

CLAMBER R&D BIOREFINERY

Castilla-La Mancha region, in order to place itself in the centre of the new European Strategy for Bioeconomy developed the Castilla-La Mancha Bioeconomy Region Project (CLAMBER Project). As a result, the CLAMBER R&D Biorefinery was constructed.

CLAMBER R&D Biorefinery is a public demonstrative facility based on an innovative, integral, modular and flexible biorefinery at the service of companies for process optimization, development of new bioproducts, scale-up of experiments (from kilograms to one ton of dry matter per day) and training in biotechnology, ensuring full confidentiality. The type of biomass that can be fed and studied are lignocellulosic biomass (prunings, branches, straw, etc.), sugar or starch biomass (corn, beet, etc.) and wet biodegradable biomass (whey, grape marcs and lees, OFMSW, etc.)



EQUIPMENT OVERVIEW:

UPSTREAM:

- Mills for herbaceous and woody biomass (200 kg/h)
- Extractor with vapour (3 m³)
- Two-step Steam Explosion Reactor (400 l, up to 21 barg)
- Solid/liquid separators (15 m³/h)



MID-STREAM:

- Microbiology laboratory for micro management (starters, inoculants, etc.)
- Reactors for hydrolysis and anaerobic and aerobic fermentation: 2 x 3 l, 2 x 30 l, 1 x 300 l, 1 x 3000 l and 1 x 20000 l
- Systems for sterilization, substrate preparation, addition of sterile reactants, cleaning in place, and other utilities

DOWN-STREAM:

- Harvesting Tanks with capacity to act as a extractor: 2 x 10000 l and 2 x 1500 l
- ATEX area
- Microfiltration system (1 m³/h)
- Centrifugation system (1,5 m³/h)



ANAEROBIC DIGESTION PLANT:

- Storage tanks for liquids (20 m³) and solid (10 m³) wastes
- Pasteurization System (1 m³)
- Anaerobic Digester (11 m³)
- Gasometer (20 m³)

CLAMBER R&D Biorefinery

Pol. Aragonesas. Ctra. de Calzada (CR-503) s/n
13500 Puertollano (Ciudad Real, Spain)

clamber@jccm.es | <http://clamber.castillalamancha.es>