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5-point action plan to support hydrogen developments in Belgium, Germany and the Netherlands

By the Belgian and German Hydrogen Councils, and the Hydrogen Association of the Netherlands

Introduction

The development of clean hydrogen (i.e., renewable and low-carbon hydrogen) is critical for Europe's ambition to achieve climate neutrality and maintain its technological leadership. However, despite the strong push from the European Union and the favorable geographic positioning of Germany, the Netherlands, and Belgium significant challenges remain in achieving the European targets for clean hydrogen while ensuring its availability at competitive prices. Our three countries, as key industrial centers, are not only vital to Europe's industrial output but also host a significant share of current hydrogen production and consumption. Yet, we face hurdles in creating the necessary conditions to support this energy transition, particularly when compared to other European countries with lower hydrogen production costs.

Germany, the Netherlands, and Belgium account for 30% of Europe's industrial output and 40% of its hydrogen consumption. With strategic locations at the North Sea, we are well-positioned to become Europe's hydrogen import hubs. Electrolyser projects and hydrogen imports equivalent to 650 MW have already received Final Investment Decisions in our countries. However, this is not nearly enough, considering the high demand for clean hydrogen in refineries, chemical industry, steel production, transport and other sectors.

The production cost of clean hydrogen, especially renewable hydrogen, is still significantly high compared to fossil fuel-based hydrogen. In addition to the high domestic production costs, the reliance on hydrogen imports adds another layer of complexity, e.g. for terminal developments and certification. Although the ports in our countries are well-suited to handle hydrogen imports, the development of terminal and cracking facilities has been slower than anticipated.

Further, Belgium, Germany and the Netherlands are among Europe's leaders in preparing for an interconnected, cross-border hydrogen backbone. The development of robust hydrogen infrastructure and a comprehensive hydrogen network is crucial for transporting both imported and locally produced hydrogen across Europe. However, the roll-out of the backbone encounters delays due to, among others, permitting issues. As hydrogen production from low-cost regions in Southern and Northern Europe is expected to play a key role in meeting Europe's clean energy needs, these delays could hinder significant imports to our region. Without the timely deployment of infrastructure, Europe risks missing key opportunities to integrate clean hydrogen into its energy mix, slowing the continent's transition to a sustainable and resilient energy system.



While Europe is hesitating in the development and support of hydrogen infrastructure and technology, other regions such as North America and Asia are accelerating and taking over our leading position. China has already surpassed its own plans for building up hydrogen production capacity.

Another significant challenge facing the hydrogen transition in Germany, the Netherlands, and Belgium is the shortage of skilled labor. As the hydrogen economy grows, so does the demand for locally educated and skilled workers. However, despite efforts to create specialized education and training programs, the development of competence in hydrogen technologies is fragmented and lacks visibility.

The hydrogen transition in Germany, the Netherlands, and Belgium presents a complex mix of opportunities and challenges. Our countries are key players in Europe's clean hydrogen strategy due to their industrial strength, geographic positioning, and commitment to building a hydrogen backbone. Addressing these challenges will be essential for ensuring the competitiveness of these countries in the global hydrogen economy and achieving Europe's broader climate goals.

In this paper, the hydrogen councils of Belgium, Germany and the hydrogen association of the Netherlands propose a 5-point action plan to further pave the way for advancing the development of hydrogen market in our countries, and accordingly in Europe.

Action points

Reducing the Regulatory Complexity

Harmonizing the regulation on European and national level and reducing the complexity and intricacy of the regulatory environment.

In the context of a globally developing hydrogen economy, consistent, international standards, norms and certifications are a key prerequisite for cross-border trade in hydrogen and its derivatives. However, an overly fragmented, complex and nationally oriented approach must be avoided as a matter of urgency. Simplifying the current and upcoming regulation, such as Delegated Act, RED III, etc., is a prerequisite to kick-start the clean hydrogen market. Regulations and policies should focus on creating a unified European hydrogen market, enabling cross-border hydrogen flows and the trade of hydrogen-derived fuels. To achieve national and European targets, it is also necessary to speed up permitting procedures at all stages of the value chain. Unclear perspectives in regulation and thus uncertainties in the market must be avoided. The consequences of such a development are exemplified by hydrogen refuelling stations, where urgently needed investments are hampered by lengthy permitting procedures. With project durations of several years, clear and easy to implement regulatory framework conditions must now be created across the entire value chain from production to application.

Strengthening Technology Leadership

Protecting key industries and expanding EU's technological leadership in hydrogen.

To maintain and expand its leadership in hydrogen technology, the European Union must continue to provide dedicated support to technology manufacturers within the sector. This involves increased investment in Research & Development (R&D) programmes, testing and validation capacities and pilot projects as well as the further development of investment funds that will enable and accelerate the necessary scaling of the



technology. At the same time, the EU must focus on protecting key industries and ensuring they remain competitive within the region. This includes supporting traditional industries in their transition to sustainable business models, as well as fostering the growth of new sectors that can benefit from the hydrogen economy. It must also ensure that European instruments will be implemented in a fast manner. At the same time, risks should be assessed in a differentiated way and relevant hydrogen and energy transition technologies be recognized as essential uses. Through targeted funding programmes and a strategic industrial policy, the EU can create an environment that not only attracts investment but also secures skilled jobs for the future. By simultaneously strengthening its technological leadership in hydrogen and its derivatives and supporting the broader industrial ecosystem, the EU can increase its economic resilience and position itself as a global leader in the sustainable energy transition, paving the way for a competitive and sustainable future.

Closing the Cost Gap

Closing the cost gap between the supply side and the ability to pay on the demand side.

To accelerate the development of a robust hydrogen economy, it is essential to bridge the current cost gap between hydrogen production and imports on the supply side and the ability to pay on the demand side. This requires the creation of long-term and reliable framework conditions and incentives that hold out the prospect of growing demand and supply and thus create investment security for all market participants. A number of instruments already exist for this purpose, such as CCfDs and auctions organised by the European Hydrogen Bank or H2Global, however, the effectiveness of these instruments depends heavily on securing sufficient funding to achieve the necessary scale and volume effects. The intermeshing of the individual national mechanisms and their integration into the European context must be accelerated in order to maximise the efficiency of funding. Further we need to stimulate the uptake of renewable hydrogen by developing green lead markets.

Developing the Infrastructure

Rapidly drive forward the development and expansion of the hydrogen infrastructure.

The rapid development and expansion of the hydrogen infrastructure required to connecting supply with demand must be considered holistically. In addition to import terminals for the ship-based import of hydrogen and its derivatives, this includes national and cross-border hydrogen pipelines and hydrogen storage facilities. The coordination of national plans among the member states is of crucial importance for the success of a sustainable and efficient hydrogen economy in Europe. In particular, future imports for example from northern and southern Europe must be taken into account in the planning of the hydrogen infrastructure. In Northern Europe, the "North Sea Energy Hub" is of particular importance, which represents a major import route for hydrogen and its derivatives for Belgium, Germany and the Netherlands due to the well-developed ports and at the same time provides great potential for the production of renewable hydrogen via offshore wind. A basic prerequisite for the development and expansion of the infrastructure is a financing framework with sufficiently attractive risk and return profiles for investors.

Promoting Knowledge Transfer

Promoting the transfer of knowledge in hydrogen and training the required skilled labor.

Building and sharing knowledge within the European Union (EU) plays a central role in the promotion of hydrogen technologies and the training of the necessary skilled labour. The exchange of research findings,



technical innovations and best practices within the context of transnational projects, networks and partnerships enables the (further) development of new technologies to optimise the production, storage and use of hydrogen and its derivatives. Equally important is the training and education of skilled workforce that will be responsible for implementing and operating these new technologies. To this end, appropriate educational programmes and vocational training initiatives must be established and expanded to equip workers with the necessary skills and qualifications to thrive in the hydrogen economy. This investment in human capital is as critical as the technological advancements themselves.



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