreach & Awareness

Demonstration booths on the anaerobic digestion process for the general public

Raising awareness about economic issues and energy self-sufficiency

Research and Development

: Manufacturing pilot-scale anaerobic digestion systems; monitoring and improving existing installations; researching and developing solutions for biogas storage, compression, and purification

Support

: Assisting project leaders in the design, installation, and monitoring of their small-scale, low-tech biogas projects

OUR CONCRETE ACTIONS

MES

Outdoor Kitchen Shed Many campgrounds and remote sites are interested in a comprehensive solution for self-sufficient restroom facilities.

To meet this demand, Picojoule developed a solution: the outdoor kitchen shed.

After raising €4,000 through a crowdfunding campaign, Picojoule began construction on this project. It took six months to complete this pilot and put it into operation.

It consists of a 1,000-liter digester, a solar water heating system, a sink, and a biogas-powered cooking unit.

Organic waste is shredded by a sink disposer and then pumped into the system

. There is also a recirculation system to mix the liquid.

Applications

: A shed like this one allows for the combination of several renewable energy sources (solar thermal and biogas) to create a self-sufficient solution.

The digester can operate seasonally in the summer, when the heat enables significant gas production and a domestic hot water system. In winter, it can go into “hibernation” until the next season.

In addition to the features included in our digester, it is possible to add a marine toilet that feeds the digester and a hot-water shower to provide a complete bathroom facility.

200L

Batch Digester The batch digester consists of a barrel filled with organic matter and methanogenic microorganisms (digestate from another digester or cow manure).

The drum is then hermetically sealed for a retention time of 3 months to 2 years, depending on the temperature. Once decomposed, the material makes an excellent agricultural fertilizer.

As the organic material decomposes, biogas is collected through a pipe connected to the drum's lid.

The biogas is used to power a gas stove but can also fuel a boiler or a generator.

Applications

: Batch digesters are recommended for treating fibrous or solid waste:

- Grass clippings
- Market waste
- Dry toilets

This system requires a one-time effort every 4 to 6 months to empty and refill the drums.

Liens

<https://www.picojoule.org/>