

Innovation for Alcohol to Jet Techniques Based on Biogenic (Residual) Streams

Introduction

The use of sustainable aviation fuels is the only option in the short and medium term to achieve significant results in the energy transition of aviation the sector. For this, it is important sufficient sustainable aviation fuels are available. Sustainable aviation fuels can be partially produced or generated in the Netherlands and Europe. This contributes to increasing energy security and independence in the Netherlands and Europe, to making the aviation sector more sustainable (reduction of CO₂ emissions), and it also offers opportunities for future earning potential.

ReFuelEU requires aviation fuel suppliers to ensure that from 2025, a minimum of 2% of the supplied fuels are sustainable. This share gradually increases to 70% by 2050. These sustainable fuels can be produced using various techniques, including Alcohol to Jet (AtJ) techniques. AtJ refers to: a process where alcohols are upgraded to aviation biofuels, also known as biokerosene, through various process steps.

The cabinet has decided to establish a subsidy scheme using resources from the Climate and Transition Fund to support the market in further developing and scaling up production techniques for AtJ fuels. In shaping the instrument that implements this measure, the Ministry of Climate and Green Growth and the Ministry of Infrastructure and Water Management want to involve market parties.

The purpose of this consultation is twofold:

1. To determine what plans exist in the market to further develop AtJ techniques and/or to produce biokerosene based on AtJ, and
2. To determine how potential conditions of the instrument can influence the realization of AtJ projects.

Your answers will serve as input for the further elaboration of a possible subsidy scheme.

Target Group

The consultation is aimed at companies and research organizations that develop AtJ techniques or companies that want to produce AtJ fuels. The development of the technique takes place at TRL level 5-8. Within this TRL range, pilot and demonstration projects are developed.

Questions

The consultation questions are included in the relevant document called 'English questions and answer form'. You should use the separate answer form for your submission. You can optionally submit multiple sets of answers if you are developing multiple projects.

Background of the Consultation

Research has been conducted into the state of technology and production possibilities in the Netherlands for several techniques which can produce biokerosene. AtJ is one of these techniques. The challenges for AtJ and the state of technology in the Netherlands have led to the conclusion that a subsidy for pilot and demonstration projects could offer a solution in the medium term and further help the production of biokerosene. In the multi-year program of the Climate Fund, €90 million (distributed over several years) has been allocated for this purpose in the spring of 2024.¹ For a quick and efficient implementation of, it is being investigated whether this can be shaped through the existing DEI+ innovation scheme. After all, this subsidy scheme supports innovative pilot and demonstration projects that contribute to making the Netherlands more sustainable. If the DEI+ is used for this purpose, part of the DEI+ opening will be reserved for production techniques for biokerosene produced with (bio-)alcohols. The alcohols must be of biogenic origin.

With this consultation, the Ministry of Infrastructure and Water Management wants to investigate which conditions for the DEI+ are appropriate and what the effects of different conditions are. For

¹ [Ontwerp-Meerjarenprogramma Klimaatfonds 2025 | Rapport | Rijksoverheid.nl](#)

pilot projects, Article 25 of the General Block Exemption Regulation (the state) applies, and for demonstration projects, Article 41.

- Article 25 provides support for pilot projects that fall within the definition of experimental development. Innovations are tested in an environment that is representative of functioning under real conditions. For the depreciation costs of equipment, in principle, only the depreciation costs during the project period are eligible for subsidy and not the depreciation of equipment after the project has ended. Support can be given to experimental development of the entire AtJ process, including alcohol production from biogenic raw materials, or only to individual steps in the production process. Other characteristics and conditions specific to pilot projects within this theme are expected to be:
 - The maximum aid percentage is 25% (small and medium-sized enterprises can receive an additional 20 and 10 percentage points respectively¹). The aid percentage for research organizations is 80%.
 - Projects focused on an individual step or several steps in the complete production process, from biogenic rawmaterial to biokerosene, are aimed at the production of intermediate products for biokerosene. An example of this is the production of intermediate olefins from alcohols.
- Article 41 provides investment aid for promoting energy from renewable energy sources. Within this, support can be given to projects that produce biokerosene. Under this article, support can only be given to projects that produce aviation fuels from biogenic (residual) streams. Other characteristics and conditions specific to demonstration projects will be:
 - The maximum allowable aid percentage is 45% of the eligible costs (plus 10 or 20 percentage points for medium-sized or small enterprises respectively). The costs eligible for subsidy are the total investment costs.
 - The produced biokerosene must comply with the sustainability requirements as established in Article (paragraphs 2 to 7 and 10) of the Renewable Energy Directive.
 - The complete production process, from biogenic raw material, to alcohol, to biokerosene using ATJ, must be developed to be able to apply Article 41.

General characteristics and conditions that apply to both:

- Pilot projects (in accordance with Article 25) can receive a maximum subsidy of 25 million euros. Demonstration projects (in accordance with Article 41) can receive a maximum subsidy of 30 million euros.
- Projects primarily focused on the production of alcohols are not allowed.
- Used biomass streams come from Annex IX-A of the Renewable Energy Directive.
- Process steps without a focus on the production of intermediate products for biokerosene are only allowed if the project primarily focuses on the realization of a concrete production line for the production of biokerosene. For example, process steps can be developed that upgrade waste or by-products of the complete production process.
- For the application for subsidy, the permits needed to realize must be obtained and submitted.

¹ <https://www.rvo.nl/onderwerpen/subsidiespelregels/ezk/mkb-toets>

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You can download and fill in the questions and answer form. This document can be uploaded when you click on the button: "Reageren op deze consultatie ->"