



# **COMETHA**

***Industrial scale pre-commercial plant  
for second generation lignocellulosic ethanol***



*"This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 322406"*



## About COMETHA

COMETHA is a collaborative project started in 2014 and co-funded by the 7<sup>th</sup> Framework Programme of the European Union.

- ✓ The scope of COMETHA is the construction and operation of an integrated industrial facility for the production of second generation bioethanol and other co-products from lignocellulosic feedstock.
- ✓ First of its kind plant at pre-commercial scale based on the PROESA<sup>®</sup> technology.



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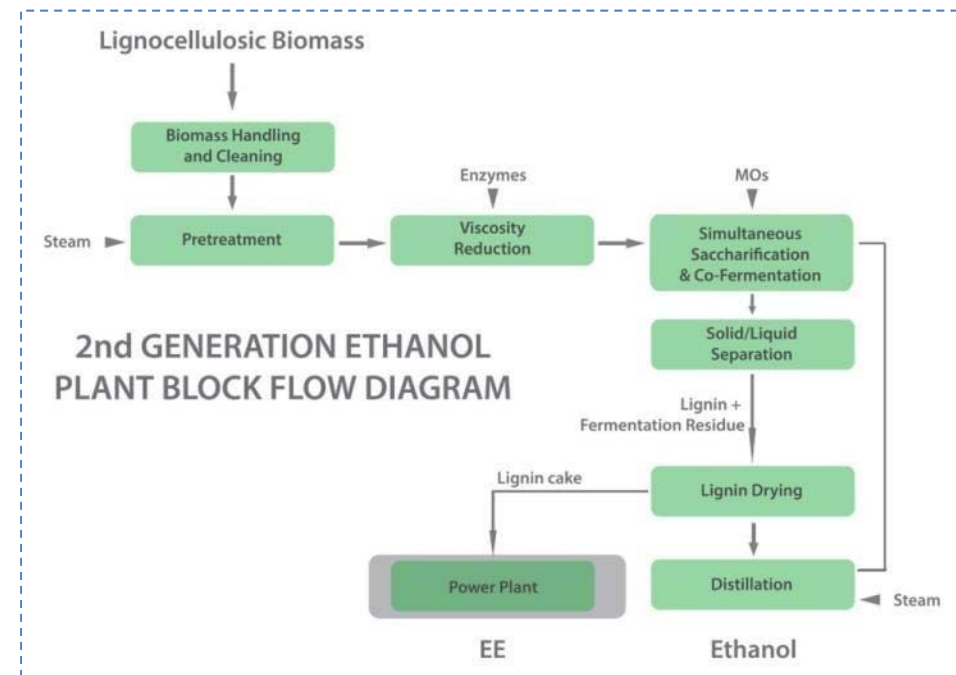


# Biorefinery approach

*COMETHA will demonstrate the integration of second generation processes into a full industrial-scale biorefinery.*

Key innovative elements:

1. a proprietary biomass pre-treatment unit;
2. SSCF technology;
3. use of novel high-performance enzymes;
4. high-efficiency integrated distillation and dehydration system;
5. valorisation of secondary streams and process integration.



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# ***Large-scale efficient and sustainable biomass supply***

Dual feedstock:

Dedicated energy crops and agricultural residues.

Different biomass sources with non contemporary harvesting times to ensure constant supply and regular functioning of the plant.

The biorefinery will be fed with fresh biomass from *Arundo donax* and agricultural residues in the seasons when they will be readily available from the fields.



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## *Environmental performance*

COMETHA will develop a detailed life cycle assessment of the bioethanol flagship plant in order to demonstrate the actual GHG emission savings of second generation ethanol and the overall sustainability of the technology and of the supply chain.



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## Partners



Project coordination construction and start-up of the biorefinery, management of the biomass supply chain.



Viscosity reduction, commercial-scale enzymatic hydrolysis processes development of enzyme cocktail.



Environmental assessment and policy-making component.

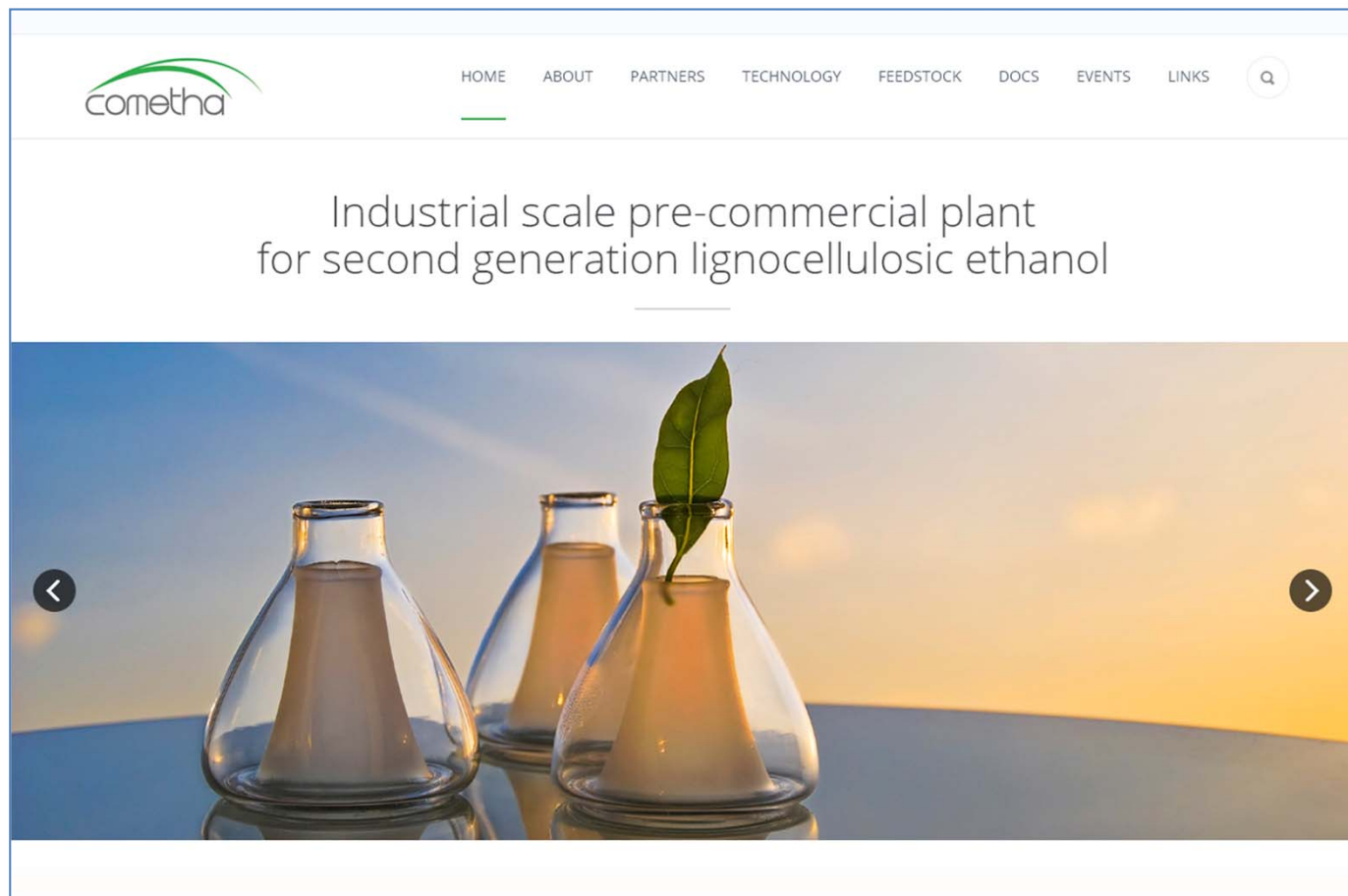


Communication and dissemination of results.



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