

Syngas from renewable hydrogen at BioMCN

Publieke samenvatting / Public summary

Aanleiding

BioMCN (part of OCI) has set ambitious sustainability targets to decarbonize its own operations, namely 20% GHG emission intensity reduction by 2030 and carbon neutrality by 2050. They have set the ambition to develop a future for synthesis gas (syngas) derived products that are independent from primary fossil fuels, which is also driven by current and expected high natural gas price in Northwest Europe. BioMCN is aiming to replace the production of syngas (a mixture of hydrogen, carbon monoxide and carbon dioxide) by their SMR with the direct import of green hydrogen (H₂) and biogenic carbon dioxide (CO₂). BioMCN believes that this approach can create a blueprint for transitioning existing fossil assets to a decarbonized future.

Doelstelling

The goal of this environmental and engineering study is to gain more insights in the technical feasibility, efficiency, energy and heat balances and CO₂-emission reduction of replacing the current natural gas-based steam methane reformer (SMR) with direct inlet of biogenic CO₂ and green H₂ for obtaining syngas in case of three different scenarios. Furthermore, the study will provide details on the expected greenhouse gas emission reduction and other environmental impact. This information is required to support the basic engineering study for the follow-up project.

Korte omschrijving

A FEL-2 level feasibility study will be performed to provide an overview of the expected operational

Projectinformatie / Project information

Projectnummer / Project number

TESNW-03650622

Subsidiebedrag / Grant amount

€ 174.245,00

Algemene informatie / General information

Penvoerder / Secretariat

BioMethanol Chemie Nederland B.V.

Volg Topsector Energie op X / Follow Topsector Energie on X

@TSEnergie

performance and materials at a level of detail that allows an estimation of the cost of replacing the current natural gas-based SMR with direct inlet of biogenic CO₂ and green H₂ for obtaining syngas under three different scenarios. Based on the outcome of the scenarios, a reasonably accurate estimate of the CAPEX will be made that allows the calculation of key financial indicators to be used in the follow-up basic engineering study and the final investment decision. An estimation of the CO₂-emission reduction against the current production method using natural gas will also be calculated.

Resultaat

The intended result of the study is to enable an informed decision to be made for proceeding to the basic engineering phase and ultimately the demonstration of a zero-emission syngas-based products production . The plant will consist of direct inlet of biogenic CO₂ and green H₂ for obtaining syngas in the existing production line of BioMCN, replacing the SMR.

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.