

Innovation Projects for the Production of Aviation Fuels from CO₂ and Hydrogen

Introduction

The use of sustainable aviation fuels is the only option to significantly reduce CO₂ emissions from the aviation sector in the short and medium term. For this, it is important that 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 and also offers opportunities for future earning potential.

ReFuelEU proposes a requirement of 1.2% for synthetic aviation fuels in 2030, increasing to 35% in 2050. Synthetic aviation fuels, also called 'Power to X fuels' (P2X fuels) can be made in various ways. P2X refers to: a process where renewable hydrogen and CO₂ are upgraded to aviation fuels 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 P2X fuels. In shaping the instrument that implements this measure, the Ministry of Climate and Green Growth and the Ministry of Infrastructure and Water Management wish to involve market parties.

The purpose of this consultation is twofold:

1. To determine what plans exist in the market to further develop techniques or projects that can produce P2X fuels, and
2. To determine how potential conditions of the instrument can influence the realization of P2X fuels projects

You are requested to respond in writing to the consultation questions included in this document. Your answers will serve as input for the further design of a possible subsidy scheme.

Target Group

The consultation is aimed at companies and research organizations that develop techniques to produce P2Xfuels, or those who want to produce P2X-fuels. The instrument would stimulate projects from TRL 5-7. In this TRL range, pilot projects are often developed. However, our target group also includes companies that want to realize demonstration projects (TRL 8).

Consultation Questions

The consultation questions are included in the relevant document called 'English questions and answer form'. Please 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 that can produce P2X fuels. The identified challenges for P2X

fuels techniques and their production in the Netherlands have led to the conclusion that an innovation subsidy could offer a solution in the medium term and promote the production of P2X fuels. In the multi-year program of the Climate Fund, €90 million (distributed over several allocations for this purpose in the spring of 2024). For a quick and efficient implementation of this measure, it is being investigated whether this can be shaped through the existing DEI+ innovation scheme. 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 that make P2X fuels from CO₂ and H₂. For a first opening, it is being considered to only subsidize pilot projects (and thus not yet provide investment support for demonstration projects).

With this consultation, the Ministry of Infrastructure and Water Management wants to investigate which conditions for the DEI+ are appropriate, whether additional conditions should be introduced, and what the effects of different conditions are. Projects within this theme will have to meet these conditions to be eligible for subsidy. For pilot projects, Article 25 of the General Block Exemption Regulation (GBER) applies. This is the state aid framework used.

- Article 25 provides support for pilot projects that fall within the definition of experimental development. Innovative P2X fuels production processes 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. 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 respectively). The aid percentage for research organizations is 80%. A project can receive a maximum subsidy of 25 million euros.
 - Projects focusing on the complete production process, from CO₂ and H₂ to P2X fuels, are allowed.
 - Projects focusing on several process steps in the complete production process are also allowed, provided these process steps are aimed at the production of intermediate products for P2X fuels. An example of this is the optimization of the conversion of CO₂ to CO by reacting with hydrogen.
 - Process steps without a focus on the production of intermediate products for P2X fuels are only allowed if the project primarily focuses on the realization of a complete production line for the production of P2X fuels. For example, process steps can be developed that upgrade by-streams and by-products of the complete production process.