

Statement on Germany's updated National Hydrogen Strategy

Germany's National Hydrogen Council (Nationaler Wasserstoffrat – NWR) welcomes the updated National Hydrogen Strategy (Nationale Wasserstoffstrategie – NWS) presented by the German government, which further develops, in accordance with the coalition agreement of 10 December 2021, the National Hydrogen Strategy originally adopted in June 2020. The updated Strategy sends an important signal concerning the hydrogen ramp-up in Germany, and sets out, in particular, the objective for 2030 to accelerate the market ramp-up in order to ensure sufficient hydrogen and derivatives for establishing hydrogen applications in all sectors. This is the only way Germany can secure its leading position in hydrogen technologies along the entire value chain.

Although the 2030 vision is essential for the early stages of the ramp-up, it is not sufficient for the objective of a liquid hydrogen market in terms of technologies, infrastructures and commodities (hydrogen and its derivatives), so the NWR urgently recommends that future perspectives in this regard, which are as robust as possible, be added to the present strategy without delay. In addition, the NWR still sees a need for strategic specification and classification in the following areas:

- ◆ The goals through to 2030 need to be set out in greater detail together with an optimised monitoring and review system, and the need for action with regard to the market ramp-up looking ahead to the period after 2030 must be discussed.
- ◆ No hydrogen storage strategy has been detailed to date. In addition to the technical aspects involved, this must also describe hedging and refinancing mechanisms for storage operators.
- ◆ There is also a lack of detail concerning a hydrogen import strategy, which provides, for example, clear framework conditions for long-term contracts, the design of an internationally harmonised certification and standardisation system (also taking into account broader sustainability criteria), the use of state guarantees to secure supply and demand and, in the market ramp-up, the need to fund the difference between procurement costs and purchase price. Furthermore, the import infrastructure and its financing (ammonia terminals and crackers) must be considered.
- ◆ The National Hydrogen Strategy should fit coherently in with other energy and industry policy strategies and be consistent with their respective objectives.
- ◆ The German Hydrogen Acceleration Act (Wasserstoffbeschleunigungsgesetz) should be clarified, in particular so as to emphasise the central importance of simplifying approval procedures for transport, import and storage infrastructures as well as generation facilities.

- ◆ Carbon contracts for difference need to be more firmly anchored and brought into focus as the central instrument for stimulating demand for the hydrogen ramp-up in various industrial sectors.
- ◆ Coherent framework conditions and a funding strategy need to be developed, and regulatory obstacles along the entire production and value chain need to be avoided or removed (such as the definition of hydrogen in the German Energy Industry Act (Energiewirtschaftsgesetz, EnWG)).

The NWR agrees with the German government's analysis that the changed framework conditions since the National Hydrogen Strategy was adopted in June 2020 have had a significant impact on the necessary role of hydrogen and its ramp-up. In particular, the more ambitious climate protection goals with climate neutrality envisaged by 2045, the Russian war of aggression on Ukraine as well as the growing international competition for technological leadership in the hydrogen sector are examples to be mentioned here.

The significant changes mean that demand for hydrogen and its derivatives will come sooner and be much greater than was assumed in the 2020 Strategy. At the same time, hydrogen and its derivatives have an even more important role to play in diversifying energy imports and ensuring security of supply. The US Inflation Reduction Act intensifies international competition surrounding hydrogen technologies and associated industries and has the potential to have a lasting negative impact on competitiveness, employment, transformation of industry and economies in Europe, especially in Germany, as well as on the achievement of climate goals overall. Only if a competitive supplier and OEM industry for electrolysers and other key technologies of the hydrogen economy is quickly established in Europe can the opportunity to participate in the emerging global hydrogen market be seized. The current lack of knowledge about upcoming mandatory European requirements for the use of specific materials such as PFAS in the hydrogen sector creates uncertainty at all levels – from investment to implementation – and can thus significantly delay the achievement of the set climate targets in the long term. This is primarily due to a legislative proposal of the European Chemicals Agency (ECHA), which has been put out for consultation. Some of the measures and proposals derived there are not comprehensible and are based on incomplete assumptions. In order to enable use in key industrial technologies, taking into account appropriate end-use concepts, as well as to enable the hydrogen ramp-up, practicable transition periods and/or exceptions must be provided for in the PFAS REACH process (REACH: Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals), which envisages a ban. We therefore urgently advise development of a broad and complete knowledge base in all directions here, so that applications in the hydrogen sector are not jeopardised, while at the same time exploiting all possibilities to protect our environment. The NWR is preparing a position paper on this.

The NWR fundamentally welcomes the 2030 objective set out by the updated National Hydrogen Strategy. The NWR is of the view, however, that a certification as well as a standardisation and trading system for the establishment of a liquid and internationalised hydrogen market should be introduced in the short and medium term. A well-defined, reliable and coherent regulatory environment provides the essential conditions for enabling investment certainty for companies, creating a competitive and transparent market, and ensuring climate protection. A uniform and harmonised European system for the provision of guarantees of origin for hydrogen in conjunction with classification by upstream chain emissions is required in order to establish a regulatory framework that promotes competition and implement the necessary funding instruments for ramping up the hydrogen economy.

ENSURE AVAILABILITY OF SUFFICIENT AND SUSTAINABLY PRODUCED HYDROGEN

In order to achieve climate protection goals and transform the entire national economy while at the same time preserving jobs, value creation and competitiveness, especially in the energy-intensive industries, large quantities of cheap hydrogen and its derivatives are needed quickly. The NWR therefore agrees with the objective set out by the German government that hydrogen and hydrogen derivatives must be available in sufficient quantities to cost-effectively cover demand in the various application areas, taking into account the measures to increase efficiency and reduce demand, and to establish corresponding value chains. The NWR therefore expressly welcomes the increase in predicted demand for hydrogen and its derivatives for 2030 to 95–130 TWh. In order to meet the resulting demand for climate-neutral hydrogen, the NWR believes that 23 to 39 GW of electrolysis capacity would be needed, which would have to be installed either in Germany or abroad. Domestic expansion targets must be coordinated with those for the import strategy so as to robustly guarantee coverage of foreseeable demand. In order to guarantee these necessary quantities, the majority of the NWR welcomes the fact that, in addition to green hydrogen, blue, turquoise and orange hydrogen are also eligible options for funding in the market ramp-up phase. A minority of the NWR rejects funding for non-green hydrogen due to the significant CO₂ emissions and the risk of prolonged adherence to fossil structures and, as a minimum, calls for a clear path for phasing out funding by 2030. However, in order to stimulate investments quickly and establish the necessary production chains, reliable and unbureaucratic framework conditions are needed. This also includes a robust funding framework with a high degree of clarity under State aid law.

EXPANDING THE PRODUCTION OF HYDROGEN AND HYDROGEN DERIVATIVES IN GERMANY

The NWR supports raising the national expansion target for electrolysis capacities to at least 10 GW by 2030. To date, the funding regime has been predominantly geared towards stimulating hydrogen production and imports on the demand side. The NWR is of the view that the projects mentioned in the National Hydrogen Strategy (pie chart on page 7 of the updated Strategy) should be quickly and reliably backed up with concrete measures and funding initiatives on the supply side in the initial and market development phase. On the one hand, there are still regulatory obstacles and thus uncertainties as to whether, in particular, the expansion of wind energy at sea and electrolysis capacities at sea and on land will be implemented quickly enough. These obstacles must be reduced or removed altogether. On the other hand, reliance is being placed on the effect of demand-oriented instruments in the development of electrolysis capacities, which must be adequate. There could also be capacity overlaps here with the IPCEI projects or other electrolysis funding on the supply side.

Especially in the market ramp-up phase, there is conflict between system compatibility (in the broad sense with a view to the overall energy system), cost-effectiveness and the location of hydrogen production. When it comes to supplying industry, the construction of electrolysers at industrial locations is also important, especially in the ramp-up phase, if connection to hydrogen infrastructures is only possible with a long delay. Domestic electrolysis capacities amounting to 10 GW by 2030 are of enormous importance, both in terms of the industrial policy dimension (see NZIA) and with regard to the climate policy objective. However, this expansion should not be subject to regional restrictions at the national level (spatial correlation), if and for as long as there is no access to pipeline-bound hydrogen.

IMPORTING HYDROGEN AND HYDROGEN DERIVATIVES

In addition to the domestic production of hydrogen and its derivatives, the updated National Hydrogen Strategy together with the import strategy sets another point of focus in ensuring sufficient availability, which is logical and welcomed by the NWR. In this regard, given the global dynamics, the NWR would point out that Germany should seek timely partnerships in a European context and with its neighbouring countries as well as at the global level with respect to the import of hydrogen and its derivatives. This should also be done in compliance with sustainability criteria, as proposed by the Hydrogen Council in its position paper¹. This requires a clear and robust commitment to these long-term energy partnerships in order to establish a diversified and competitive import portfolio in the interest of both sides.

As announced, the import strategy is still to be finalised and adopted in 2023. The aim should be to establish a sustainable, resilient and cost-effective supply of hydrogen and its derivatives through strategic partnerships and an international market that is to be supported. With regard to derivatives, it is also necessary to bear carbon in mind as a raw material, which is needed for the conversion of climate-neutral hydrogen into methanol, for example. Imports of hydrogen and its derivatives should be geared towards the criteria of resilience, scalability, sustainability, the establishment of different import corridors (global gateways) and networking with regional hubs. The strategic hydrogen partnerships are, on the one hand, sustainable and long-term technology and development partnerships on an equal footing. Therefore, civil society in partner countries should be consulted as early as possible in the development of the import strategy. The welcome comprehensive sustainability criteria of H₂Global should continue to be pursued as a decisive evaluation factor in tenders and the corresponding consideration should be made transparent and comprehensible as well as regularly evaluated.

On the other hand, these partnerships must be geared towards the development of a global hydrogen and derivatives market as well as the implementation of the associated key technologies. Broad diversification will only occur in line with a functioning international market. This requires suitable and robust instruments to secure long-term supply contracts, especially for the market ramp-up phase. Without risks being hedged on the supply side, there can be no liquid hydrogen market that reflects European and German interests in fair balance with partner countries. The German government should work towards the development of a global market with sustainable, transparent and internationally compatible rules and criteria. These rules and criteria should be based on European legislation, but should not impose higher requirements on export regions that could inhibit a global market. The German (supplier) industry and its technologies should also be taken into account when drafting contracts. This also supports the vision of 'Germany as a lead market for hydrogen technologies' at international level. This aspect should also be underpinned by suitable funding instruments.

The NWR also recommends that the German government establish uniform organisational and systemic management for the development of these international partnerships – including clear targets.

¹ NWR Position Paper on sustainability criteria for import projects for renewable hydrogen and PtX products, 29 October 2021.

With the welcome parallel focus on the import of hydrogen and its derivatives, existing logistics chains for derivatives can be built upon and further expanded. Hydrogen imports via pipelines from other EU Member States and strategic neighbours should be agreed in a timely manner. For the purposes of a rapid ramp-up and increased European cooperation, collaborations in the North Sea and Baltic Sea regions in particular, but also in the Mediterranean region on land and at sea, should be underpinned by clear measures to realise the import corridors. Joint declarations and agreements made must be brought to fruition promptly in order to strengthen confidence in a European and international ramp-up. This also means that the necessary hydrogen technologies are available and the associated value chains are complete and scalable.

DEVELOPING AN EFFICIENT HYDROGEN INFRASTRUCTURE

The NWR expressly welcomes the objective set out by the German government for the development of a privately organised, efficient hydrogen infrastructure that encompasses all areas relevant to the development of the hydrogen economy. The rapid development of efficient hydrogen infrastructure is a prerequisite for a rapid ramp-up of the hydrogen economy. It is a prerequisite for establishing a liquid hydrogen market as a contribution to meeting climate protection targets, ensuring security of supply and as a contribution to a resilient and diversified energy supply. This includes all infrastructure areas and supply chains for hydrogen and its derivatives: pipelines, storage facilities, ports, railways, rivers, roads and refuelling infrastructure. This requires strategic planning based on the precautionary principle, which is geared towards the production and import clusters to be expected in the long term and to the needs of industry, industrial SMEs, the electricity, transport and heat sectors.

The NWR expressly supports the mandate issued by the German government to the transmission system operators to develop a supra-regional core network, taking into account the necessary complementary distribution networks. The core network, which according to current plans will cover around 11,200 kilometres, is the first real step towards a rapid and cost-efficient expansion of Germany-wide hydrogen infrastructure, in which European integration and imports from third countries are considered from the outset. However, in order to quickly connect the relevant consumers and ensure a pipeline-based supply of hydrogen in all sectors, the NWR believes that the core network must be accompanied by timely planning for regional distribution networks. This includes, in particular, high-pressure pipelines that are designed for regional transport and regional distribution due to their dimensioning and planning-based supply task. Such pipelines also connect generators and storage facilities and supply industrial customers and future hydrogen power plants.

In addition to hydrogen infrastructure design in terms of network planning, its financing is an essential prerequisite. With the concept of an amortisation account fit for the capital markets, the ramp-up of the hydrogen pipeline infrastructure can be designed in such a way that prohibitive network fees for the first customers can be avoided and sufficient liquidity for companies can be ensured. Nevertheless, the NWR suggests that the combination of the amortisation account model with other forms of financing be further examined. In addition, this should not result in any disadvantageous financing, network tariff or network access conditions for downstream distribution networks.

For the efficient repurposing of existing gas network infrastructure, it must be ensured at European level that the unbundling regulations for hydrogen network operators are designed analogously to those for gas network operators. The regional networks will play an essential role alongside the transport networks. Legal certainty is needed for the transition from the gas to the hydrogen network or for the decommissioning of gas networks.

Embedding the national hydrogen infrastructure in an efficient European hydrogen backbone network is elementary for the necessary import of hydrogen from Europe and neighbouring regions, complemented by the necessary infrastructure for imports of hydrogen and its derivatives from third countries. This ensures Germany's and Europe's access to the emerging world market for hydrogen and its derivatives. In order to accelerate the expansion of the import infrastructure via LNG terminals and at the same time avoid stranded assets, the ability to repurpose infrastructure for hydrogen or its derivatives should be made mandatory in the regulatory framework. Both of these aspects together form the basis for the expansion of international supply and value chains, the diversified procurement of hydrogen and its derivatives as well as the expansion of procurement portfolios on cost-effective terms.

However, in order to ensure security of supply in good time, robust framework conditions and planning for the conversion and expansion of suitable storage capacities are also required. Furthermore, the NWR urgently recommends that these requirements for the creation of necessary infrastructure investments from ports to long-distance and distribution networks through to the necessary storage capacities – beyond the positions already mentioned in the strategy paper of the German government – be included directly, even if the implementation priorities are more at home in the 2030+ time horizon. The NWR also points out that the design of hydrogen infrastructures beyond pipelines or import infrastructures needs to be urgently considered, especially with regard to hubs for the use of hydrogen and its derivatives in mobility.

ESTABLISH HYDROGEN APPLICATIONS AND VALUE CHAINS

Alongside renewable electricity, hydrogen and its derivatives are an essential decarbonisation option. For individual sectors of the economy, hydrogen and its derivatives are even the only path to climate neutrality. Therefore, the transformation towards climate-neutral production, the international competitiveness of German industry and of industrial SMEs depend on the sufficient availability of hydrogen and its derivatives on competitive terms. The NWR is of the view that this should have been anchored in the updated National Hydrogen Strategy to a sufficient extent beyond 2030 without creating usage rivalry. Here too, it is only with robust future perspectives for 2030+ that a good foundation for the necessary and substantial investments in industry and SMEs can be created and established.

INDUSTRY

For German industry and industrial SMEs to retain international competitiveness, it is necessary to create a coherent framework for funding and action and to avoid and remove regulatory barriers in order to stimulate the market ramp-up along the entire value chain and across the different market roles. The availability of hydrogen must be reliably ensured, especially in the area of industrial applications, where considerable investments are already to be made in hydrogen-based production technologies. The NWR is of the view that it should be the aim, with carbon contracts for difference in particular, to make innovative funding instruments available promptly and also on a broad basis to those industrial sectors that have a special role as demand anchors for the hydrogen ramp-up. The desired dovetailing of the funding systems is of central importance here in order to hedge various investment risks. In addition, the conclusion of long-term procurement contracts should be made possible through hedging instruments and the development of green lead markets should begin now in order to replace start-up financing going forward in a timely manner. As a first step, a green steel labelling scheme should be introduced as early as 2024 and used as a basis for guiding public procurement and green product tenders.

MANUFACTURER AND SUPPLIER INDUSTRY

Of crucial importance is the development of a broad manufacturer and supplier industry across the entire hydrogen value chain, from individual components and subsystems to complete system technologies such as electrolysis systems, but also adapted electrical engineering. This is the only way to ensure competitiveness and sufficient independence. At the same time, this opens up considerable 'once-in-a-generation' opportunities for the transformation of German and European industry towards new technologies. This also goes hand in hand with the indispensable economic safeguarding of the development of the hydrogen economy as well as the preservation of jobs and social stability.

The traditional areas of expertise of German industry, in particular mass production of the highest precision and continuous, technology-leading further development, provide the perfect setting for the industrialisation of hydrogen technology, which is essential for cost and scaling reasons.

In addition, the establishment of independent electrolyser test centres is relevant, for example, to support the market ramp-up and technological progress. The NWR underlines the importance of hydrogen for industry and technology policy. In this respect, the supplier industry needs transparency and guidance about concrete applications as well as interlinking with application-oriented research.

MOBILITY

The NWR welcomes the German government's statements on the role and importance of hydrogen and its derivatives in transport. Due to its current cost structure, the transport sector – especially transport by air and by sea and some aspects of road freight transport – is suitable in the NWR's view as an entry market for establishing a hydrogen value chain in Germany that has a target of up to 1 million tonnes (or 32 TWh) of largely climate-neutral hydrogen by 2030. As a key driver of the transformation, the NWR once again underlines the German government's commitment to CO₂ pricing as a leading instrument in the 2030 objective and advocates a significantly increased level of ambition. The NWR has already spoken out elsewhere in favour of the introduction of sub-quotas under RED II for renewable fuels of non-biogenic origin and sees this as a suitable instrument for focusing on the respective targets to be achieved and releasing additional funds for placing hydrogen on the market. Against the background of significantly higher ambition levels for CO₂ reduction targets, however, it must be examined whether these quotas should be drastically tightened again in order to accompany the broad development of the hydrogen infrastructure that is indispensable for decarbonisation.

In addition to the import of derivatives such as ammonia and methanol as well as gaseous hydrogen via pipeline, the NWR recommends that import and distribution routes for liquid hydrogen (LH₂) also be considered. Comparable to Japanese hydrogen import activities, liquid hydrogen can be efficiently transported in liquid form and then distributed within Germany. The NWR recommends that the German government promote this import route and support the development of a corresponding infrastructure. At the same time, this would underline the, in part, leading role of German industry in the field of liquid hydrogen.

The German government should likewise, going beyond the obligations of the Alternative Fuels Infrastructure Regulation (AFIR), promote the expansion of the hydrogen infrastructure for different applications (35 MPa, 70 MPa, LH₂). In order to move towards concrete implementation, the NWR advocates funding for fully integrated pilot projects along the value chain in road and rail transport and a reduction of corresponding obstacles relating to requirements and permits. The commitment to electrici-

ty-based power-to-liquid fuels and fuel cell-based powertrains for air transport should be accompanied in the future by corresponding demonstration programmes. The Master Plan for Hydrogen and Fuel Cell Technology in Transport that has been announced is seen as a suitable means of breaking down and efficiently structuring the corresponding steps for action against the background of the national climate targets and the initial situation in the transport sector.

ELECTRICITY

Hydrogen will play an important role in the climate-neutral safeguarding and resilience of the electricity supply. The NWR therefore welcomes and emphasises the fact that certainty and clarity surrounding EEG tenders and tenders for H₂-ready power plants will be created this year (2023) within the framework of the Power Plant Strategy 2023 and that clarity surrounding the capacity markets is to be brought about promptly. The hydrogen demand assumed in the National Hydrogen Strategy is considered to be too low.

HEAT (BUILDINGS SECTOR)

The results of the 'Bottom-up study on path options for an efficient and socially acceptable decarbonisation of the heating sector' carried out by the Fraunhofer Institutes ISE and IEE show, just like the very controversial discussions on the German Buildings Energy Act (Gebäudeenergiegesetz, GEG), the complexity of the heating market and the need for local consideration and analysis when choosing an efficient decarbonisation path. Therefore, the NWR supports municipal heat planning as a crucial planning instrument for the heat transition, but recommends a more timely implementation in order to provide realistic opportunities for expansion when it comes to integrated network planning (electricity, heating networks, gas/hydrogen). It is only against the background of the scaling up that it would then be possible to come to reliable conclusions about the role of hydrogen with regard to users in today's heating market. The NWR is of the view that all technology options – heat pumps, heating networks, renewable heat and hydrogen – are needed for a successful heat transition. The results of the study also show that even with higher hydrogen prices, supply percentages in district and local heating of up to 40 per cent hydrogen are cost-optimal. Thus, all technologies should be anchored as equally possible compliance options under the German Buildings Energy Act (GEG) and be taken into account in the expansion of the infrastructure. Consequently, the network-based supply of climate-neutral hydrogen via the hydrogen backbone and downstream hydrogen infrastructures to the relevant consumers in the supply areas is an important building block for achieving medium-term and long-term climate goals in the heating market. The NWR therefore welcomes the fact that the use of hydrogen boilers or hydrogen CHP systems can be a technology option in buildings where there is no heating network and where heat pumps cannot be operated efficiently. Also welcome is the fact that in establishing hydrogen applications for the 2030 objective, the repurposing of gas distribution networks to hydrogen and the use of decentralised hydrogen boilers is also to be legally and technically possible. This is not least a matter of maintaining full coherence with the GEG, the forthcoming German Heat Planning Act (Wärmeplanungsgesetz, WPG) and the designation of gas network sub-areas as 'hydrogen network development areas' envisaged in the legislation. In this context, coherence refers to both the end uses for hydrogen and the transformation of infrastructures (also in terms of their planning, approval as well as the monitoring and consequences of deviations from the schedule within the meaning of Section 71k GEG, which is still to be adopted).

CREATE EFFECTIVE FRAMEWORK CONDITIONS

In order to achieve the objective underpinning the updated National Hydrogen Strategy, the creation of central framework conditions for the ramping up of the hydrogen economy is essential.

PLANNING AND APPROVAL PROCEDURES

For the expansion of the hydrogen production, transport, storage and import infrastructure, the construction of such plants or infrastructures needs to be accelerated. For this reason, the NWR welcomes the simplification and acceleration of the construction of plants and infrastructures as well as the reduction of regulatory barriers planned by the German government. In particular, in order to remain competitive in the face of emerging international competition, significant simplifications of these procedures are essential. The planned Hydrogen Acceleration Act should – as announced in the updated Strategy – be implemented by the legislature this year. This necessary acceleration must not, however, lower environmental standards. In addition, the NWR recommends involving citizens and associations at an early stage for the sake of acceptance and success.

SUSTAINABILITY STANDARDS AND CERTIFICATION

The NWR is of the view that the rapid market ramp-up of hydrogen urgently requires legally effective and, wherever possible, uniform sustainability standards and certification systems for hydrogen and its derivatives in the EU that are internationally compatible. In general, it should be noted that there is no objective for working towards an established market or the market phases necessary for this. Therefore, in addition to the objective through to 2030, future perspectives until at least 2035 should be in place and the essential market parameters (such as electrolysis capacity, demand) through to this point in time should be laid down. By the end of 2030, simplified regulations based on the Taxonomy Regulation should apply in a quick-start phase (for the hydrogen ramp-up and the desired learning effects). Going forward, the certification requirements for new plants should be increased accordingly only in the market penetration phase from 2030 onwards. These will be adapted to the progress of the hydrogen ramp-up in the medium term in the second half of the 2020s.

STRENGTHEN RESEARCH, INNOVATION AND TRAINING OF SKILLED WORKERS

It is also imperative to obtain legal certainty as soon as possible with regard to the planned European REACH framework for the use of essential materials in the hydrogen sector. In this respect, the express intention of the German government and the NWR is to monitor this process in parallel.

The NWR agrees with the importance of both research and development and the availability of skilled labour for the development of the global hydrogen economy. The objective and achievement of hydrogen lead projects such as H₂Giga, H₂Mare and TransHyDE should gain greater strategic visibility. In order to ensure a transparent role for science in accompanying the market ramp-up, it is necessary to classify the projects when defining market rules in the emerging market. In order for Germany to maintain its current position among the international competition for innovations and skilled workers, research and development (R&D) activities must focus on the topics that have already been prioritised and that promote industrial implementation. The NWR has already provided indications in this respect with its analyses of sector-specific R&D needs.

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It is necessary to promote the transfer from research projects through to technologies, to the industrial production of hydrogen systems and to the performance enhancement of material concepts, taking into account safety aspects as well as resource efficiency. At the same time, quickly realised pilot and reference projects that are based on technologies boasting great potential to increase economic efficiency and scalability and are carried out on an industrial scale, are both necessary and of vital importance. This requires concrete and quickly accessible funding opportunities as well as swiftly implemented approval procedures, for example for pilot and test plants.

In parallel to this, the necessary skilled workers must be rigorously trained – both at university level and in the area of vocational education and training. The NWR recommends maintaining an overview of the requirements and implementation measures in close collaboration with the chambers of industry, commerce and skilled crafts, and guaranteeing uniform standards and that all issues, be they technological or of another nature, are holistically covered.

CLOSING REMARK

This statement was issued at very short notice after the Strategy update. The National Hydrogen Council appointed by the German government is prepared to participate intensively with its expertise in the further implementation and development of the National Hydrogen Strategy.



THE GERMAN NATIONAL HYDROGEN COUNCIL

On 10 June 2020, the German Federal Government adopted the National Hydrogen Strategy and appointed the German National Hydrogen Council. The Council consists of 26 high-ranking experts in the fields of economy, science and civil society. These experts are not part of public administration. The members of the National Hydrogen Council are experts in the fields of production, research and innovation, industrial decarbonisation, transportation and buildings/heating, infrastructure, international partnerships as well as climate and sustainability. The National Hydrogen Council is chaired by former Parliamentary State Secretary Katherina Reiche.

The task of the National Hydrogen Council is to advise and support the State Secretary's Committee for Hydrogen with proposals and recommendations for action in the implementation and further development of Germany's National Hydrogen Strategy.

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