

PureJet 2.0

Publieke samenvatting / Public summary

Aanleiding

Global demand for sustainable aviation fuel (SAF) is rising rapidly, driven by regulatory mandates and targets. In the EU, the ReFuelEU initiative requires a minimum SAF blend of 2% starting in 2025, ramping up to 70% by 2050. Currently, most SAF production relies on waste oils and fats, but these feedstocks are inherently limited and expected to face significant availability constraints beyond 2030. This underlines the importance of advanced bio-routes to SAF to meet the industry's decarbonization targets. Fast Pyrolysis offers a scalable route to valorize RED III Annex 9A feedstocks which can be upgraded to SAF via BTG's proprietary stabilization technology and hydro-processing. SAF has been successfully produced via dedicated upgrading with fuel quality evaluations confirming excellent fuel properties. Synergies with HEFA units may offer a cost-effective route to reduce emissions and improve feedstock flexibility by leveraging existing assets. Moreover, the fuels complementary chemical profile may help overcome the blending limitations for conventional SAFs.

Doelstelling

The overall objective is to identify key challenges and enablers to produce SAF from Fast Pyrolysis Bio-Oil (FBPO) and support the business decision to realize a pre-commercial pilot installation in The Netherlands. The pre-commercial pilot installation will provide a cost-effective instrument to reduce emissions in The Netherlands by providing an alternative to conventional kerosene that may significantly reduce GHG emissions from fuel combustion. Not only has the route the potential to

Projectinformatie / Project information

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Algemene informatie / General information

Penvoerder / Secretariat

SkyNRG B.V.

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reduce scope 1, 2 and 3 emissions, it also provides a means to overcome current blending limitations by unlocking scaling potential well beyond HEFA-SAF. Realization of Fast Pyrolysis SAF production in The Netherlands will help reduce the industry's emissions, set the country back on course for net zero by 2050 while improving energy security and putting us on the map as Cleantech frontrunners.

Korte omschrijving

After previous successful collaborations, SkyNRG and BTG will collaboratively work to achieve the project objectives. Significant volumes of FP-SAF will be produced and a Task Force will be initiated at ASTM to evaluate the FP-SAF process and fuel performance according to ASTM D4054 procedures. BTG will lead technical work including experimental validation and production of the required volumes for ASTM qualification using their existing FBPO stabilization and upgrading pilot plan. SkyNRG will initiate and manage the ASTM qualification of FP-SAF. A road to market activity will include insights into the LCA performance, the GHG reduction potential of FP-SAF as well as a techno-economic evaluation to inform the Business Plan for future market roll-out of FP-SAF. Based on the project findings, the pre-commercial pilot lay-out will be optimized and preparatory activities will take place to prepare for engineering of the plant as well as FID.

Resultaat

After finalizing the PureJet 2.0 project, the following objectives will be achieved:

- ASTM D4054 evaluation initiated with Tier 1 and 2 Research Report drafted and feedback on the likeliness of succeeding in the qualification procedure for neat FP-SAF
- Identification of opportunities and barriers for FP-SAF production
- A business plan for future commercialization of the FP-SAF technology.
- Concept of the pre-commercial pilot and preparatory documents needed to bring the project to FID.
- A go/no-go decision on continuation of the project to the subsequent engineering phase.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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