



IEA Bioenergy
Technology Collaboration Programme

Task 42
Biorefining in a circular economy



The Netherlands - update

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- Growth fund application (350 m€): Biobased Circular (BBC)
- Chemport Innovation Centre (CIC) in Delfzijl
- HyCarb/Torrgass Green H₂ plant in Delfzijl

Origin Materials & Avantium announce partnership

- Origin Materials takes industrial technology license of Avantium's YXY technology
- Will produce 100 kt per year building-block chemicals CMF (chloromethylfurfural) / FDCA (furandicarboxylic acid) from sustainable wood residues
- Origin Materials signs off-take agreement from Avantium's FDCA pilot plant in Geleen in 2023 and from its FDCA Flagship Plant in Delfzijl as from the commercial operations date in 2024



<https://www.avantium.com/2023/avantium-and-origin-materials-to-accelerate-the-mass-production-of-fdca-and-pef-for-advanced-chemicals-and-plastics/>

Growth fund application (350 m€): Biobased Circular (BBC)

Bio-based raw materials as the basis for a new branch of industry

- Lactic acid as feedstock for both the food industry and sustainable biobased plastic production
- Biobased monoethylene glycol (MEG) from sugar beet, to make the polyester industry more sustainable
- Production of biobased resins from citric acid and glycol, e.g., for the furniture industry or building materials
- Bio-aromatics from plant waste streams for paints, coatings and insulation materials
- The production of PHAs (polyhydroxyalkanoates), degradable biopolymers from wastewater



Chemport Innovation Centre (CIC) in Delfzijl

- Focus on the development of green raw materials, recycling and renewable energy
- CIC provides space, facilities and permits for innovative companies making their final development step before realizing a large-scale production (TRL 7-8)
- CIC has 4 hectares at its disposal
- There are four production halls with building and energy facilities averaging 500 square meters each
- Facilitate an occupancy of between four and eight scale-ups

<https://www.chemportinnovationcenter.nl/en/>



HyCarb/Torrgass Green H₂ plant in Delfzijl

torrgas^o

- Torrgas is developing a 100 MWth plant in Delfzijl for biomass-to-hydrogen
- The project partner is NOM (project Hycarb)
- Primary product: 15 ktonnes of green H₂
- Other products: CO, biochar, green CO₂ & steam
- Feedstocks: residual streams such as demolition wood and prunings
- Technology: Torrefaction & Gasification
- A conceptual design study as well as the overall project development is carried out



1 MWth demo two-stage gasification installation
at DNV in Groningen

<https://www.torrgas.nl/projects/>

Thank you for your attention

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