



FOCUS ON HYDROGEN: REGULATORY DEVELOPMENTS IN THE NETHERLANDS

Three years after the Cabinet presented its Cabinet Vision on Hydrogen (*Kabinetsvisie waterstof*), the Dutch Government has taken significant steps in developing a regulatory framework to support the global hydrogen market.

In light of the recent announcement by the Dutch Government to double its ambitions for the scale-up of installed hydrogen capacity to 8 GW by 2032, and as the global hydrogen market continues to develop and mature, the question of market regulation of hydrogen in the Netherlands has become even more pressing. Similarly, outstanding questions need to be answered by the Dutch Government and, more broadly, the European Commission in the near future as to which parties will be permitted to participate in the field of electrolysis, transportation and storage of hydrogen (in addition to the construction and operation of import/export terminals), under what conditions, and how to ensure fair and open third-party access.

In this briefing, we give an overview of some of the developments in the Dutch regulatory framework for hydrogen since the publication of the Cabinet Vision on Hydrogen. These developments will play a crucial role in shaping the future of the Dutch hydrogen market, and understanding their impact is essential for sector stakeholders.

Market consultation

In the first quarter of 2022, the Dutch Government held a public market consultation on the following topics: electrolysis, development and management of hydrogen transport networks, grid planning, underground storage, terminals for the import of hydrogen, hydrogen quality and blending of hydrogen. Respondents were quite diverse in background, and varied between public and private entities, from different parts of the hydrogen supply chain.

Predictably, there was a divide between the private and the public entities in terms of responses. Commercial parties consider aspects such as storage, terminals and the development of electrolysis plants to fall in the private domain whilst network operators, regulators and the Dutch Government believe that public intervention might be necessary. There was also no consensus on the regulation of hydrogen storage or as to whether network operators should be involved in offshore hydrogen grids.

Key issues

- Market consultation
- Position of the Dutch Government
- Development of a hydrogen backbone
- Grid regulation
- Hydrogen quality
- Guarantees of Origin
- Dutch implementation of EU Hydrogen Regulations

Nevertheless, most parties seem to agree that the degree of regulation should be in line with the stages of development of the hydrogen market, that network operators should have a guiding role in choosing electrolysis sites and that harmonised hydrogen quality standards are expected to be introduced at a wider EU level. Moreover, parties agree that the development of private hydrogen networks and access to them should be regulated in a way so that it does not undermine the development of a national network. Most participants therefore favour regulations that facilitate negotiated non-discriminatory access.

Position of the Dutch Government

In a letter dated 29 June 2022, the Minister for Climate and Energy, Rob Jetten, presented a summary of the Dutch Government's position regarding the regulation of the hydrogen market.

The Dutch Government does not foresee a role for public grid operators and public grid companies in relation to electrolysis, unless and only when there is a need for these parties to intervene because the private sector is not meeting market demand in time, despite Dutch Government support and market incentives.

In contrast, the Dutch Government envisages the involvement of both commercial parties as well as public grid operators and public grid companies in relation to transmission grids. When it comes to "geographically limited" grids (i.e. on a local scale within an industrial cluster), the Dutch Government notes that commercial parties may play a part. That said, the Dutch Government wants to prevent competition between private grids and the public grid and therefore will investigate whether large-scale private hydrogen grids should become part of the national hydrogen grid at some stage in the future.

It is envisaged that HyNetwork Services (HNS), a subsidiary of Gasunie, will be appointed as the grid operator of the national hydrogen grid in 2025. The legislative framework on a regional level is being developed and the Dutch Government is currently investigating the need for a public operator in relation to offshore hydrogen grids. Until then, the existing public grid companies will be involved in the operation of existing onshore national transmission grids.

When it comes to import / export terminals and the storage of hydrogen, the Dutch Government is awaiting the outcome of the discussions taking place on the European level, particularly concerning third party access and tariffs. In any case, the Dutch Government has indicated that it sees commercial parties as well as public grid companies being permitted to participate in hydrogen import / export and storage in the future. Equally, the Dutch Government's expectation is that public grid operators should only need to be involved in storage in case of market failure .

Development of a hydrogen backbone

In another letter published on 29 June 2022, Minister Jetten published a roll-out plan for the development of a hydrogen grid, which is aimed at connecting the current large industrial clusters in different areas of the Netherlands, developing storage facilities, and connecting the Netherlands with its neighbouring countries. This grid will be largely developed by repurposing existing gas grid pipelines.

Three phases for the roll-out are envisaged at this stage:

Phase 1 (aim 2025-2026)

Phase 1 will focus on connecting the large industrial clusters on the Dutch coast, particularly around Rotterdam and in the Schelde-Delta region and Groningen, with each other, with storage facilities in the Rotterdam area, and potential with pipes for exports to Germany.

Phase 2 (aim 2027-2028)

Phase 2 will focus on connecting industrial clusters in the rest of the Netherlands and expanding connections with neighbouring countries.

Phase 3 (TBD)

The development of phase 3 will depend on the demand for transport and storage capacity. It will look at expansion of the grid by using compression to allow more hydrogen to flow through the grid and by including more existing natural gas pipelines as reliance on natural gas reduces.

The Minister made it clear that the roll-out plan is not set in stone and will be dependent on the appetite in the market. For that reason, HNS has already concluded Expressions of Interests with several companies, which are likely to be a prelude to connection and transmission contracts.

In fact, the Dutch Government has already adjusted the roll-out plan due to the war in Ukraine. The re-routed delivery of gas means that certain gas grid pipelines will continue to be used for gas transmission, and the conversion of these pipelines for the transportation of hydrogen will be delayed as a result.

GRID REGULATION

Although the regulation of hydrogen infrastructure will largely be dictated by the European regulatory framework (which is still in flux), the Minister formulated – on the basis of the existing European legislative proposals – three basic principles for Dutch regulation:

- Hydrogen grid operators must offer services on a non-discriminatory basis to all grid users and under similar contractual conditions.
- Until 2031 Member States have the choice to either introduce negotiated third party access or regulated third party access. In the event that a system of negotiated third party access is introduced up to and until 2031, the ACM must put in place measures to facilitate third party access to hydrogen grids.
- From 1 January 2031, regulated third party access will be introduced on the basis of published tariffs set by the ACM, which will be objective and non-discriminatory.

On 22 December 2022, the House of Representatives adopted a motion calling on the Dutch Government to formulate the regulation of hydrogen transportation infrastructure, including regulated third-party access so that it is clear for commercial parties in what way and under which conditions they may make use of the hydrogen transportation infrastructure that is being developed.

Capex invested in the development of hydrogen grids by private sector developers will eventually need to be covered by these tariffs. However, as there are currently too few shippers for tariffs paid to reimburse the large

amount of investment currently needed to develop the hydrogen grid, the Dutch Government will make available a subsidy up to EUR 750 million, with the possibility of claw-back. This means that at the end of the start-up phase, the subsidy actually needed will be determined, and any excess subsidy paid will be recovered.

As hydrogen grids are already being privately developed, albeit predominantly on a local scale within an industrial cluster, the question arises how these privately developed grids will co-exist with the nationally developed grid.

In the 29 June letter, the Minister distinguishes between three categories of privately developed hydrogen grids:

- **Existing grids, including grids which form part of an existing vertically integrated business:** Due to their small size and geographic coverage, they are not likely to compete with the national grid being developed, and the Minister sees no reason to introduce rules on unbundling, third party access or tariffs for these grids.
- **New geographically delineated hydrogen grids:** As with the electricity and gas market, the Minister foresees that it might be possible to exempt these hydrogen grids from the future regulation. The EU Decarbonisation Package already provides for such exemptions.
- **New large-scale hydrogen grids of which the necessity and added value have been proven:** The Minister will research whether these grids should be technically and functionally integrated with the national hydrogen grid. The possibility of exempting these large-scale grids from the future regulation will depend on the negotiations on the EU Decarbonisation Package. If such large-scale grids are to be integrated, the question arises whether the developers and operators of these large-scale hydrogen grids should be compensated and how. This question has not yet been addressed by the Minister.

Hydrogen quality

For injection as well as offtake of hydrogen into and from the grid, the same quality requirements will apply regarding the minimum hydrogen content and the maximum allowable concentration of trace elements and contaminants. Setting the right quality requirements is a balancing act. Too high standards will create a barrier for access to the grid, while too low standards may decrease the number of interested offtakers because of the high purification costs associated with a lower quality of hydrogen.

KIWA and DNV, the two consulting firms instructed by Minister Jetten to research the optimal quality requirements, recommended a minimum hydrogen purity of 98 mol%, with a re-evaluation after three years on whether minimum hydrogen purity needs to be increased.

However, this recommendation faced criticism from several companies, which are pushing for a minimum hydrogen purity of 99.5%. In particular, the mechanism to re-evaluate the purity requirements after three years was criticised, as this could give rise to significant risks for companies exiting their investments, if the minimum requirement might change in the short term. Also, certain assumptions underlying KIWA and DNV's research results were called into question. For instance, the research seems to assume that 98% hydrogen purity suffices for refining, steel, electricity generation and heating systems, but in practice the requirements for refining and steel vary and a large part of

these sectors require a higher hydrogen purity. In response, the Minister has agreed to commission additional research, which research will assume that the hydrogen quality requirement will be set for a long period.

Guarantees of Origin

After the successful 'HyXchange' pilot in which 18 market participants took part, VertiCer announced in October of last year it is ready to issue guarantees of origin for green hydrogen. As is the case for electricity and gas, the guarantee of origin must be written off when the hydrogen is used. If the hydrogen is used in the transport sector, the guarantee of origin can also be converted into a so-called renewable energy unit (HBE).

The Dutch Government previously announced that it will, for the time-being, only certify green hydrogen, and guarantees of origin are not yet available for blue hydrogen. It has however not ruled out that in the future guarantees of origin will be made available for blue hydrogen.

Guarantees of origin are also not yet available for imported hydrogen. A more international hydrogen certification system is expected in the near future based on European regulations, which are still under discussion. After the successful pilot, HyXchange is now focusing on a spot market simulation to develop an exchange-based hydrogen trading platform.

Dutch implementation of EU Hydrogen Regulations

A substantial part of hydrogen regulation in the Netherlands will come from European legislation. The Netherlands has made significant progress in aligning its regulatory framework with EU directives and strategies related to renewable energy and hydrogen. For example, amongst others, the revised Renewable Energy Directive (RED II), the Hydrogen Strategy for a Climate-Neutral Europe, and the Trans-European Networks for Energy (TEN-E) regulation are key EU directives and regulations that directly impact the Dutch regulatory framework for hydrogen market development, standardization, and infrastructure investment. In recent years, the Netherlands has been actively working on implementing these and taken steps to align national policies. As the Dutch regulatory landscape for hydrogen evolves, it is essential to consider the impact of these key EU policies.

CONCLUSION

Since the publication of the Cabinet Vision on Hydrogen, the regulation of hydrogen in the Netherlands is slowly taking shape. The Dutch Government, however, has much more to do to draft and pass all the legislation necessary for a well-functioning Dutch hydrogen market.

Both the investor appetite and demand for clean hydrogen is now evident, but it seems that the regulatory regime, both in the Netherlands and in the wider EU, still needs to catch up and provide developers and investors with greater certainty before they can make final investment decisions and develop the upstream, midstream and downstream infrastructure to generate, transport and consume green hydrogen.

That said, this is still a fast-paced sector in constant movement. For example, the Dutch Government recently announced an upcoming combined competitive tender for offshore wind and offshore hydrogen generation in the Ten noorden van de Waddeneilanden wind farm zone, expected for early 2024. In this announcement, the Dutch Government indicated that they expect

that the offshore network hydrogen generation will be developed and operated by the Dutch national gas TSO, Gasunie.

This publication does not necessarily deal with every important topic or cover every aspect of the topics with which it deals. It is not designed to provide legal or other advice.

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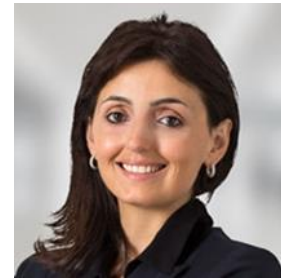
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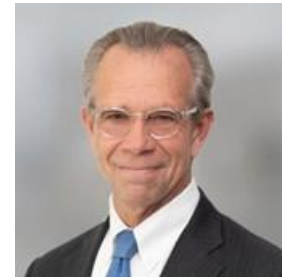
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