

Project SOON

Publieke samenvatting / Public summary

Aanleiding

OCI N.V. has set ambitious sustainability targets to decarbonize its own operations, namely 20% GHG intensity reduction by 2030 and carbon neutrality by 2050. The transition path of OCI Nitrogen, a subsidiary of OCI N.V., to reach these sustainability goals is to gradually replace the natural gas used in the steam methane reformer (SMR), which is the standard method used in ammonia processes for the production of hydrogen, by hydrogen from renewable sources. After the first steps, where OCI Nitrogen plans to operate the ammonia plant in hybrid mode (using hydrogen from the SMR at reduced rates and importing sustainable hydrogen), bigger steps are needed to further reduce the use of natural gas. To make this change, a transition towards a setup completely without SMR, is needed.

Doelstelling

The goal of this study is to gain more insights in decoupling of the SMR from the ammonia synthesis unit in an ammonia plant, the technical feasibility of such decoupling and the consequences for plant designs, efficiency, energy and heat balances and CO₂-emission reduction of ammonia production using sustainable hydrogen streams. Additionally, the study should support the business case for the project and the production of sustainable hydrogen based ammonia. Furthermore, the study will provide details on the expected greenhouse gas emission reduction and other environmental impact. This information is required to support the final investment decision within OCI as well as to support in discussions with competent authorities and future off-takers of sustainable ammonia.

Projectinformatie / Project information

Projectnummer / Project number

TESNW-03626897

Subsidiebedrag / Grant amount

€ 473.753,00

Algemene informatie / General information

Penvoerder / Secretariat

OCI Nitrogen B.V.

Volg Topsector Energie op X / Follow Topsector Energie on X

@TSEnergie

Korte omschrijving

During the environmental study a design of the plant will be made. This will provide an exact overview of the required processes and materials at a level of detail that allows an estimation of the changes to the installations and related cost of the implementation. The connections to the outside-battery-limits will be engineered, and the permit requirements and environment impact will be analyzed. All the information will be combined into a techno-economical model.

Resultaat

The intended result of the study is to provide all data to enable a sound decision for proceeding to the basic engineering phase which will be followed by an FID and ultimately the demonstration of a zero-emission ammonia plant. This renewed plant will use external, more sustainable, sources of hydrogen and nitrogen to produce ammonia in the existing ammonia synthesis section of the ammonia production line of OCI Nitrogen, replacing hydrogen from the steam methane reformer.

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.