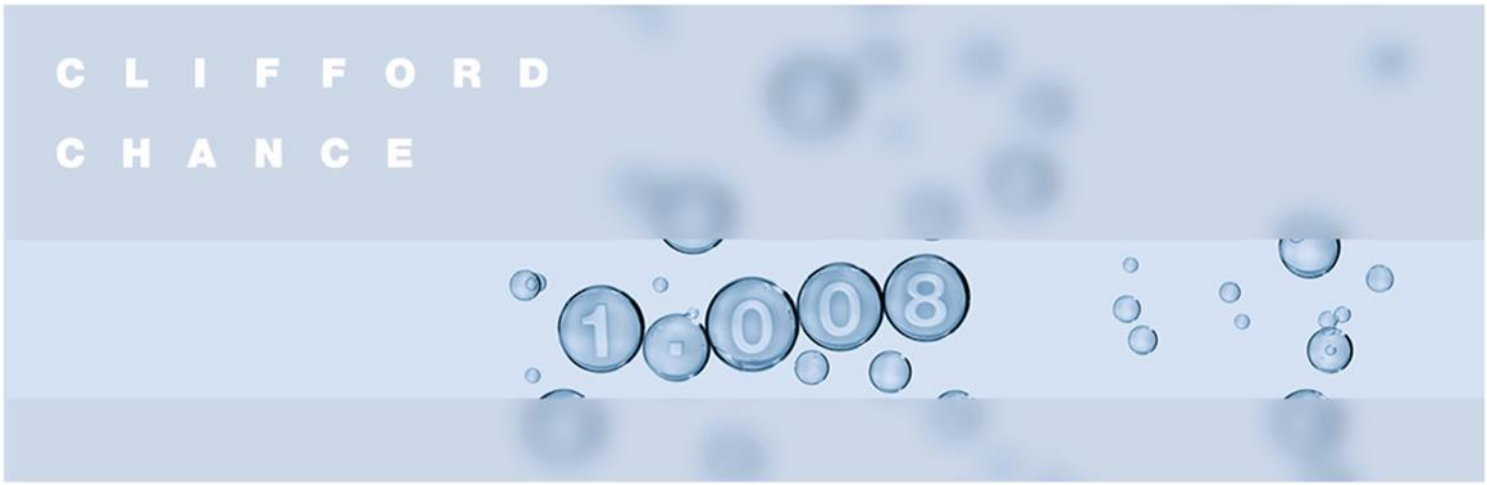

FOCUS ON HYDROGEN: GERMANY IMPLEMENTS FIRST PURE HYDROGEN MIDSTREAM REGULATION AND INTRODUCES DEFINITION FOR GREEN HYDROGEN

On 25 June 2021, the German parliament and upper house passed a transitional regulation for hydrogen transportation networks. The parliament has also defined "green hydrogen" for the purposes of support under the German Renewable Energy Act (EEG).

Midstream – Voluntary opt-in regulation for hydrogen transportation networks

With the amendments to the German Energy Economy Act (*Energiewirtschaftsgesetz* – **EnWG**), Germany is the first EU member state to introduce a dedicated regulation for midstream hydrogen. This transitional regulation will provide a lean regulatory approach for pure hydrogen networks and will give project developers and network operators legal certainty in the short and medium-term. In the longer term, the EnWG will need to be further adjusted to reflect updates to the EU Gas Directive. A first draft of the EU Directive is expected to be published late 2021.

Until then, the transitional regulation focuses on the following three areas which are regarded as critical for scaling-up the hydrogen economy:

- **Expanding existing hydrogen infrastructure** which is currently limited to certain customers to enable third party access.
- **Facilitating the repurposing of gas networks** which is regarded as the most cost-effective way to transport hydrogen over long distances.
- Clarification of the applicable law for the approval of **new hydrogen infrastructure** which will be required to overcome distances where there is no capacity for repurposing.

Two separate regulatory frameworks

The regulatory framework will only apply to networks solely used for the transport of hydrogen. In contrast, in situations where hydrogen is injected into natural gas pipelines (blending), which is already possible under certain circumstances, the existing regulations for natural gas networks apply.

Key issues

- Hydrogen network regulation will be on a voluntary basis (opt-in).
- Ownership unbundling of hydrogen network operators.
- Third party access to the networks will be on a negotiated basis.
- Separate network tariffs for hydrogen and natural gas networks.
- Facilitated rules for network tariff calculation in comparison to network tariffs for natural gas.
- Facilitating the repurposing of existing natural gas infrastructure: Permissions remain in place and apply to hydrogen infrastructure with a notification requirement.
- Rights of way granted for natural gas infrastructure remain in place and apply to hydrogen infrastructure.
- Full EEG levy exemption for electrolysers producing green hydrogen provided there is simultaneous generation and consumption of the renewable electricity.
- Annual limit on EEG levy exemption of 5,000 full utilisation hours.

Opt-in regulation

Hydrogen network operators (**HNOs**) may, but are not obliged to, declare their hydrogen networks to be subject to the proposed opt-in regulation. This will allow them to pass through the costs of the network to customers via network tariffs and to secure a sufficient return on equity. The HNOs must make the declaration to the Bundesnetzagentur (**BNetzA**), the Federal Network Agency for electricity, gas, telecoms, post and railway. The declaration must be made in respect of the entirety of the HNO's network and without a time limit, and the BNetzA must confirm whether the hydrogen infrastructure is needed. This is deemed to be the case where HNOs receive funding under the national hydrogen strategy. The following rules apply:

- **Ownership unbundling**: HNOs must ensure that the network operation is independent from the production, storage and distribution of hydrogen. Therefore, HNOs are prohibited to own, construct or operate such facilities.
- **Separate accounting**: In particular where HNOs are involved in business activities other than the operation of hydrogen networks, their hydrogen network activities must be accounted for and documented separately in order to avoid cross-financing of other business activities by connected network users. This includes business activities related to the operation of a natural gas grid. As a consequence, network tariffs for natural gas and for hydrogen must be separated.
- **Network access**: HNOs are required to provide third parties access to the hydrogen network on individually negotiated terms which must be appropriate and non-discriminatory. Further details about network access and the relevant competences of the regulatory authorities will be covered in a separate ordinance of the German government, but this has not yet been published.
- **Network tariffs**: Except for the Ordinance on Incentive Regulation (*Anreizregulierungsverordnung*), essentially the same rules governing network tariffs for natural gas will apply to tariffs payable by customers of HNOs. Accordingly, terms and tariffs for access to hydrogen networks must be designed in an appropriate, non-discriminatory, and transparent manner. In calculating network tariffs, the HNOs' costs will be determined annually on the basis of the expected costs for the following calendar year, taking into account also the difference between the revenues generated and the actual costs from previous years. These costs are set or approved by the BNetzA. Further details will also be governed by a separate ordinance of the German government, but similarly this has not yet been published.

Permitting for new infrastructure and repurposing

Generally, the same permitting rules for the construction, change and operation of natural gas networks, together with the technical standards, will also apply to hydrogen networks.

Where existing natural gas networks are **repurposed** for the transportation of hydrogen, the new regulation introduces the following:

- Approvals for **existing** natural gas infrastructure remain in place for the transportation of hydrogen and will only require a notification to the responsible authority if repurposed. The authority will have eight weeks

to object on technical/safety grounds. However, this will not apply where changes to single facilities of the relevant infrastructure require an approval under the Federal Immission Control Act (*Bundesimmissionsschutzgesetz*).

- Where natural gas networks need to be made **hydrogen-ready** prior to repurposing, such changes also require only a notification, provided that these changes qualify as "insignificant changes". In that case, the conduct of a new environmental impact assessment will not be required.

Rights of way

The framework caters for significant relief for network operators who intend to repurpose natural gas infrastructure or to construct and operate additional hydrogen infrastructure alongside existing natural gas infrastructure. Where a right of way has been granted to the operator of a network for natural gas, any such contract or easement shall be construed such that it will also allow for the transportation of hydrogen.

Where concession agreements with local municipalities provide for rights of way, these will also apply for hydrogen infrastructure. Where municipalities are not obliged to enter into concession agreements, the right of way may not be granted on worse terms than under existing terms for natural gas.

Update on upstream – Support for hydrogen production under the EEG and the definition of green hydrogen

In December 2020, new mechanisms and amendments to the existing framework of the EEG (the "**EEG 2021**") were introduced to support investments in renewable energy generation. These include a reduction of the EEG levy for hydrogen producers of up to 85%. Producers of green hydrogen will be fully exempted from the EEG levy. However, "green hydrogen" was not defined.

Recap: Support for hydrogen production – EEG levy

The reduction of the EEG levy introduced by EEG 2021 distinguishes between a technology neutral production of hydrogen and the production of green hydrogen.

- **Technology neutral hydrogen**: Energy intense undertakings producing technology neutral hydrogen can benefit from a reduction of the EEG levy up to 85%, but not to less than 0.1 ct. per kWh. The electricity costs for the production of hydrogen must form the greatest part of the undertaking's gross value added.
- **Green hydrogen**: Undertakings producing green hydrogen can benefit from a complete exemption from the obligation to pay the EEG levy. In order to provide for sufficient incentives during the hydrogen market ramp-up phase , the reduction is only granted for electrolysers which are commissioned before 1 January 2030.

Update: Definition of green hydrogen

The definition of green hydrogen setting out the eligibility criteria for the exemption from the EEG levy has been specified by the German government in the Ordinance to the Renewable Energy Act (**EEV**). In order to be deemed "green", hydrogen has to be produced **electrochemically** (i.e. pyrolysis and

other forms of hydrogen production are excluded) and the electricity used has to fulfil the following criteria which need to be sufficiently proven:

- Electricity stemming from **renewable energy sources**;
- **Minimum 80%** of the electricity from renewable power plants located in the **German price zone**; and
- Electricity used does **not receive any support** under the support schemes of the EEG or of the CHP Act.

The EEV sets high requirements for the electricity from renewable resources, as it requires that the generation and use of electricity for the production of hydrogen must be simultaneous. For this to be proven, the EEV requires the following:

- Where electricity has been transported **through a network**, certificates of origin (*Herkunftsnachweise*) need to be presented which contain, in particular, information on the simultaneity of generation and use of the electricity from renewable resources.
- Where electricity has been provided **directly** to the electrolyser, corresponding measuring facilities are required to show that the electricity used for the generation of hydrogen has been generated in the same quarter-hour.

The exemption is limited annually to the first 5,000 full utilisation hours of the relevant generation facility in a calendar year. This limit has been heavily criticised by certain stakeholders in the energy sector.

Furthermore, the definition of green hydrogen under the EEV (and consequently the exemption from the EEG levy) applies as of 1 January 2022, but not before the European Commission's state aid approval is obtained which is currently pending and expected to be issued by the end of 2021.

Outlook

The Federal Ministry for Economic Affairs and Energy is required to present a concept for the further development of the regulation of hydrogen transportation networks by 30 June 2022. By then, the first draft of the European Gas Directive may have been published and will need to be taken into account of in the future draft regulation. The further development of a long term regulatory framework remains to be seen.

It will be particularly interesting to see whether the EU Commission follows the path of the German government and separates hydrogen and natural gas regulation. Several stakeholders in Germany, in particular the transmission system operators, had favoured a common regulatory framework for hydrogen and natural gas, by expanding the natural gas grid regulations to hydrogen grids. As a consequence, the costs of new hydrogen assets and the refurbishment of natural gas grids would have become part of the overall costs of gas grid operators. Since natural gas network users would then effectively be cross-subsidising the hydrogen network but not using it, it was argued that this would mean an infringement of EU law so that this approach was rejected. It remains to be seen whether the EU Commission will follow this reasoning, or otherwise will adopt a different approach, taking into account the fact that subsidies will be needed to avoid prohibitively high initial network tariffs for hydrogen grids.

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ABOUT

Focus on Hydrogen is a Clifford Chance briefing series covering hydrogen-related developments globally. 1.008 is the standard atomic weight of hydrogen.

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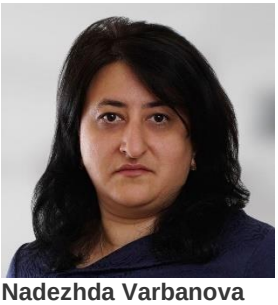

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