

**A Dutch-German Hydrogen Valley - The Netherlands and North Rhine-Westphalia as a Pioneer
Region for the European Hydrogen Economy
Second Dutch-German Forum on Comparative and European Energy Law (FCEEL)
Conference report**

On 26 October 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 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.

The “Dutch-German Forum on Comparative and European Energy Law” (FCEEL) is a platform for discussing recent developments in energy law, which was created in 2022 by the Tilburg Institute for Law, Technology and Society (TILT, Dr. Max Baumgart and Prof. Dr. Saskia Lavrijssen) and the Institute for Energy Law at the University of Cologne (EWIR, Prof. Dr. Torsten Körber, LL.M. Berkeley). The institutions co-operate with other energy institutes and other chairs for energy law. The University of Rotterdam, Chair for Public Law and Sustainability (Prof. Dr. Leonie Reins), the Groningen Centre of Energy Law and Sustainability, Faculty of Law, University of Groningen (Dr. Lea Diestelmeier and Dr. Ruven Fleming), the Institute for Mining and Energy Law Bochum (IBE, Prof. Johann-Christian Pielow), and the Düsseldorf Institute for Energy Law (DIER, Prof. Dr. Charlotte Kreuter-Kirchhof), are members of the initiative.

The FCEEL initiative contributes to shaping energy law in the light of achieving the European and national climate goals as well as European energy sovereignty by bringing together experts from academia and practice in a cross-border initiative. The FCEEL connects two economically and culturally intertwined European regions: the Netherlands and the German state of North Rhine-Westphalia, thus strengthening the already close academic ties. The forum meets for an annual conference, which takes place alternately in Tilburg and Cologne.

In their opening remarks, the three organisers Prof. Dr. Körber (EWIR), Prof. Dr. Lavrijssen (TILT) and Dr. Max Baumgart (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.

A. 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 presentations with the topic "H2-transformation - Economic and political aspects".

First, Dr. 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 off 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.

Dr. Aad Correlje then turned his attention to the topic of "The (geo)political context and the economic coordination in regard to the value chain and infrastructure management". He began by 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. Dr. Aad 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) CO2 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.

B. Block 2: H2-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 "H2-use case and the legal framework".

Ms Traum gave an overview of the "Legal 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 North Rhine-Westphalia and the Netherlands. She then 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, Dr. von Halen, spoke from an industry perspective about the development of a sustainable hydrogen economy and addressed "Contractual 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. 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 in particular could only be realised with government investment. He 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 particularly lively debate on the extent to which the Germany remains internationally competitive as a steel location. 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 CO₂ taxes in Europe and not 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.

C. Block 3: H2-grids and policy aspects

Block 3 focussed on H2 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 North Rhine-Westphalia, who spoke on the topic of "Challenges and Solutions of Hydrogen Infrastructure", providing a North Rhine-Westphalian perspective on the development of hydrogen infrastructure. He began by outlining the various in particular political and technical reasons for the network transformation. Building on this, Prof. Dr. Fest reported on the current status of planning and work on the "Hydrogen Core Network". In parallel and at the same time, the electricity grid, in particular for offshore plants, should also be expanded. Here too, Prof. Dr. Fest provided insights into the current expansion status. Overall, the respective expansion should lead to a transformation before 2032. In order to meet the associated challenges, Prof. Dr. 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 43f of the Energy Industry Act (EnWG). Thirdly, the state of North Rhine-Westphalia hired additional employees for the processing of authorisation procedures. Finally, the North Rhine-Westphalian state government is committed to further digitalisation. In summary, Prof. Dr. 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 H2 infrastructure, as it has created 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. In the course of 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 Prof. Dr. Fest and Bas 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.

D. Summary

Like the 1st FCEEL in Tilburg, the 2nd FCEEL was very well attended both on-site and online via Zoom. The participants and speakers continued their exchange about the insightful presentations and discussions during the lunch break and at the convivial conclusion in the foyer with a buffet and drinks at the invitation of the *Verein zur Förderung des Instituts für Energierecht e.V., Cologne*.

Information on the FCEEL and the speakers' presentations can be found at:
<https://ewir.jura.unikoeln.de/en/infobereich/fceel>