

## **Second Dutch-German Forum on Comparative and European Energy Law: A Dutch-German Hydrogen Valley**

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On October 26th 2023, the Second Dutch-German Forum on Comparative and European Energy Law (FCEEL) took place at the University of Cologne under the title „A Dutch-German Hydrogen Valley – The Netherlands and North Rhine-Westphalia (NRW) as a Pioneer Region for the European Hydrogen Economy“. The aim was to bring together participants from science, practice and politics to discuss the opportunities and prerequisites but also the difficulties of establishing a German-Dutch model region for the hydrogen economy. It was organized by Assistant Professor Dr. Max Baumgart (Tilburg Institute for Law, Technology and Society – TILT) and Prof. Dr. Torsten Körber (EWIR).

In their opening remarks, the three initiators of the FCEEL initiative Baumgart (TILT), Körber (EWIR) and Prof. Dr. Lavrijssen (TILT) emphasised the opportunities of an increased German-Dutch cooperation in the development of a successful hydrogen economy in the German-Dutch Rhine region. They highlighted the region's unique potential for establishing a powerful hydrogen model region in Europe. Hence, an ongoing close economic, political and scientific cooperation between the two regions is essential.

### **1. Block 1: H2-transformation – Economic and political aspects**

Dr. Andre Wolf (Centres for European Policy Network) and Dr. Aad Correlje (Associate Professor, Delft University of Technology) started the presentation series with the topic „H2-transformation – Economic and political aspects“. First, Wolf spoke about „The potential for interregional integration in the hydrogen value chain“. After a brief introduction on the potential of green hydrogen in the industry, he gave an overview of the current production capacities of green hydrogen in Europe and emphasised that the German-Dutch Rhine region is one of the largest producers in the EU. In the future, there will be a few regions in Europe where the costs of producing green hydrogen are comparatively favourable. One of these areas is the North Sea region of the Dutch coast, due to the large potential for wind energy. In combination with the large industrial plants along the Rhine, existing pipelines in the region and a high level of engineering expertise, the hydrogen model region could be a great success. However, government investment along the entire value chain is still required, especially in the market ramp-up phase. In addition to promoting the development of a sales market for green hydrogen, producers and network operators must also be certain that their investments will pay off. Only in this case they will expand their capacities. Correlje, as the second speaker, then turned his attention to the topic of „ [t]he (geo)political context and the economic coordination in regard to the value chain and infrastructure management“. He began by

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discussing the difficulties arising from the reorganisation of the energy system. This would result in new sources of risk and evaluation and decision-making patterns for consumers, suppliers and the public sector. Difficulties would also arise in the global coordination of a switch to green hydrogen. Different interests, values and priorities clash here, although they are mutually dependent. To overcome this, it is important to negotiate goals, values and interests and to create an effective governance and contractual structure. Correlje also referred to the findings of the institutional and transaction cost economist Oliver E. Williamson and examined the role of the state in the hydrogen transformation. After these abstract insights, the speaker then went on to discuss today's challenges and conditions. Overall, the hydrogen economy is still in the early stages of development. Mechanisms for worldwide pricing, contract design and infrastructure management need yet to be found. The presentations were followed by a lively discussion with the participants and speakers. In addition to in-depth questions about the presentations, the issues discussed included the effects of (stricter) CO<sub>2</sub> pricing on the duration of the ramp-up of a hydrogen economy, the importance of the political perspective in view of the increasing global conflicts and the realisation that a hydrogen ramp-up cannot be realised without international cooperation due to the global distribution of resources and Europe's dependence on imports, even in the long term.

## **2. Block 2: H<sub>2</sub>-use case and the legal framework**

In the second block, Yola Traum (Becker Büttner Held Rechtsanwälte Wirtschaftsprüfer Steuerberater PartGmbH) and Dr. Christian von Halen (thyssenkrupp Steel Europe AG, Head of Legal Technology & Transformation) spoke about „H<sub>2</sub>-use case and the legal framework“. Traum gave an overview of the „[l]egal framework for a hydrogen valley in the Netherlands-NRW region, from the EU to the region“. She presented the EU's strategy for green hydrogen and climate neutrality by 2055 and the close cooperation between NRW and the Netherlands. Then she outlined the European legal framework for hydrogen projects and addressed in particular rules for energy infrastructure investments (TEN-E Regulation), for state aid (CEEAG, GBER, to promote IPCEI), as well as the legislative targets for renewable hydrogen for industry and the transport sector (RED). She also explained the legal criteria for when hydrogen is considered „renewable“ hydrogen. Finally, she outlined the key recommendations of Hydrogen Europe's position paper for Hydrogen Valleys in Europe.

The next speaker, von Halen, spoke from an industry perspective about the development of a sustainable hydrogen economy and addressed „[c]ontractual questions of hydrogen value chains“. He began by briefly presenting the plans and intentions of thyssenkrupp Steel Europe AG on its path to climate neutrality. He emphasised that thyssenkrupp plans to produce climate-neutral steel by 2045 and wants to convert blast furnaces and coking coal to DR systems and green hydrogen. This would result in an enormous demand for hydrogen, approx. 25.6 TWh from 2030 on. In the initial period, this demand cannot be met exclusively with green hydrogen, so that other technologies, such as blue hydrogen, are also required as

bridging technologies. In addition, the considerable investments required to maintain international competitiveness could only be realised with government investment. Von Halen then addressed the challenges of contract design to achieve these transformation goals. He outlined the importance of a risk analysis as the first stage of contract design and analysed whether there was a first mover advantage or disadvantage in this context. In conclusion, he emphasised that reliable framework conditions and predictability are important factors for the industry to ensure that the transition to climate-neutral production both gets underway and is driven forward to the desired extent.

In the ensuing discussion, there was a lively debate particularly on the extent to which Germany remains internationally competitive in producing steel. Even if the production of green steel in Germany becomes cheaper than the production of conventional steel in the future, this is primarily due to the high CO<sub>2</sub> taxes in Europe and not due to a significant reduction in the cost of producing green steel. This only artificially low-cost production is not necessarily to be expected in other countries. The question of what lessons could be learnt from the regulation of the gas market for the hydrogen market to be developed and how the role of the monopolistic hydrogen network operators should be assessed was also discussed.

### **3. Block 3: H<sub>2</sub>-grids and policy aspects**

Block 3 focussed on H<sub>2</sub> networks and political aspects. The first speaker was Prof. Dr. Phillip Fest from the Ministry of Economic Affairs, Industry, Climate Protection and Energy of the State of NRW, who spoke on the topic of „Challenges and Solutions of Hydrogen Infrastructure“, providing a NRW perspective on the development of hydrogen infrastructure. He began by outlining the various political and technical reasons for the network transformation. Building on this, Fest reported on the status of planning and work on the hydrogen core network. At the same time, the electricity grid also needs to be expanded and grid connections for offshore plants should be realised via connection lines. Here too, Fest provided insights into the expansion status. Overall, the respective expansion should lead to a transformation before 2032. To meet the associated challenges, Fest proposed solutions: Firstly, the necessity of a hydrogen infrastructure project should not have to be proven again in every administrative procedure. Secondly, it should be easier to convert gas pipelines to hydrogen pipelines using the notification procedure in accordance with Section 43 f of the Energy Industry Act (EnWG). Thirdly, the state of NRW hired additional employees for the processing of authorisation procedures. Finally, the government of NRW is committed to further digitalisation. In summary, Fest explained that NRW, as an energy and industrial state, has a considerable and disproportionately high share of the challenges of the hydrogen transformation in all sectors. Nevertheless, NRW is a „frontrunner“ in the development of an H<sub>2</sub> infrastructure, as it has been involved in creating pioneering framework conditions for the planning and authorisation process.

Bas Pulles, Project Director Delta Rhine Corridor, Ministry of Economic Affairs and Climate Policy, then spoke on the topic of „Delta Rhine Corridor – Cross-border infrastructure

connecting supply and demand“ and reported on the Dutch government's perspective on a Dutch-German hydrogen value chain. During the energy transition, the Netherlands must switch to various energy sources such as offshore wind and solar energy, nuclear power or hydrogen, as well as carbon capture and storage. This would result in the need for a new energy infrastructure. Accelerating projects is now particularly important. International cooperation is a key building block here. This could lead to political support at all levels, favourable political framework conditions for H2 and CO2 and generally close coordination of planning between neighbouring countries. Cross-border cooperation should enable the decarbonisation of industry through tailor-made approaches, an expansion of hydrogen infrastructure and industry as well as a boost to the European hydrogen market and a connection of CO2 storage facilities to the domestic industry, especially for the import of German CO2 into the Netherlands.

The presentations by Fest and Pulles led to a lively discussion between the speakers and the audience. In particular, the role of the public sector after the realisation of the Delta Rhine Corridor project in 2028 was discussed as well as possible solutions for shortening public planning and construction projects. The speakers also agreed on the last point that shortening timeframes, for example due to European legal requirements, is rather counterproductive and that the quality of the planning process must be maintained at all levels, from the application to the final decision by the authorities.

#### **4. Summary**

In their closing remarks, Körber and Baumgart concluded that the conference contributions showed that there is indeed a high potential for the Dutch-German region to take a central role in the ramp up of the EU hydrogen market. The law will not only be used as a control instrument but will enable hydrogen markets by setting the right incentives. Like the First FCEEL in Tilburg, the Second FCEEL was very well attended both on-site and online via Zoom.

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