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BSP Position Paper: Renewed Hydrogen Strategy

Business & Science Poland

This position paper, submitted by Business & Science Poland (BSP), responds to the European Commission's call for evidence on the 'A Renewed Hydrogen Strategy for a More Competitive and Resilient Europe' initiative. It outlines the perspective of Polish industry and identifies the primary obstacles to developing the renewable and low-carbon hydrogen market within the European Union, offering recommendations on how to overcome these challenges. The proposals aim to support the development of a competitive and resilient European hydrogen market, while taking into account economic realities, technological neutrality, and the EU's decarbonisation objectives. The revised strategy, expected to be published as a Commission communication, ought to propose measures to ensure the effective implementation of existing legislation and outline market development plans up to 2040.

Introduction

In recent years, the European Union has significantly expanded the legal framework for industrial decarbonisation and the energy transition, including through the revision of the Renewable Energy Directive (RED III), delegated acts on renewable fuels of non-biological origin (RFNBOs), the 2024 hydrogen and gas decarbonisation package, and the Clean Industrial Deal. Commission Delegated Regulation (EU) 2025/2359, setting out a methodology for assessing greenhouse gas emissions savings from low-carbon fuels, was also adopted in 2025.

The BSP has actively contributed to the debate on these measures, emphasising the importance of flexible, realistic and technology-neutral rules that take into account the varying circumstances of the different Member States, especially those in Central and Eastern Europe. The renewable energy policy framework (RED IV) currently being prepared for the period after 2030 will provide another opportunity to assess the consistency of the targets with the technologies, infrastructure and costs involved.

Renewable and low-carbon hydrogen can play a significant role in decarbonisation, especially in sectors and processes where direct electrification or the use of alternative low-carbon technologies is either technically infeasible or economically unjustifiable.

Nevertheless, it is essential to support the supply side of the emerging hydrogen market, including the use of low-carbon hydrogen produced from fossil fuels in combination with carbon capture and utilisation (CCU) and carbon capture and storage (CCS)

technologies. In this context, we believe that the Hydrogen Strategy should promote a non-discriminatory approach to all conventional fuels that can contribute to the production of low-carbon hydrogen and consequently to genuine reductions in greenhouse gas emissions. It should be emphasised that low-carbon hydrogen can be produced not only through natural gas reforming ('blue' hydrogen), but also from petroleum-derived products or through other low-carbon production pathways where they are available on the market. Combined with CCU and CCS technologies, this comprehensive approach could effectively scale up renewable hydrogen production and help meet medium-term demand for this fuel. Therefore, the term 'clean hydrogen' encompasses both renewable and low-carbon hydrogen. Discriminating against a wider range of fuels in this context would be inconsistent with the fundamental principles of Europe's circular economy.

In line with the principle of technological neutrality, it is essential that EU policy takes account of actual emissions reductions while allowing businesses the flexibility to choose the most effective technologies and decarbonisation pathways.

In prior dialogues on hydrogen, we have emphasised that the ambitious targets for the proportion of renewable fuel-derived non-biological oxygen (RFNBO) in the hydrogen mix for industry and transportation could be difficult to achieve, given the current progress in renewable energy infrastructure, electrolyser technologies, and energy storage. This would require substantial investment and substantial imports of green hydrogen and its derivatives (including ammonia) from outside the EU. We have also emphasised the necessity of leveraging existing market mechanisms, such as the EU Emissions Trading System (EU ETS), while upholding technological neutrality and giving due consideration to the potential of low-carbon and biogenic hydrogen (e.g. hydrogen derived from biomethane or waste). RFNBOs are one of the main ways of achieving renewable hydrogen targets, and policies governing them impact production costs. These recommendations therefore remain relevant to the preparation of the Strategy.

Key BSP recommendations

- **Technological neutrality and greater recognition of low-carbon hydrogen:** ensure a level playing field for different hydrogen production technologies.
- **Revision of the formula for the RFNBO targets for 2030.**
- **Simplification of RFNBO production requirements:** accelerate the revision of Commission Delegated Regulation (EU) 2023/1184, in particular by extending transitional periods for additionality, maintaining monthly temporal correlation and relaxing geographical correlation requirements to allow the sourcing of renewable electricity from interconnected bidding zones without additional conditions.

- **Financial support for the entire hydrogen value chain:** provide stable and predictable financing mechanisms covering capital expenditure (CAPEX), operating expenditure (OPEX) and the additional costs of using renewable and low-carbon hydrogen in industrial processes.
- **Infrastructure development and simplification of investment procedures.**
- **Demand growth and priority industrial applications:** target support at hard-to-decarbonise sectors where direct electrification is technically or economically challenging, with particular emphasis on the chemical, fertiliser (including the production of renewable and low-carbon ammonia) and refining industries.
- **Strengthening European production capacity and security of supply.**
- **Predictable regulatory framework and dialogue with industry:** consider the competitiveness of European businesses, the specific characteristics of high-emission regions and the needs of investors when developing the Hydrogen Strategy and the EU's future energy policy framework towards 2040.

2030 targets, demand and barriers to implementing RED III

Under RED III (the third version of the Renewable Energy Directive, Directive (EU) 2023/2413 of 18 October 2023), Article 22a established a target for the share of RFNBOs in hydrogen used by EU Member States in the industrial sector of 42% by 2030 and 60% by 2035. This target is extremely ambitious and, in many parts of the EU, cannot be met without importing substantial volumes of green hydrogen and its derivatives (including ammonia) from outside the EU and undertaking adaptation investments amounting to billions of euros. These include investments in renewable electricity generation needed to produce RFNBO hydrogen, as well as transport, port and logistics infrastructure capable of meeting the needs associated with RFNBO production.

Meeting this obligation will place a significant burden on Polish and European industry, particularly the chemical sector (fertilisers, chemicals, and petrochemicals). The challenge is especially acute given the need to adapt production plants and modify industrial processes. There is also a significant difference between the cost of producing RFNBO hydrogen and the current cost of producing hydrogen that does not meet the below outlined requirements. The scale of the challenge is even greater in Poland, which is currently the EU's third-largest producer and consumer of hydrogen.

In practice, the percentage targets imposed by RED III translate into a demand for 265,000 metric tonnes of RFNBO hydrogen in Poland by 2030, rising to 514,000 metric tonnes by 2035.

The analysis of RFNBO hydrogen production in the context of meeting the RED III industrial target concludes that, while renewable hydrogen could reduce greenhouse gas emissions and fossil fuel imports from Russia, the current highly restrictive form of the delegated act on RFNBOs is also likely to result in the following: (1) new strategic dependencies resulting from the need to import renewable hydrogen from third countries, (2) relocation of industry away from Europe leading to large-scale deindustrialisation and rising unemployment, and (3) a lack of strategic independence for the Union.

Furthermore, RFNBOs will remain costly niche technologies and European industry will not be able to deploy them on a large scale before 2030, which will undermine the implementation of the EU's decarbonisation strategy.

Recognition of the role of low-carbon hydrogen

Furthermore, we call for greater recognition of the potential of low-carbon hydrogen, which can be produced using existing and widely used technologies. In this regard, a technology-neutral approach and equal treatment of all types of low-carbon hydrogen are particularly important. This should allow low-carbon hydrogen to contribute to achieving EU decarbonisation targets in both industry and transport. In this context, the key criterion should be the actual reduction of greenhouse gas emissions rather than the promotion of a particular technology.

The production and use of hydrogen derived from natural gas or crude oil in refineries and petrochemical plants make it possible to spread the operating costs (OPEX) and capital expenditure (CAPEX) associated with hydrogen production, owing to stable production and high demand for hydrogen arising from the processing of intermediate products, the production of fertilisers or industrial gases and other applications.

The lower costs of low-carbon hydrogen and stable production enable all stakeholders to reach the break-even point and subsequently develop the hydrogen economy, including hydrogen mobility in the EU, where domestic production and consumption of green hydrogen remain below expectations despite the support mechanisms put in place.

Existing technologies (reforming of natural gas or heavy naphtha, partial oxidation of residues, and steam cracking of hydrocarbons) either do not produce CO_2 as a by-product or produce CO_2 of a high degree of purity, thereby facilitating the deployment of carbon capture and utilisation (CCU) technologies.

Financing investment and supporting the entire value chain

The financial implications of the entire green electricity production chain cannot be overlooked, from generating electricity in wind and solar power plants to converting that

electricity into green hydrogen through water electrolysis. At present, this is a very costly way of obtaining a feedstock for clean energy production.

We also wish to draw attention to the need to support projects that enable the use of by-product hydrogen from existing installations, provided that they contribute to reducing greenhouse gas emissions. In addition, new green hydrogen production projects should be financed together with ancillary installations capable of stabilising their operation during periods of limited available power, arising from changes in the time of day or season, reduced wind speeds and similar factors. Financial support will also be necessary for the further development of green ammonia projects.

It is also important to finance projects that establish new laboratories and develop expertise in measuring hydrogen quality and purity. Support should also consider sectors and processes that are difficult to decarbonise, where using hydrogen can substantially reduce emissions, while taking into account the cost difference compared to conventional solutions.

Additionally, in our view, it is crucial to subsidise products manufactured using 'green' or 'blue' hydrogen in order to offset the increase in production costs resulting from the use of more expensive hydrogen at any stage of the production process. At the same time, Regulation (EU) 2023/1184 (as amended by Regulation (EU) 2024/1408) specifies when electricity used to produce RFNBOs may be regarded as fully renewable. It lays down detailed rules on the origin of electricity, temporal and geographical correlation, and additionality

The additionality principle means that renewable electricity must come from new or expanded renewable energy installations. A new installation must have entered into operation no more than 36 months before RFNBO production begins and before a power purchase agreement (PPA) is concluded with the fuel producer. The purpose of this requirement is to stimulate the development of new renewable electricity generation capacity rather than merely redistribute existing capacity. In practice, it means that every renewable hydrogen production project must be linked to investment in a new renewable electricity generation installation or a substantial upgrade to an existing one.

Furthermore, electricity used to produce RFNBOs may not come from installations that have received public operating aid. This means that a significant proportion of existing solar and wind farms, both onshore and offshore, in Central and Eastern Europe, which were developed using public support mechanisms, are in effect excluded from supplying electrolysers producing renewable hydrogen for the purposes of counting that hydrogen towards the RED III targets. In practice, this further restricts the availability of qualifying renewable electricity in the region and widens disparities between Member States.

Unlike hydrogen production, renewable electricity generation is subject to considerable fluctuations, does not necessarily take place near industrial sites and involves longer and more complex permitting procedures. In our view, excessively restrictive additionality criteria and the lack of financial support for renewable energy installations may discourage investment in RFNBO production and jeopardise the achievement of EU targets in this area. The ability to meet these requirements depends largely on the level of renewable energy development in individual EU countries. This is why it is so important today to allow renewable electricity from existing sources to be used.

Moreover, retaining the additionality requirement may lead to adverse market outcomes, such as artificial price increases by producers whose generation installations meet the additionality requirement, particularly where supply is limited and margins above wholesale prices can be imposed. This could be compounded by retaining geographical correlation restricted to a single bidding zone.

In our view, the additionality requirement puts green hydrogen producers at a disadvantage compared with other users of renewable electricity, while also discriminating against producers operating existing renewable energy installations (which cannot be connected to an electrolyser) in favour of new installations. The requirement therefore constitutes a significant barrier to the development of green hydrogen and runs counter to the objectives of the RED revision, which sought to increase the availability of renewable energy by setting an RFNBO target.

An exception to the additionality requirement applies in bidding zones where: (1) the emissions intensity of electricity is exceptionally low, below 18 gCO_2eq/MJ; or, alternatively, (2) the share of renewable electricity in the bidding zone is at least 90%.

These are demanding requirements which, in practice, mean that electricity in a given region comes almost entirely from renewable sources. Poland cannot currently meet these criteria because its electricity system still relies predominantly on conventional fuels. Accelerating permitting procedures in Poland is therefore important in the context of additionality and the need to build new renewable energy installations. The development of greenfield onshore wind projects currently takes approximately five to seven years.

It is worth noting that the European Commission itself recognises the potentially restrictive effect of this requirement on hydrogen investment. Article 11 of Commission Delegated Regulation (EU) 2023/1184 therefore introduced a transitional period under which installations starting operations before 1 January 2028 are exempt from the additionality requirement for ten years. Given the current stage of development of the EU hydrogen sector and the continuing investment and infrastructure barriers, it would be appropriate to extend the transitional period for additionality by at least a further five

years, while preserving ten years of grandfathering protection, allowing the existing rules to apply until 2040.

Despite the rapid growth in the share of renewable energy in Poland's energy mix in recent years (according to a report by the Polish transmission system operator, installed renewable energy capacity increased from 15,000 MW in 2021 to 27,000 MW in 2023), structural and economic barriers remain, and will continue to remain, particularly those hindering the development of large-scale renewable energy installations capable of supporting RFNBO hydrogen production on a large scale.

The reasons for this are as follows:

- High and still-growing demand for hydrogen produced from natural gas in the Polish economy, owing to the substantially lower cost of producing so-called grey hydrogen compared with RFNBO hydrogen. One third of the gas consumed by industry (3.2 billion m^3 in 2021) is used as a feedstock for hydrogen production. Industry, including the fertiliser sector and refineries, is the largest consumer of natural gas in Poland (40%).
- The funding gap. Assuming that the RFNBO target is met in Poland, the difference between the cost of producing RFNBO hydrogen and grey hydrogen in Poland amounts to at least PLN 30 billion over ten years. The actual funding gap, including full operating costs (OPEX), will, however, be considerably greater, indicating that the scale of the challenge has been underestimated. Market factors, such as CO_2 and natural gas prices, will also have a significant impact on the rate at which this gap closes. If emissions allowance prices and the TTF index remain stable, and no significant changes are made to the Carbon Border Adjustment Mechanism (CBAM) or there is no rapid phase-out of free allowances, the funding gap may narrow much more slowly than expected. High electricity prices remain a key component of this gap and are currently the prices used as a reference by renewable energy developers. In Poland, forward contract prices for 2027-2028 are around PLN 450-500/MWh, to which network charges (approximately PLN 150/MWh) and balancing costs (approximately PLN 30/MWh) must be added.
- Significant capital expenditure on a wide range of associated projects that will need to be carried out, including energy storage facilities to stabilise renewable electricity supply, the expansion of pipeline and rail transport infrastructure, the adaptation of industrial plants to receive RFNBO hydrogen, and modifications to existing production processes. Investment in infrastructure will be reflected in higher network charges, resulting in higher electricity costs for RFNBO production.
- Excessive and impossible-to-meet requirements laid down in the RFNBO delegated regulation, such as the additionality, temporal correlation and

geographical correlation criteria, significantly increase the cost of electricity used to produce RFNBOs.

In practice, these criteria may limit the deployment of such technologies, particularly in countries with less developed renewable energy infrastructure. As a result, not all Member States will have equal opportunities to develop a hydrogen economy, leading to wider disparities between European regions. Moreover, the lack of flexibility in the RFNBO rules may increase the EU's dependence on imported hydrogen and its derivatives rather than support the development of domestic production capacity.

Furthermore, the development of such a large number of new renewable energy sources – which are necessary to power hydrogen production facilities in accordance with the requirements of this regulation for the achievement of industrial targets relating to RFNBO fuels – is certainly not feasible in Poland within the envisaged timeframe.

A final but equally important issue is the need to accelerate and simplify investment procedures. Such simplification should cover not only investment in selected technologies, such as renewable energy sources (RES), but also all solutions that contribute to reducing greenhouse gas emissions, including CCS technologies and the use of waste heat, as well as new projects in the mining and processing industries. Many existing regulations prolong the procedures for obtaining administrative approvals and permits, delaying new projects and undermining Europe's attractiveness to investors. Industry needs less red tape, a technically competent civil service ready to work effectively with investors, faster administrative decisions and more flexible rules to enable the swift deployment of innovation and the modernisation of production facilities. Current support schemes are unfortunately highly complex to navigate, and obtaining State aid for the energy transition is ultimately a laborious and lengthy process that fails to keep pace with changing market conditions.

Infrastructure, grids, permits and energy access

Regulation (EU) 2023/1184 lays down rules intended to ensure that electricity taken from the grid for RFNBO production is generated from renewable sources and used at the time it is produced. Until the end of 2029, electricity may be consumed in the same month in which it was generated from renewable sources. A condition is the conclusion of a power purchase agreement (PPA) between the RFNBO producer and the renewable electricity generator.

From 1 January 2030, a more restrictive rule will apply: temporal correlation must be hourly. This means that the renewable electricity used to power electrolysers must be generated and consumed in exactly the same hour.

Hourly correlation is difficult to accept because of the mismatch between the continuous demand of large-scale electrolysers and the variable nature of renewable energy sources. It would therefore be appropriate to retain monthly temporal correlation until 2040, enabling electrolysers to use a considerably larger proportion of the renewable electricity generated.

Another condition is that the electricity used for RFNBO production must come from the same bidding zone as the RFNBO production facility. Renewable electricity must be generated in the same bidding zone in which the electrolyser is located. Under certain conditions, electricity from interconnected bidding zones may also be used. Alternatively, the production facility may be connected directly to a renewable electricity installation, in which case the geographical requirements are considered to be met.

The development of renewable energy sources and the capacity to generate renewable electricity are unevenly distributed across EU Member States. Securing access to renewable electricity in different countries and bidding zones, using a range of instruments, is essential to the rapid development of RFNBO production, particularly for industrial applications.

However, the geographical correlation requirement restricts the free movement of electricity within the EU Single Market and constitutes unjustified discrimination. On the one hand, it affects renewable electricity consumers in countries with less favourable conditions for renewable generation; on the other, it restricts access to customers, to the detriment of renewable energy producers. It would therefore be appropriate to make geographical correlation more flexible by allowing renewable electricity to be sourced from interconnected bidding zones without additional conditions.

At the same time, the development of hydrogen infrastructure must be planned in line with actual demand, while limiting the risk of passing disproportionately high infrastructure costs on to industrial consumers. We also see a need for dedicated support for small-scale hydrogen production, meaning hydrogen produced and used at the same site, without the need to build long-distance transport infrastructure, as one way of addressing this technological challenge.

Priority applications, technological neutrality and the outlook to 2040

To develop the hydrogen market effectively, it is necessary to recognise and support technologies that can contribute to cost-effective, climate-friendly hydrogen production. We believe the Strategy should recognise the potential to move towards climate neutrality by using biomethane in steam methane reforming (SMR). The same applies to solid oxide electrolysers, which use waste heat generated by the combustion of

conventional fuels. No technology capable of contributing to the development of the hydrogen economy should be excluded *a priori* from support schemes. A technologically neutral methodology and flexible regulatory framework are essential to decisions on which production methods should receive support and investment.

Developing the hydrogen market and preparing consumers and market participants for a hydrogen-based economy requires the timely supply of adequate quantities of hydrogen at a reasonable price. We therefore believe that low-carbon technologies should be considered alongside zero-emission technologies. A differentiated approach across Member States, taking account of the share of renewable energy sources (RES) in their energy mixes, should also be considered.

We believe that RFNBOs should form part of a broader range of decarbonisation tools available to Member States. The 'one-size-fits-all' approach reflected in Articles 22a and 25 of RED III is unfair to certain groups of countries, particularly those in Central and Eastern Europe, given their historical energy mixes, their substantial energy-intensive industries, less favourable conditions for the rapid and cost-effective development of renewables, and still underdeveloped transmission infrastructure requiring extensive investment.

We therefore call for:

1) A review of the formula for the RFNBO target in industry and transport under the post-2030 framework, from a binding to an indicative target and a shift from a sectoral to an EU-wide level, at least until the share of renewable energy sources has increased and electricity prices have fallen, in order to avoid excessive costs and an unequal burden on the economies of Member States.

2) Giving greater consideration to the potential of low-carbon hydrogen, biogenic hydrogen and recycled carbon fuels (RCFs), which can be produced using available, widely deployed technologies.

3) Adopting a technologically neutral approach and treating all types of hydrogen equally, which should enable low-carbon hydrogen also to contribute to the achievement of EU decarbonisation targets, including those for industry and transport.

4) An accelerated revision of the delegated act on RFNBOs, including a change in the EU's approach to hydrogen production, which is currently based on a 'best technology scenario' favouring particular geographical conditions that are not equally available across the Union. To develop the hydrogen market more quickly, the regulatory framework should be more flexible and inclusive, allowing solutions to be adapted to different industrial needs and operating conditions.

An inclusive regulatory approach should allow decarbonisation targets to be met using different hydrogen production pathways, including hydrogen produced with carbon capture, utilisation and storage (CCUS), by-product hydrogen, biomethane-derived hydrogen and nuclear-based hydrogen. Such an approach would enable the hydrogen market to develop more rapidly, unlock its full potential, attract greater investment and ensure more effective use of domestic resources across Member States.

EU production, imports, security of supply and international competition

Given the key role they will play in the EU's future decarbonisation, the production of RFNBOs and low-carbon ammonia should be recognised as a priority and as strategically important to the interests of the European Union. Ammonia is a precursor to fertilisers, which are essential to Europe's strategic food security. Moreover, RFNBO and low-carbon ammonia – which act as hydrogen carriers and are fuels that produce zero CO_2 emissions when combusted – play a significant role in the decarbonisation of industries that are difficult to decarbonise, as well as in the maritime transport sector. Recognising them as strategic products should be reflected in industrial policy and regulatory support at EU level.

Another important issue is support for local supply chains and the expansion of national industrial bases throughout the EU. Decarbonisation must not make Europe dependent on imports of technologies, key components and raw materials from third countries. Such dependence could threaten security of supply in a crisis and weaken the EU economy. Supporting local businesses, particularly in strategic sectors linked to the energy transition, will help build more resilient and competitive industrial ecosystems across the EU. Equally important is ensuring that imported hydrogen and its derivatives are subject to comparable requirements on emissions, certification and traceability of origin, thereby guaranteeing a level playing field and reducing the risk of carbon leakage.

This means, in particular, protecting the competitiveness of European energy-intensive industry and avoiding the imposition of obligations to use hydrogen without due regard to its price, availability, technological maturity and impact on business competitiveness.

An essential element of effective policymaking is regular and meaningful dialogue with industry from across the EU. This will allow the transition to be planned realistically and help ensure that new regulations genuinely support businesses without undermining their competitiveness in global markets. In this context, it is vital to take account of the views of businesses and industry associations throughout the legislative process. This will help ensure that new rules support the stable development of European industry

while minimising the risk of excessive restrictions that hamper its performance in international markets.

The importance of maintaining a strong transport sector that can compete globally must also be emphasised, particularly given the challenges facing civil aviation. The pace of change dictated by climate ambitions must reflect market realities and constraints. Appropriate support is therefore needed, both through regulatory measures and by providing an investment stimulus in critical fuel-related areas, so that EU aviation can continue to develop.

BSP calls for a change in the approach based on the 'best technology scenario', which favours particular geographical conditions that are not evenly distributed across the Union. Unless appropriate regulatory adjustments are made, there is a risk that production will relocate to regions with less stringent climate regulations, undermining the achievement of actual decarbonisation objectives. Industry supports the energy transition but expects it to be carried out fairly, efficiently and with due regard to economic realities.

We further recommend that any future regulatory measures arising from the Strategy, particularly potential sectoral targets, obligations to use hydrogen and infrastructure financing mechanisms, be preceded by an assessment of their impact on energy costs, security of supply and the competitiveness of EU industry.

Hydrogen should be used primarily where it delivers genuine, measurable and economically justified emissions reductions. Its use should not be mandated through regulation without regard to economic and technological conditions or the availability of adequate supplies.

Technological neutrality, support for high-emission regions and sectors, stable financing and regulatory simplification are key factors that will determine the success of this Strategy.

About BSP

Business & Science Poland (BSP) combines the experience of leading Polish enterprises with the EU agenda. We represent the knowledge and interests of Polish companies employing over 280,000 people in Poland, the EU, and globally. Our goal is to support the EU Single Market in line with the need for its responsible and effective transformation. This opinion presents the position of BSP members representing the digital, financial, air transport, fertiliser, chemical, mining, refining, fuel and energy sectors.