

The National Hydrogen Council calls for a responsible and differentiated approach to PFAS

The National Hydrogen Council (NWR) supports the regulation of per- and polyfluoroalkyl substances (PFAS) and the efforts of responsible use to protect people and the environment.

The discharge of PFASs into the environment poses a serious problem for humans and nature. The European Chemicals Agency (ECHA) aims to use the PFAS restriction proposal from 22 March 2023 as a means for a general phase-out of the use of PFASs in all sectors of business and industry (with a few exceptions). The basis for this is the state of knowledge on the hazard potential and the risks to the environment and human health as presented in the restriction proposal.

However, due to their unique physicochemical properties, PFASs are essential for many key technologies of the energy transition, such as for seals or membranes for fuel cells and electrolyzers. The general phase-out of PFASs could lead to a de facto blockade, and in any case to a drastic delay in the ramp-up of hydrogen technologies, which would jeopardise the energy transition and the achievement of the climate protection goals of the European Green Deal. Against this background, the NWR calls for a differentiated risk assessment and classification of the relevant hydrogen and energy transition technologies as 'essential use'¹.

Immediately after the ECHA's publication of the draft, the NWR pointed out the challenges involved in a first position paper² in February 2023. At the same time, the NWR is in dialogue with the relevant stakeholders from industry, energy and the hydrogen economy, among others. The findings from this dialogue have been incorporated into this NWR position paper.

The German government is called upon to accompany the consultation process on PFAS regulation in a responsible manner, to bring a strong position into the political process at EU level and to create legal certainty for all stakeholders as soon as possible. The objective of a future REACH regulation must be to bring the requirements for environmental protection in line with climate protection and socio-economic aspects. In this context, adequate control of the risks arising from the production, placing on the market and/or use of PFASs for humans and the environment, but also for the economy, is essential.

¹ The NWR defines essential use as the following: For many PFAS applications in the field of the hydrogen economy and the energy transition technologies, there are currently, and even in the longer term, no suitable alternatives (yet) foreseeable, so that industry and society will continue to be dependent on the use of PFASs in these application areas in the future. These technologies are essential and of socio-economic importance.

² NWR statement 'Effects of the ban on perfluorinated and polyfluorinated chemicals (PFAS)' from 1 February 2023.

1 MATERIALS WITH PFAS ARE ESSENTIAL FOR THE EMERGENCE AND RAMP-UP OF A HYDROGEN ECONOMY

PFASs are used in many products and manufacturing processes for technologies and plants of the hydrogen economy and energy transition when extreme conditions regarding production, manufacturing or operation coupled with a long service life make this necessary.

Many key technologies along the hydrogen value chain – from production, storage and transport to applications in the various sectors – cannot be developed, produced, optimised and scaled up without PFASs, especially fluoropolymers, in the foreseeable future.

The currently proposed general restriction on the use of PFASs would have a massive impact on the energy transition. An overly restrictive ban can lead to a de facto blockade, or in any case to a drastic delay in the ramp-up of environmental technologies. As a result, both the energy transition, the achievement of the climate protection goals of the European Green Deal and strategically important locations and jobs, today and in the future, in the EU and in Germany are at risk.

2 A DIFFERENTIATED RISK ASSESSMENT AND EVALUATION SHOULD BE INCORPORATED INTO A STRUCTURED EXCEPTION PROCESS

NWR members have recommended that companies, associations and institutions participate in the current consultation process and have asked them to provide the NWR with the non-confidential part of their submissions. These answers have been incorporated into this NWR position paper.

The NWR recommends revising Annex XV of the restriction proposal from 22 March comprehensively and aligned with existing law and as part of a differentiated risk assessment.

For many PFAS applications in the field of the hydrogen economy and the energy transition technologies, there are currently, and even in the longer term, no suitable alternatives (yet) foreseeable, so that industry and society will continue to be dependent on the use of PFASs in these application areas in the future. As these technologies are essential and of socio-economic importance, they must be classified as 'essential use' as part of the REACH process and treated accordingly.

The NWR recommends setting up and establishing a clear and transparent process for the reapplication, review and extension of exemptions (evaluation) and formulating the result in a restriction dossier in a clear and legally secure manner in a timely manner.

The following aspects should be taken into account:

- ◆ A holistic approach for hydrogen and energy transition technologies at application level that adequately implements compliance with technical, environmental, health and safety criteria should be adopted. In general, the advantages of a PFAS-free solution should outweigh the disadvantages of a PFAS-containing solution when evaluating the alternatives.
- ◆ It must still be possible to manufacture the products exempted from the restriction in the EU. This means that exceptions must also take into account, for example, the corresponding preliminary stages, processing aids and intermediate products in the entire supply chain. Existing plants cannot be affected by this.

- ◆ Appropriate transitional periods are to be defined for known alternative substances that are to be assessed as equivalent. In order to create the necessary investment security, the usual production and life cycles apply for open-ended applications under the classification of 'essential use'.
- ◆ All exemptions – both those with extended transition periods and those classified as essential use – are to be evaluated in regular cycles. It will also evaluate the extent to which PFAS-free alternatives have been developed in the meantime and whether and when they will be industrially available.
- ◆ The risks to human health and the environment must be adequately checked. This requires a comprehensive risk analysis of the input of PFASs into the environment based on the specific source. Regulation should take into account and assess where emissions occur along the value chain (production, processing, use, recycling, end-of-life/disposal), what risks are associated with them and how these can best be minimised and limited.

3 A CLOSED-LOOP SYSTEM IN THE SENSE OF THE EUROPEAN GREEN DEAL ENSURES RESPONSIBLE HANDLING OF PFASS

The NWR recommends defining clearly regulated disposal streams, taking into account aspects such as take-back obligation, recycling, waste regulations or even re-use.

The EU Battery Regulation³ already sets a positive example here. It contains both take-back obligations by manufacturers or distributors of systems and the obligation to steadily increase the recycling share in terms of raw materials side. In this way, the entry into the circular economy is also motivated by legislation.

4 FURTHER R&D ACTIVITIES ARE NECESSARY

The continuation and expansion of governmental and industrial R&D activities are necessary to support the questions, objectives and successful implementation of the ECHA procedure. The focus must be on the development and evaluation of PFAS-free alternatives for the key technologies of hydrogen ramp-up and the energy transition with the aim of eliminating PFASs in the long term.

In addition, the NWR considers the following priorities, which should also be included in the funding programmes, to be necessary to safeguard the current and future use of PFASs:

- ◆ Establishment and expansion of the analysis of the PFASs used, including precursor substances, processing aids, intermediates and by-products used, with regard to detectability within the required detection limits and evaluation of their risk potential
- ◆ Clarity about the type and quantity of possible input pathways as well as their limitation and best possible avoidance

³ EU Regulation 2023/1542

- ◆ Selected issues within the framework of the disposal concepts such as
 - ◆ sorting of materials and composites with PFASs
 - ◆ Recycling of materials and composites with PFASs
 - ◆ Materials and product design with a focus on sustainability, recycling and the circular economy
 - ◆ New business models for re-use of components, assemblies or systems
- ◆ Prevention and elimination of contamination due to PFASs
- ◆ A clean room approach to neutral data collection and use of these data in the evaluation process

5 A CAUSATION-BASED LIABILITY FOR ENVIRONMENTAL DAMAGE MUST BE ESTABLISHED

A causation- and risk-based liability of the damage cases already occurring today and in the future and the financing of the burdens, such as the treatment costs for the drinking water supply, should be developed for the further use of PFASs in essential hydrogen and energy transition technologies. The key here must be a socially and economically fair system for dealing with PFAS pollution, which at the same time also promotes incentives for further research, development and marketing of environmentally friendly raw materials and products.



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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