Renewable building blocks from complex mixed and wet waste streams

Publieke samenvatting / Public summary

Aanleiding

A large share of CO2 emissions by industry is related to the production of fossil-based chemicals (approximately 3.6Mton oil was used in the petrochemical industry in 2021 (extrapolating monthly figures published for the first half of 2021)[1], and all this oil will be converted in CO2 at the end of life of products, if they are not recycled. By transitioning towards circular and biobased (bulk and platform) chemicals the CO2 emissions of this sector can be strongly reduced. The rising prices of conventional (oil-based) feedstock have further intensified the incentive for industry to transition towards alternatives. However, as seen today, the quantities of potential biobased/circular input streams to provide these chemicals is by far not enough to source the demand of industry. Therefore, the aim of industry is to efficiently use all available alternative, circular, and renewable feedstock; this includes the so-called complex and mixed waste streams.

Doelstelling

To provide industry with circular and biobased bulk and platform chemicals new value chains need to be developed where challenging waste sources (e.g., agro/food residues, mixed biomass/plastic, sludges etc.) are converted by innovative technologies (based on hydrolysis, pyrolysis & gasification) into new chemicals. These chemicals can be used to replace current fossil-based chemicals. ReBBloCS will develop these value chains in collaboration with relevant stakeholders (private sector, technology

Projectinformatie / Project information

Projectnummer / Project number
MOOI422006
Subsidiebedrag / Grant amount
€ 3.852.781,00

Algemene informatie / General information

Penvoerder / Secretariat
Stichting Ispt

Publicaties en materialen / Publications and attachments

- **05.09.2025**

  MOOI422006
  Voortgangsrapportage 1

- **27.01.2026**

  MOOI422006
  Voortgangsrapportage 2

- **17.09.2026**

  MOOI422006
  Voortgangsrapportage 3

Volg Topsector Energie op X / Follow Topsector Energie on X

@TSEnergie

providers & knowledge institutes). The goal is to close the carbon cycles of the specific bulk- and platform chemicals considered by ReBBIoCS as much as possible by utilizing and valorizing (fractions of) the considered complex waste streams.

Korte omschrijving

The activities of the project are structured along the following perspectives: - Increasing the technological readiness levels: The technology providers and knowledge institutes will develop the required conversion technologies and value chains. Value chains goes along the path of: Source (waste), pre-treatment, conversion hydrolysis/pyrolysis/gasification), post-treatment, Circular & biobased chemicals for industry. - Solving non technological issues: The development of the decision tool allows partners to determine which route is viable in which instance. Also, relevant stakeholders will address legislative and policy related issues paving the way for successful implementation of circular solutions & value chains. - Ensuring implementation: Through learning communities, knowledge dissemination and implementation strategies societal and industry awareness is strengthened and uptake of the developed value chains by industry is ensured.

Resultaat

ReBBIoCS develops new value chains for a total of 9 circular/biobased bulk and platform chemicals for different industry sectors. Related results are: - A clear scope of the 7 source streams (the waste), i.e., mapped both volumes and compositions of available streams from the participating waste providers. - Determined influence of impurities on chemical properties and cost price - Determined mass-energy balances of conversion technologies - Exploitation: development of 5 pilot plants - A decision tool considering the full value chains in terms of economic & environmental impact to determine which route towards a specific chemical is optimal. - Knowledge dissemination (incl. learning community) and implementation strategy

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
Voor meer informatie over de Topsector Energie, ga naar **www.topsectorenergie.nl**.

Voor meer informatie over de TSE / Energie-Innovatie regelingen die RVO aanbiedt, ga naar **www.rvo.nl/tse**.