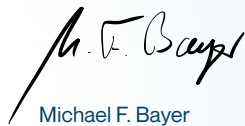


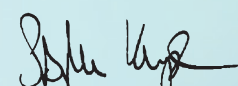
This position paper was co-authored by  
the following partners:



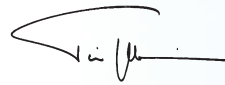
Michael F. Bayer  
Hauptgeschäftsführer IHK Aachen



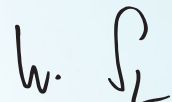
Ulla Thönnissen  
Geschäftsführerin Region Aachen  
Zweckverband



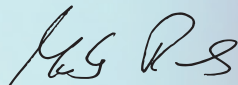
Sibylle Keupen  
Oberbürgermeisterin der Stadt Aachen



Dr. Tim Grüttemeier  
Städteregionsrat StädteRegion  
Aachen



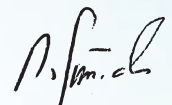
Wolfgang Spelthahn  
Landrat Kreis Düren



Markus Ramers  
Landrat Kreis Euskirchen



Philipp Schneider  
Allgemeiner Vertreter Kreis  
Heinsberg



Dieter Spürck  
Bürgermeister Kolpingstadt Kerpen



Sven Pennings  
Geschäftsführer AGITmbH



Peter Bertholet  
Director at Stadsregio Parkstad  
Limburg



Dr. Dirk Petersohn  
Projektleiter IN4climate.RR



Dipl.-Biol. Christoph Zeiss  
Projektleiter IN4climate.RR



Loek Radix  
Executive Director Chemelot

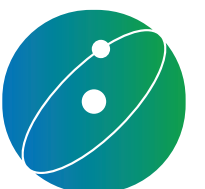
# Connecting Parkstad Limburg and the Rhenish Mining Region to the Delta Rhine Corridor:

## A Catalyst for Sustainable Economic Transition

Industrie- und Handelskammer  
Aachen



HYDROGEN HUB  
AACHEN





## Abstract

This position paper highlights the mutual interest of the Dutch region of Parkstad Limburg and its neighbouring German regions of Aachen and the Rhenish Mining Region (Rheinisches Revier) in establishing a connection to the Delta Rhine corridor, which is currently being developed. The proposed pipeline infrastructure will enable the transportation of (green) hydrogen, and other gases like CO<sub>2</sub> and ammonia, from (and to) the North Sea and the Port of Rotterdam, providing crucial support for the economic transition of the Aachen Region and the Rhenish Mining Region (lignite mining region between Aachen-Monchengladbach-Cologne). With a significant dependence on fossil fuels, such as lignite and natural gas, the successful implementation of hydrogen-based solutions is essential for a sustainable and secure energy supply of the area. Conservative estimates project a minimum demand of 10 TWh per annum<sup>1</sup> of hydrogen for industrial uses alone, underscoring the urgent need for direct access to substantial hydrogen supplies.

<sup>1</sup> Estimation based on the research on energy demands per annum in the Aachen Region carried out by the Chamber of Industry and Commerce Aachen and BET, 2022-2023.

## Introduction

The Dutch region of Parkstad Limburg and the neighbouring German regions of Aachen and the Rhenish Mining Region are poised to embark on a transformative journey towards a sustainable future. Recognizing the imperative of reducing greenhouse gas emissions, the promotion of clean energy sources, such as green hydrogen, has emerged as a key priority. This position paper aims to advocate for the integration of these regions into the Delta Rhine corridor, a pipeline infrastructure designed to supply (green) hydrogen to industry clusters like Chemelot in Geleen. Such integration would enable a seamless transition away from fossil fuels, unlock economic potential, and facilitate a collaborative cross-border effort towards decarbonization.

## The Role of Hydrogen in Economic Transition

The Aachen Region and Rhenish Mining Region with 2.5 million inhabitants rely heavily on fossil fuels, particularly lignite and natural gas, to fuel their power plants and energy-intensive industries, such as glass, aluminium, brick, and paper production. However, the region is committed to phase out lignite till 2030 and faces the challenge to establish a secure, sustainable, and climate friendly energy supply. This transition is paramount to sustain added value and economic growth. A survey of energy demands for industrial purposes in the Aachen Region conducted on behalf of the chamber of industry and commerce among its 84.000 members has identified an annual natural gas demand of 1.5 TWh in the City Region Aachen and the district of Heinsberg alone – the parts of the region bordering directly to the Netherlands. The gas demand that needs to be replaced by renewable sources in the neighbouring districts of Düren and Euskirchen amounts at least to a further 3.6 TWh per year. Green hydrogen offers a promising solution, as it can be and used as a versatile, low-carbon energy carrier. The Delta Rhine Corridor could provide direct access to a substantial amount of hydrogen and enable the decarbonisation of these industries. Further hydrogen demands are foreseeable in heavy duty transport and public transport, including local trains: All public transport operators in the region already deploy fuel-cell buses or are in the process of ordering fuel-cell buses. The city of Kerpen in the Rhine-Erft District will be the hub for FC-Buses running in the district, in Düren the local railway network is switching to hydrogen trains and more and more logistics and transport companies are aiming to deploy fuel-cell trucks. A direct connection to the Delta Rhine Corridor could accelerate these developments and offer a consolidated hydrogen supply for these projects.

In addition to the economic importance on the German side, there is also a growing demand of hydrogen on the Dutch (Limburg) side. The total volume of hydrogen demand that may arise from Limburg's larger companies is likely to be 0,6 TWh per year, with a maximum of 2,6 TWh per year. These figures do not include the Chemelot Industrial Park. Chemelot's hydrogen demand is estimated at 200 to 240 ktons (7,8 TWh to 9,5 TWh) per year for 2030, and at 250 to 320 ktons per year (9,8 TWh to 12,5 TWh) for 2050. Due to this substantial demand, Chemelot has been identified as a vital part of the Delta Rhine Corridor. Acknowledging the demand in the nearby Aachen

and Rhenish Mining Regions as well as the proximity to the already planned construction of the H2ercules pipelines from Belgium to Germany (via Aachen), both the Province of Limburg and Chemelot regard it to be crucial to connect these key European hydrogen backbones.

## The Delta Rhine Corridor

The Delta Rhine Corridor is being developed in the Netherlands and aims to connect industrial clusters with a reliable supply of green hydrogen. Although current plans take the German Ruhr area and industrial regions along the Rhine (up to Ludwigshafen) into account, the southern pipeline is planned to end at the Chemelot site in Geleen. An extension of the corridor through Parkstad Limburg, Aachen, and the Rhenish Mining Region can create a dynamic and integrated hydrogen infrastructure that caters to the needs of the entire cross-border region. This pipeline network could facilitate the efficient and cost-effective transportation of hydrogen from the North Sea and the Port of Rotterdam to end-users in these regions, supporting innovation, collaboration, and sustainable growth.

## Economic and Environmental Benefits

The integration of Parkstad Limburg, the Aachen Region and the Rhenish Mining Region into the Delta Rhine Corridor has significant economic and environmental benefits. The availability of a robust hydrogen supply can attract investments and, therefore, foster industrial growth and stimulate job creation, contributing to the overall prosperity of the region. The resulting transition from fossil fuels to hydrogen can greatly reduce greenhouse gas emissions, supporting the global fight against climate change and reinforce and amplify the regional efforts regarding technological development as a strong innovation region.

## Infrastructure Development and Collaboration

The successful realization of the Delta Rhine Corridor extension requires a strong collaboration between the Dutch and German authorities, relevant stakeholders, and industrial players in the regions. It is crucial to establish a regulatory framework that incentivizes investment in hydrogen production, storage, and distribution infrastructure. This framework must also enable local authorities to act safely regarding planning permissions and ensure a smooth pathfinding process. Additionally, financial support mechanisms and joint research initiatives should be implemented to accelerate this development.

## Final remarks

Hydrogen is expected to play an essential role in the economy of the future, especially in industrial regions like the Rhenish Mining Region, which now almost exclusively runs on fossil fuels. For the Netherlands and the Port of Rotterdam to become a global hydrogen hub, they must be connected to regions with high demand. Next to the obvious future demand in the Ruhr Area and industrial regions along the Rhine, connecting the Rhenish Mining Region (with its energy demand of at least 10 TWh per year) to the Delta Rhine Corridor makes sense from an economic, and of course sustainability, point of view. The collaboration between Parkstad Limburg, Aachen, and the regions of the Rhenish Mining Region, together with the Netherlands' well-established hydrogen infrastructure, has the potential to unlock unprecedented opportunities. This interconnected network will enable the seamless transportation and distribution of hydrogen, facilitating the deployment of fuel cell vehicles, the development of hydrogen-powered industries, and the implementation of renewable energy projects.

In conclusion, the integration of these regions into the Delta Rhine Corridor is a pivotal step towards a sustainable and prosperous future. Through our collective efforts and effective advocacy, we can demonstrate the transformative power of hydrogen and pave the way for a greener, more resilient, and interconnected energy landscape. Let us seize this opportunity to present our position and work together to shape a brighter future for our regions and beyond.