

Basic Oxygen Furnace Gas to Urea

Publieke samenvatting / Public summary

Aanleiding

In the "Energieagenda", the Netherlands has defined a stringent approach towards low-carbon energy management by 2050, aiming at an overall CO₂ reduction of 95%. This has been reiterated by the recently installed Dutch government by formulating the ambition to reduce the CO₂ emissions by 49% in 2030. The demand for construction materials, like steel, and fertilizers, like urea, will only grow. The BOF2UREA project leverages the unique Dutch knowledge and market positions to contribute to these challenges through the development of a cost efficient process leading to a significant reduction of the total carbon footprint.

Doelstelling

The project objective is to contribute towards the reduction of the impact on the climate of industrial activity through the production of urea from the energy and carbon in residual gases in integrated steel plants, using process- and cost-efficient technologies, while simultaneously delivering storage ready CO₂ at no extra costs.

Korte omschrijving

The process development is led by ECN and involves combining information from Stamicarbon, Processi Innovativi, AcelorMittal and Kisuma to generate a new integrated process design. The performance required by the novel CO₂ valorisation system is targeted through process research and process design is used to integrate unit operations for an optimised BOF2UREA system. The environmental impact analysis is led by Radboud University and

Projectinformatie / Project information

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TCCU117008

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Algemene informatie / General information

Penvoerder / Secretariat

Ned. Org. v. toegep.-natuurwetensch.
ond. TNO

Publicaties en materialen / Publications and attachments

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Eindrapport TCCU117008

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will be done through generation of a Life Cycle Inventory (LCI) with input provided from the process development work. Subsequently, operational life cycle impact assessment factors will be applied and a sensitivity study is performed to evaluate the impact of uncertain parameters and assumptions.

Resultaat

An optimised BOF to Urea process, assessment of urea production economics (e.g. cash cost of urea), environmental impact analysis and a commercial implementation plan.

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.