

# H2 VOR ORT

## The impact of the EU Gas Market Package on the German energy transition

The current geopolitical and climate policy situation requires the rapid use of hydrogen in all sectors. The unbundling rules proposed by the European Commission in the Hydrogen and decarbonised gas market package prevent a rapid transformation.

In view of the climate targets, but also because of Russia's war of aggression against Ukraine, Germany must quickly decarbonise and diversify its energy supply. The conversion of existing gas networks into hydrogen networks is an economically favourable option that must be used for the transformation towards climate neutrality. Largely in municipal hands, Germany has an underground gas distribution system with a length of over 550,000 km. The amount of energy supplied to end consumers via this distribution infrastructure exceeds the energy distributed via the electricity grid by far. It is the backbone for supplying industry, commerce and private households and can hardly be replaced. Therefore, after technical upgrading, the gas distribution system is ideally suited to bring hydrogen directly to consumers and thus meet the climate targets in all sectors.

The draft<sup>1</sup> of the European Commission's new directive on the internal gas market now threatens to create an almost insurmountable obstacle on the way to a Germany-wide hydrogen supply. The proposed, additional unbundling requirements unnecessarily tighten up functioning and established rules. Unbundling regulations are primarily supposed to balance out natural monopoly positions and to develop a competitive market.

Electricity and gas networks represent a «natural monopoly», as it makes no economic sense to build them multiple times. Therefore, the network operator must ensure equal treatment of all energy retail companies operating in its network area, including its affiliated retail department, which must not be given preferential treatment. In Germany, with respect to companies of a certain size, the network operation must be formally organised in a separate company (so-called «legal unbundling»). In Germany, the existing unbundling regulations in the electricity/gas sector work very well – the energy retail market is highly competitive and characterised by low margins. The wave of insolvencies of retail companies last autumn in the wake of rising gas prices is an impressive example.

For this reason, it would be ideal for Germany to extend the existing unbundling requirements for gas to hydrogen. This is also the position of the German Bundesrat in its resolution<sup>2</sup> of 8 April 2022. In doing so, distribution system operators can optimally complete the transition towards a hydrogen economy by coordinating between the demand situation of consumers (investments in new manufacturing plants by industrial companies, as well as H<sub>2</sub>-ready heating systems for private or commercial consumers) and the conversion of pipelines to hydrogen at the TSO level.

Making hydrogen usable for everyone via the gas distribution networks

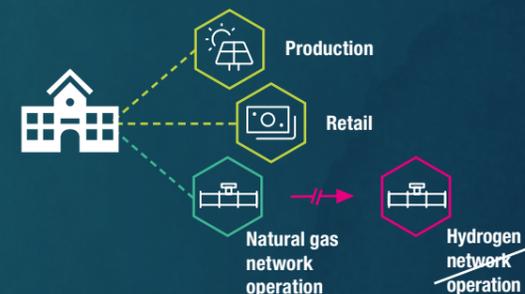
However, the unbundling rules proposed in the gas market directive would require two additional levels of unbundling with respect to hydrogen. This approach fails to take existing structures into account and would at best be appropriate for the development of a completely new infrastructure («greenfield approach»). Obstruct-

ing the conversion of the existing gas infrastructure to hydrogen while at the same time building a new separate hydrogen infrastructure would be highly counterproductive in economic terms and would also make it much more difficult to achieve the climate targets.

The following unbundling provisions are proposed in the gas market directive for hydrogen networks:

### «Vertical» ownership unbundling

Hydrogen network operators are not allowed to have the same owner (even indirectly) as companies that operate energy sales or production. However, almost all energy utilities in Germany, especially the municipal utilities, are organised in this form.



### «Horizontal» legal unbundling

If the owner is not involved in energy production or sales, a gas network operator may still not be a hydrogen network operator at the same time. The operation and the assets must be organised in a separate company, which may, however, belong to the same owner (also indirectly).



<sup>3</sup>This also applies to hydrogen sales and production.

- ▶ These provisions could only be implemented without problems in a few European countries. In Germany, vertical unbundling would affect virtually every distribution system operator and especially the German municipal utilities.
- ▶ For a **vertically integrated company such as a municipal utility**, the **only long-term options** left under the current proposal of the gas market directive would be the following:<sup>3</sup>

### Variant I: Sale of the gas network company / the network operation



A simple but drastic step to comply with vertical ownership unbundling would be to sell its own gas network operating company or the gas network operation business with all assets to a third party that is neither involved in energy production or retail. At the moment of conversion to hydrogen, this third party would have to transfer affected grids to a new hydrogen network operating company, which it would, however, be allowed to own. In the case of municipal utili-

ties, this sale would effectively amount to privatisation of municipal property. In any case, the revenues from gas network operation, which are usually a relevant part of municipal budgets, would be permanently lost. It is not expected that the sale price would provide sufficient compensation. Alternatively, the business areas of energy production and retail of gas and hydrogen could also be sold to an independent third party.

<sup>1</sup> COM/2021/803: final Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules for the internal markets in renewable and natural gases and in hydrogen

<sup>2</sup> Bundesrat - Drucksache 56/22

<sup>3</sup> The so-called ITO (Independent Transmission Operator) model is not considered in more detail here due to the time limit until 2030.

## Variant II: Sale of converted hydrogen networks



It would also be possible to sell network sections to a third party after their conversion to hydrogen. Since network conversions can take a long time, this would be a very costly variant and would ultimately lead to the same result as the first variant. From 2045

onwards, the two variants only differ if certain network sections are operated with climate-neutral methane such as biomethane instead of hydrogen.

## Variant III: Use of an Independent System Operator (ISO): Outsourcing of operation and network development



The gas market directive also proposes a so-called ISO model, in which an independent network operator operates the H<sub>2</sub> network, but network ownership remains with the original owner. In this way, the ownership unbundling requirements can be met. **However, this would only be an option for existing hydrogen networks at the time the Gas Market Package comes into force!**

Since there will hardly be any pure hydrogen networks in Germany at that time, this model is irrelevant for Germany. Even if this model would be made permanent, it would have negative

effects from a municipal perspective: in addition to network operation, the independent hydrogen network operator would also be responsible for network development and thus have the power to decide on network investments without being bound to a financial plan or having to take debt limits into account. It could, therefore, impose investment decisions on the network owner, which would have a strong influence on its financial situation. In the case of municipal utilities, this influence would also affect public finances, which would be potentially problematic in terms of municipal law.

## Variant IV: No transformation towards hydrogen



The energy utility's last option would, therefore, be not to convert the gas network towards hydrogen. Except in cases where large quantities of biomethane can be produced locally or in the event that large quantities of climate-neutral methane are imported to Germany, a progressive reduction of gas networks until complete decommissioning in 2045 would be the consequence.

This would mean that green hydrogen would not be available for industry, electricity generation, commerce or households in the respective network area, and decarbonisation would have to take place entirely by other means. As a Germany-wide approach model, this would fundamentally damage the energy transition and threaten Germany as a future business location, given the large energy demand of Germany.

## THE PLANNED REGULATIONS HAVE CLEAR CONSEQUENCES:

### 1. Assets must be sold after their transformation towards hydrogen.

- There is no incentive for gas DSOs to invest into the hydrogen transformation.
- The uncertainty leads to delays in the transition or prevents it entirely.

### 2. Municipal budgets are weakened in the long term.

- Gas networks can no longer function as a reliable source of municipal income in the future.
- Privatisation of municipal property (sale to third parties) would be the consequence.

### 3. Inefficient double structures must be established.

- Should the transformation take place anyway, the resulting double structures will certainly require more specialised personnel, resulting in higher costs and thus higher network tariffs.
- Transition problems in terms of network operation would likely occur.

- ▶ An urgently needed instrument for the decarbonisation of German municipalities would be de facto prevented.
- ▶ The energy transition is being delayed.

## ▶ Our proposal: Enable the transition within the distribution network companies



In our view, the best possible solution is to enable the transformation of gas to hydrogen networks within the existing network companies without introducing additional unbundling rules. The existing unbundling rules for gas have led to a highly competitive, functioning market in Germany. This will not change in case of a joint

network operation with hydrogen and will also be directly transferred to the hydrogen market. Without the additional hurdles, distribution network operators can focus on a fast transformation and promptly put the currently emerging transformation plans into action (see H2vorOrt: [Gas distribution Transformation Plan \[GTP\]](#)).

## Conclusion



The unbundling rules for hydrogen network operators being discussed at the European level are a significant problem for the transformation of the German energy supply.

**We must act now before the European Union creates rules that massively hinder the energy transition in Germany.**

### About H2vorOrt



The "H2vorOrt" initiative is a collaboration of 48 distribution grid operators of the Deutscher Verein des Gas- und Wasserfaches (DVGW - German Technical and Scientific Association for Gas and Water) working with the Verband kommunaler Unternehmen (German Association of Local Public Utilities, VKU), whose joint objective is to turn more than 550,000 km of gas distribution infrastructure into a net zero system. The project partners have joined forces to investigate the issue of how to implement a regional, reliable supply of net zero gases across the Federal Republic of Germany in concrete terms. Hydrogen in particular can play a crucial role in achieving all climate goals without compromising economic efficiency.