

Corporate Innovation Challenge Template

Challenge Name: Biobased Chemicals
Code Name: BIOECONOMYVENTURES-2023-OC3-REPSOL_1
Challenge Domain: <ul style="list-style-type: none"> Other: Biobased chemicals
Description of the Corporate innovation Challenge
<p>New biological pathways from sugars/biomass/organic waste to olefins, dienes or other co-monomers, for polyolefin or synthetic rubber production</p> <p>Repsol is a global multi-energy provider that strives to drive the evolution towards a low-emissions energy model. Repsol Technology Lab is focused on solving challenges in the areas of mobility, emissions reduction, oil & gas, Industry 5.0.</p> <p>Challenge: Development of cost-competitive bio (olefin/diene/other monomer) technology.</p> <ul style="list-style-type: none"> To reduce CO2 footprint from fossil monomer production processes (steam cracking) (Environmental impact). To increase the use of non-food and waste biomass as feasible low cost feedstock (Economic impact). <p>Scale up of the bio (monomer) production and demonstration of process feasibility will be subject to a further technology project.</p>
Expected results
<p>Design of a new process and reaction system based on experimental studies together with simulation activities.</p> <ul style="list-style-type: none"> Design, synthesis and testing of new catalysts, enzymes or microorganisms for bio(monomer) production Process optimization (number of stages, yield, selectivity, purification, by-products). <p>A techno-economic and environmental evaluation of the new bio-based configuration proposed compared to fossil production.</p>

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The requirements will be to achieve a reduction of CO2 footprint at least 70% from fossil bio(monomer) production process

Types of Collaboration

1. Pilot running and product testing
2. R&D opportunity
3. Mentorship
4. Corporate Venturing
5. New business model exploration (i.e., exclusive distribution, profit sharing, IP sharing ...)
6. Knowledge sharing and Tech Transfer

Participation confirmation

I confirm Repsol SA availability and participation in the BioeconomyVentures programme. This confirmation allows BioeconomyVentures the right to publicly disclose the company's name, challenge information, logo and website for the purpose of dissemination and attracting new innovators to the programme.

Company Information

Company Name: Repsol SA

Challenge owner name and last name: Silvia Pérez Díaz / Enrique Espí Guzmán

Challenge owner email: sperezd3@repsol.com / eespig@repsol.com

Company information:

<https://www.repsol.com/en/about-us/company-profile/index.cshtml>

Repsol is a global multi-energy company that is leading the energy transition with its ambition of achieving zero net emissions by 2050. Present throughout the energy value chain, the company employs 24,000 people worldwide and distributes its products in nearly 100 countries to around 24 million customers.

Repsol produces an average of 650,000 barrels of oil equivalent per day and boasts one of Europe's most efficient refining systems. The company is transforming its seven industrial complexes in Spain, Portugal, and Peru into multi-energy hubs through state-of-the-art projects that will reduce their carbon footprint and will enable it to be a benchmark in the production of renewable hydrogen and sustainable fuels by 2030.

Its customer-focused product and services portfolio is capable of meeting all consumer energy needs, whether at home or on the move. It leads the development of sustainable mobility solutions with

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increasingly efficient fuels, biofuels, Autogas, natural gas for vehicles, and electric vehicle charging solutions. Repsol is also a major player in the power and gas market in Spain, with 1.35 million customers and renewable generation assets with a total installed capacity of 1.1 GW.

To achieve zero net emissions by 2050, Repsol is deploying an integrated model of decarbonization technologies based on enhanced efficiency, increased renewable power generation capacity, production of low-carbon fuels, development of new customer solutions, the circular economy, and by driving breakthrough projects to reduce the industry's carbon footprint.

