SUPREMAS

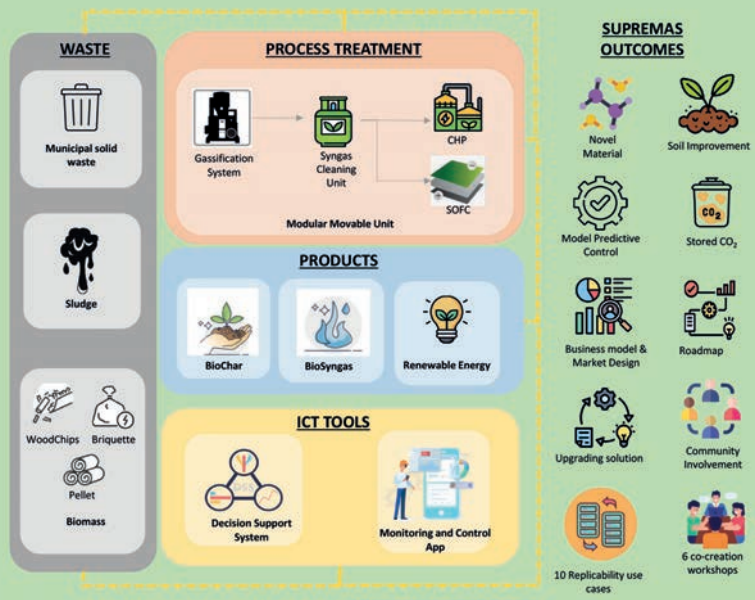
Syngas modular Units Providing Renewable Energy from Multiple wAstes and for different useS

SUPREMAS aims at advancing the European technology leadership in bio-energy development, fostering decentralized gas systems development and contributing to the energy transition for different use cases.

SUPREMAS Outcomes

It will enable circular value chains where multiple residues, discarded from different processes, will be valorized providing electricity, heat and cooling and new materials.

SUPREMAS Concept



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SUPREMAS Objectives

- Development of decentralized syngas production movable units
- Process optimization for improved biomass syngas conversion rate and purification
- Development of syngas movable cleaning unit and maximization of syngas production
- Optimal planning (number, size, movements) of syngas movable units fleet
- Decision Support System [DSS] and Life Cycle Costing indicators
- SUPREMAS APP for remote monitoring of Syngas production movable units
- Demonstration and assessment of the techno-economic viability of the proposed solution, embedding Life Cycle Costing indicators

SUPREMAS Demo Sites

Freixo WWTP - (Porto, Portugal)

The novel modular movable unit will be installed and tested using dried, pelletised digestate as main feedstock (alone or blended with other feedstocks) to produce syngas that via a CHP system will be valorized for both electricity and heating production.

Ponte de Outeiro (Lugo, Spain)

The novel modular movable unit will be tested for using dried, pelletised sewage sludge as main feedstock (alone or blended with structuring feedstock i.e. wood residues) to produce syngas that via a CHP system will be valorized. Furthermore, a study related to the biochar valorization will be conducted in order to produce organic fertilizer at low cost suitable for agricultural and forestry use.

SUPREMAS Partners

RINA · Mälardalens universitet · RESET Innovation in Biomass Technology · circe Creating together · Artelys Optimization Solutions · Steinbeis Europa Zentrum Enabling Innovators to Grow

CIIAE Centro Ibérico de Investigación en Almacenamiento Energético · agroamb · Engreen · WIP Renewable Energies · ergar · Porto. Águas e Energia do Porto

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