International Law Office

December 13 2021

# Green horizons: new regulation for green hydrogen in the Netherlands

Stek | Energy & Natural Resources - Netherlands

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**Introduction**

To address the effects of global warming, the European Union and its member states have agreed to reduce their CO2 emissions. To that end, the Dutch government has adopted the Climate Act, which aims at reducing CO2 emissions by 49% in 2030 and 95% in 2050, compared with levels in 1990. The state also had to reduce its greenhouse gas emissions by at least 25% by the end of 2020, in comparison to 1990 emission levels, pursuant to the *Urgenda* judgment. Both the European Union and the Netherlands consider green hydrogen essential to decarbonising their industrial processes and energy supply in order to achieve their climate goals (for further details please see "The Netherlands as a green hydrogen hub: government presents views on future of hydrogen").

This article provides an overview of the recent developments concerning green hydrogen regulation in the Netherlands.

**Green hydrogen**

Hydrogen can be used to decarbonise industrial processes and the energy sector as it does not emit CO2. It can be used as feedstock, but also to store and transport energy. Hydrogen generated by renewable energy has a zero-emission footprint and is also known as "green hydrogen". However, currently most hydrogen is "grey hydrogen" as it is produced from fossil fuels, the CO2 emissions of which are not captured.

In accordance with the EU Hydrogen Strategy 2020, both the European Union and its member states have to provide a regulatory framework that governs the upscaling of green hydrogen production. They also have to provide financial support to establish a competitive hydrogen market and a well-developed (transnational) hydrogen network.

**Recent regulatory initiatives**

The main recent developments concerning hydrogen regulation in the Netherlands relate to:

- the role of system operators and network companies;
- the new legislation for offshore wind farms in respect of hydrogen production; and
- a temporary financial scheme for upscaling the construction of electrolysers in respect of hydrogen production.

The current government is an outgoing caretaker government. Certain proposed legislative reforms or budgetary decisions pertaining to hydrogen have been put on hold, awaiting a new government. Nevertheless, policymakers are actively preparing for the future role of hydrogen. In the absence of new legislation, the Netherlands Authority for Consumers and Markets (ACM) has provided some guidance on the regulation of hydrogen. In parallel, policymakers are working on a new bill for a new energy act, which will replace the Electricity Act 1998 and the Gas Act, and it will be important for the future of hydrogen in the Netherlands.

***Role of system operators and network companies***

"Network companies" are companies that are part of a network group that also includes a system operator. Network companies are allowed to construct and operate networks for alternative energy carriers, as well as facilitate the transport of alternative energy carriers. System operators, both transmission system operators and distribution system operators, are permitted to perform their duties only under the Electricity Act and the Gas Act, and therefore they are precluded from performing activities concerning hydrogen.

Hydrogen is not a "gas" under the definition thereof in the Gas Act, and therefore, hydrogen production and transport are not governed thereunder.

As clarified by the ACM, the Gas Act enables network companies to:

- construct and operate the pipelines and hydrogen installations;
- provide the transport of hydrogen;
- produce and operate corresponding devices for hydrogen transport, such as compressors; and
- provide the maintenance for hydrogen production installations.

Network companies may not be involved in the production or exploitation of a hydrogen installation, or the trade or supply of hydrogen. However, according to the ACM, network companies are allowed to participate in the generation, trade or supply of hydrogen (or other alternative energy carriers) through minority stakes in entities or joint ventures that do participate in the generation, trade or supply of hydrogen. Further, network companies can participate in the production or supply of hydrogen where these aspects are technically or legally inseparable from the respective infrastructure.

The current legal framework excludes system operators from engaging in activities relating to hydrogen, with the exception of certain

pilot projects.

***Enabling offshore wind energy for hydrogen production***

In order to facilitate the production of green hydrogen by offshore wind farms, the Offshore Wind Energy Act was recently amended to include a new definition of "wind energy", which refers to "energy created after the conversion of wind". This broad definition encompasses all energy carriers that are produced by wind power, varying from electricity to hydrogen or other potential future energy carriers. Further, the amended Offshore Wind Energy Act acknowledges multiple forms of electricity transport from offshore wind farms by introducing the definition of "connection point". A connection point not only includes the connection of a power cable from an offshore wind farm to an onshore or offshore power grid, but also encompasses a direct connection between a power cable of an offshore wind farm and hydrogen production installations, such as electrolysers or distribution installations and hydrogen pipelines that are directly connected to installations that can produce electricity from hydrogen.

***Financial support for construction of electrolysers for green hydrogen production***

The government has currently reserved €750 million for the rollout of a national hydrogen network. A significant amount of the budget is reserved for green hydrogen projects under the Renewable Energy Transition Incentive Scheme (the "SDE++"), whereas €35 million of the budget is destined for green hydrogen projects that are designated as important projects of common European interest. In addition to the inclusion of electrolysers for hydrogen production under the SDE++ scheme, the government has reallocated €252.1 million for the upscaling of green hydrogen production through electrolysis. The total amount of this subsidy will be distributed over one or more tenders. The aim of this scheme is to stimulate the construction of electrolysers in order to gain market experience. Besides this, the scheme also includes corresponding devices for:

- demineralised water supply;
- hydrogen purification and compression; and
- the storage of the produced hydrogen.

This scheme is subject to the approval of the European Commission under the European state aid rules. Given the 2020 SDE++ state aid decision of the European Commission on the Dutch SDE++ scheme, and in view of the EU Hydrogen Strategy 2020, the Dutch government expects that the commission will deem the scheme compatible with the internal market.

**Comment**

The future for hydrogen in the Netherlands is promising. There are various ambitious initiatives from market parties in the Netherlands that are seen as important to decarbonise the industry. This requires large-scale infrastructural developments. In November 2021, the Ministry of Economic Affairs and Climate Policy published a multi-year programme for infrastructure projects of national interest, including national hydrogen transport infrastructure and infrastructure to connect industrial clusters in the Netherlands with those in, for example, Germany.

The current caretaker government has announced that in the future market organisation for the transport of hydrogen in the Netherlands, an important role with respect to a national network for the transport of hydrogen will go to network company Gasunie, a state-owned company. The Gasunie group includes Gasunie Transport Services, the transmission system operator for gas in the Netherlands. A study has been commissioned that shows that its network can be used for the transport of hydrogen after gas has been phased out. Policymakers are currently working on a regulatory framework that will enable, support and align the various market initiatives to meet Dutch climate goals. This framework will be closely aligned with the EU framework, where a new hydrogen package amending, among other things, Gas Directive 2009/73 and Gas Regulation 715/2009, is expected be published in December 2021. The Dutch government, together with parties such as Gasunie, the Rotterdam Port and large industrials such as Shell, hope to give the Netherlands a competitive edge with respect to green hydrogen.

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