INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update April 2023: The Netherlands

Name	Han Feenstra
Contact Information	j.d.feenstra@minezk.nl
Covered Period	December 2022 – April 2023

1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

- In December 2022 the Minister of Climate and Energy Policy Rob Jetten sent a letter to the House of Representatives about the progress regarding Dutch hydrogen policy. The main announcements made were as follows:
    - In this letter Minister Jetten declared the intention to realise a minimum target of 4 GW installed electrolysis capacity in 2030, and to publish plans for a mandatory use of hydrogen(carriers) in the industry sector in 2024.
        - January 2023: An increased ambition of 8 GW in 2032 was announced
    - The Netherlands will participate in the German H2Global initiative. A budget of €300 mln has been allocated for the Dutch tender in the second half of 2023/beginning of 2024.
    - Study on Corporate Social Responsibility / Responsible Business Conduct aspects of hydrogen import has been completed by consultancy firm Arcadis in March, commissioned by the Ministry of Economic Affairs, to be published in May
- Bilateral joint declarations and agreements on or including hydrogen: Germany (27 March), France (12 April 2023), Chile (27 March 2023) Spain (20 Feb 2023), Australia (30 Jan 2023). The purpose of the joint statements is to strengthen collaboration regarding knowledge exchange and new (policy) initiatives for hydrogen.
- Announcement of plan for 500 MW offshore production in the North Sea to be operational in 2031. This project will be the largest offshore hydrogen plant in the world, and the first one where offshore hydrogen production will take place at large scale. The project also marks the first time where a specific offshore area has been designated by the Dutch government for the production of hydrogen.

2. Hydrogen and Fuel Cell R&D Update

See TKI_NG Innovatieagenda waterstof (20 dec 2022).pdf (topsectorenergie.nl) for an updated innovation agenda of the Dutch hydrogen sector (December 2022, in Dutch only).

3. Demonstration, Deployments, and Workforce Developments Update

- The Netherlands has over 165 active research, pilot, and demonstration projects related to hydrogen technology, a 25% increase from the previous year. In April 2022, an international guide on hydrogen was published which included a list of Dutch companies active in the field. The new Hydrogen Guide for the Netherlands has been published by TKI Nieuw Gas, part of the so-called Topsector Energy Organization (public-private innovation partnerships). This comprehensive guide includes information on all kinds of organizations in the Netherlands active in the hydrogen domain. Links to the projects can be found here and here.

A number of new projects:

- With IPCEI support Nedstack realises a First industrial Deployment for the production of fuel cells to GW scale
- Projects focussing on the offshore hydrogen production :, AmpHytrite Test unit (TU) and Proof-of-concept of direct seawater alkaline electrolysers and Poseidon.
- The National Growth Fund allocated €18.4 mln for two (demonstration) innovation projects in the DEI+ subsidy scheme. The H2 Hollandia project entails a 5 MW PEM electrolyser that aims to prevent curtailment by using excess solar power for the production of green hydrogen. The second project, the HYGRO Energy project, will focus on the system integration of wind energy in the production of green hydrogen including storage and distribution to hydrogen refuelling stations ('wind to wheel'). The DEI+ subsidy scheme will be opened again for new submissions in the second half of 2023. Information on the progress of the scheme can be found here.

4. Events and Solicitations

- WHS (May 9-11, 2023) in Rotterdam, NL. Following the success of the WHS in 2022 the organisers have doubled the capacity for 2023. The Sustainable Energy Council, in collaboration with the Port of Rotterdam, the City of Rotterdam, and the Province of Zuid-Holland, will host the largest global hydrogen event with more than 8000 decision makers, Energy Ministers, and CEOs from over 100 countries in attendance. Will include meetings on CEM International Hydrogen Trade Forum, on certification, on international finance, and on will be organized and is relevant for IPHE.

5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

- IPCEI Industry wave: in December 2022 it was announced that €783.5 mln (859 mln USD) will be awarded to 7 large-scale electrolyser projects with each having a minimum capacity of 100 MW. The 7 projects amount to a combined capacity of almost 1.2 GW which is a quarter of the 4 GW ambition set out for installed electrolysis capacity in the National Climate Agreement. The projects are expected to take FIDs in 2023.
    - Approval of projects in the 3rd wave (infrastructure and storage) and the 4th wave (mobility and transport) will follow in the second half of 2023.
- SDE++: The SDE is the largest and most significant scheme in which the Dutch Government supports sustainable (energy) project. This year, a budget of €8 billion (8.7 billion USD) has been made available for projects including hydrogen which could achieve a total CO2 reduction of 4 Mton in 2030. The scheme will be opened for submissions from June to July 2023. Progress on this scheme can be found here.
- AanZET: in April a subsidy scheme opened with an available budget of €30 mln (33 mln USD) to subsidise 400 hydrogen and battery-electric heavy duty vehicles. The allocation of the budget and the selected projects will be announced in April 2023. The Ministry for Infrastructure and Water Management will look into the possibility for additional budget or this scheme.

6. Regulations, Codes & Standards, and Safety Update

- December 2022: The Dutch Enterprise Agency, in collaboration with the Ministry for Economic Affairs and Climate Policy and the National Hydrogen Program, carried out a pilot regarding the certification of renewable hydrogen under the RED2

requirements. The purpose of the pilot was to show that the 6 companies that participated in the pilot can prove that the hydrogen they produce is renewable using the concept version of the RFNBO certification scheme. More information on the pilot can be found here and the final report can be found here (in English).

- March 2023: report regarding the safety standards of expected import volumes of hydrogen carriers sent to the House of Representatives. It is expected that future import volumes of hydrogen will mainly consist of ammonia and that current policy and safety standards regarding the transport and storage of this substance will need to be adjusted to facilitate for the expected increase in volume.