NATIONALER WASSERSTOFFRAT

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EU Commission's proposal to amend the Renewable Energy Directive (RED)

INITIAL SITUATION/BACKGROUND

The Renewable Energy Directive (RED) is a key element for further developing the promotion and use of green hydrogen and its derivatives (renewable fuels of non-biological origin [RFNBOs]) in the EU for two reasons:

The RED stipulates which sources of energy member states will promote in future as part of the national implementations it outlines and which production requirements apply for crediting. This is done via its definition of renewable energy sources and their methods for calculating GHGs, as well as its definition of sustainability requirements. As other climate-related regulations and directives refer to the definitions of the RED, the RED is central to the integrity and effectiveness of the EU's climate change architecture.

There are still no essential basic framework conditions in place for RFNBOs: the criteria concerning whether power taken from the electricity grid used to calculate GHG emissions during production should be considered renewable electricity are to be presented by the EU Commission by the end of 2021. The same applies to the methodology used to calculate GHG emissions from RFNBOs – which is not yet available. Both delegated acts are necessary to make investment decisions in RFNBO production plants. The German National Hydrogen Council (Nationale Wasserstoffrat, NWR) therefore calls on the EU Commission to adopt these delegated acts as soon as possible in order to create a basis for investments in green hydrogen and its derivatives. The NWR also supports extending the definition of RFNBOs provided in the amendment to the RED to all sectors of application. The reason for this is to ensure a uniform definition across all sectors of application, as RFNBOs are also needed for climate protection purposes in sectors other than the transport sector.

In addition to defining renewable energy sources, the RED sets minimum targets for member states concerning the usage of renewable energy. The RED distinguishes between cross-sectoral and sector-specific requirements and targets for member states. Targets for the industrial sector are set for the first time in the proposal for the amendment to the RED. The amendment also includes specific targets for the heating sector (including cooling) as well as for the transport sector and renewable electricity generation.

The NWR sees green hydrogen and its derivatives as key elements in achieving the EU's climate protection goals. The NWR therefore welcomes the increase in the RED's level of ambition, which is evident throughout every proposed amendment, and the increased rate of RFNBO usage they envisage.

THE GERMAN NATIONAL HYDROGEN COUNCIL'S SUGGESTIONS

1. Incentive structures for cost-effective production of RFNBOs within the EU

The NWR supports increasing the EU's cross-sectoral renewable energy use target from 32 per cent to 40 per cent (amendment to Article 3). The NWR sees the adjustment of the calculation methodology used to do so (amendment to Article 7) as fundamentally positive, since the selected methodology described in the proposal (in contrast to the previous one) clearly defines that RFNBOs are accounted for in the respective sectors of application and that the losses in the production of RFNBOs are also accounted for. Also, the unclear wording of the existing RED, which does not clarify how RFNBOs are included in the calculation of the overall target, has been removed from the RED. However, the NWR is critical of the following potential effects of this amendment. How RFNBOs are credited in each respective sector of application may lead to a situation in which producing countries within the EU that have advantageous conditions for producing RFNBOs at low cost do not export as much as they possibly can to other EU member states. This can happen because, when RFNBOs are exported to another EU member state, the contribution to achieving the national target is fully credited to the renewable share of the member state in which the RFNBOs are used. The proposed regulation therefore risks hindering the cost-effective production and use of RFNBOs in the EU. From the NWR's point of view, this risk can be greatly reduced by proportionately sharing the contribution to the cross-sector and transnational target set for the share of renewable energy in the EU between the producing country and the country of use (for example 50/50).

2. Obligation for member states to use RFNBOs in the industrial sector

The proposed amendment to the RED stipulates requirements for the use of renewable energy in the industrial sector for the first time (Article 22a). Among other things, the EU Commission is proposing that member states be required to ensure that in 2030 at least 50 per cent of the energetic and non-energetic use of hydrogen in the industrial sector be carried out using RFNBOs. The NWR sees the industrial sector as a key area of application for climate-neutral hydrogen and its derivatives. It therefore fundamentally supports the EU Commission's request to oblige member states to use RFNBOs in the industrial sector.

Part of the transition to becoming a climate-neutral industry is converting industrial processes from using fossil fuel to using climate-neutral hydrogen. In most cases, this is not only associated with shifting from using fossil fuels to using climate-neutral hydrogen; it also involves modifying processes and systems. The steel industry constitutes a key point of application in the industrial sector for this transition: the switch from primary steelmaking to direct reduction enables climate-neutral hydrogen to be used in place of coal, thereby creating a very cost-efficient and effective way to reduce GHG emissions. The NWR therefore recognises the need for using climate-neutral hydrogen by the year 2030, above all in the steel industry, which could potentially see a hydrogen demand of up to 0.6 million t.

Therefore, with regard to the member states' obligation to use RFNBOs in the industrial sector as required by the RED, the NWR recommends the following:

- The obligation stipulated by the RED applies to the member states, not companies in the industrial sector. Accordingly, the NWR sees the member states as having a duty to support the availability of climate-neutral hydrogen for the industrial sector by utilising suitable instruments (such as contracts for difference). Setting a mixing quota for the user that is analogous to that of the transport sector seems unsuitable, as doing so does not enable production processes that can be converted to using hydrogen to follow through with the conversion.

- The EU Commission's proposal uses the demand for hydrogen that occurs in the industrial sector during each year of the obligation as the reference value for the overall obligation. There is currently a demand for hydrogen, especially in the chemical industry. In 2030, despite the increasing demand for hydrogen in the steel production sector, the larger share of the demand will also be in the chemical industry. The NWR recommends that the different demands in the industrial sub-sectors not be used as a basis for allocating climate-neutral hydrogen. The NWR sees allocating climate-neutral hydrogen to steel production as an effective and efficient way to contribute to reducing GHG emissions.

- The RED's obligation for using climate-neutral hydrogen in industry is solely related to RFNBOs[1]. In contrast to the other sectors (electricity, heating, transport), the industrial sector (excluding refineries) is not part of the target described in Article 3. Therefore, in this sector, it is possible to take an approach that is more open to technology and to develop a mechanism for coupling other ways of using climate-neutral hydrogen. The NWR has various views on how to develop such a mechanism. On the one hand, such a mechanism would contribute to the rapid development of a consistent set of rules. On the other hand, such a mechanism would extend the scope of the RED. Both aspects require intensive examination.

- Designing the obligation in a way that is overly ambitious carries the risk of delaying or preventing the necessary transition to using climate-neutral hydrogen in industrial processes. This is explained by the fact that as the demand for hydrogen in the industrial sector increases, the cost of fulfilling the commitment increases, in addition to the cost of converting the processes. Therefore the NWR is proposing a mechanism for determining the amount of the obligation (see Annex). Based on this and the current projection for the industrial hydrogen ramp-up, the NWR considers the RFNBO quota level of 50 per cent of the industrial sector's hydrogen demand proposed in the RED to be too high. In relation to the current industrial hydrogen demand, an RFNBO quota level of 30 per cent seems ambitious, but also realistically achievable.[2]

[1] The RED refers to the use of renewable energies, specifically green hydrogen and its derivatives.
[2] The current hydrogen demand in the industrial sector, excluding use in German refineries, is around 1.1 million t. This would put the target for using RFNBOs in the industrial sector in 2030 at around 0.3 million t.

3. Reducing the GHG emission intensity of energy used in the transport sector

With the amendment of Articles 25 and 26, the EU Commission is proposing a switch from a system based essentially on a mixing quota for renewable fuels for the transport sector to one based on a requirement to reduce the GHG emission intensity of the energy used in the transport sector (GHG quota). Such a system provides a stronger incentive for using fuels with a strong GHG emission reduction effect compared to that of fossil fuels. The NWR sees this as a way to positively impact the further development of the RED's targets for the transport sector and supports this general change in the funding mechanism. Another reason for their support is the fact that when compared to using fossil fuels, using RFNBOs has the potential to greatly reduce GHG emissions.

The proposal is to reduce GHG emission intensity at an ambitious rate of 13 per cent, whereby, unlike the previous RED, no multipliers can be used to credit the target. In addition, the scope of the RED will be expanded and, unlike before, the targets will cover the energy used throughout the entire transport sector. The NWR considers the level of ambition defined in this way to be ambitious in the European context, but still goal-oriented and achievable. However, the NWR recommends that as member states with strong economies implement the directive, they use the RED's calculation as a basis to define targets that can significantly exceed the 13 per cent target. Eliminating the multipliers used to reach the target also results in an instrument that is easier to understand and more transparent than before, which the NWR welcomes.

However, the NWR sees potential for improving the RED's detailed design and recommends the following:

- The NWR has differing viewson the proposed sub-quotas for advanced biofuels and RFNBOs. On the one hand, there is no need for mandatory sub-quotas for these fuels, as they are the only two options for compliance that do not involve a crediting cap, besides the option for crediting GHG emission reductions resulting from the use of electricity in the transport sector. Due to how ambitious these options are, they will only be used as options for reaching the target in an environment of mutual technology-related competition if they are sufficiently available. On the other hand, sub-quotas in the transport sector lead to a concerted effort to achieve the respective targets. In particular, an ambitious sub-quota for RFNBOs would lead to a clear focus on proactively developing the hydrogen infrastructure that is so direly needed for the transport sector and would free up additional funds for bringing hydrogen to market.

- In the RED's proposal, a higher reference emission factor for fossil fuels is applied when calculating GHG emission reductions in the transport sector when using electricity than when using other sources of energy (183 g CO_2e/MJ for electricity versus 94 g CO_2e/MJ for all other energy sources). The NWR views this reference emission factor as methodologically unsuitable for representing the level of emissions reduction achieved when using electricity for road transport purposes, and believes it may result in overestimating said level of emissions reduction. Avoiding the use of liquid fossil fuels and instead using electricity for road transport purposes (replacing fossil fuel combustion engines with battery-powered electric motors) reduces GHG emissions. The fossil fuel comparator of 94 g CO_2e/MJ is therefore a suitable reference for this – as it is for all other sources of energy. Therefore, the NWR recommends that this be the GHG calculation methodology (as described in Article 38 of the German Federal Immission Control Act [Verordnung zur Durchführung des Bundes-Immissionsschutzgesetzes, BImSchV]) used in the RED when calculating GHG emission reductions regarding the use of electricity for road transport purposes.

- The RED proposes using the average amount of GHG emissions created by a member state's electricity system as a basis for calculating GHG emissions when directly using electricity as well as when producing RFNBOs. However, the Fit for 55 plan proposes the possibility of incorporating the GHG emissions created by renewable electricity generation capacities into the GHG emissions calculation if certain criteria for the procurement of electricity are met. There are different criteria for this in the transport section of the RED's proposal for directly using electricity for road transport purposes and producing RFNBOs. The NWR advocates that the same criteria for electricity procurement be applied in the RED for all sector coupling options in order to be able to incorporate the use of renewable electricity into the GHG emissions calculation.

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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APPENDIX

The NWR's proposal for determining the extent of the obligation

The proposal to reduce the RFNBO quota level to 30 per cent is based on the following derivation:

- One year after the amendment to the RED enters into force, the member states must submit a roadmap for the entire industrial sector's volume requirements for hydrogen (excluding use in refineries) by the year 2030. This roadmap should also include the need for any converted process in the industrial sector that does not have a current demand for hydrogen. The resulting total hydrogen demand in the industrial sector constitutes the basis for the member states' contribution obligation for 2030.

- The extent of the obligation for the member states to use climate-neutral hydrogen in the industrial sector in 2030 is determined by the RFNBO quota level (target value in percentage) and the hydrogen demand for 2030 determined via the roadmap (see step 1). The quota level should be oriented towards the transition of the industrial sector assumed in the roadmap and vary accordingly. The more often additional, new hydrogen customers in the industrial sector (for example, the steel industry) appear in the roadmap, the lower the quota level should be. The NWR recommends developing a suitable mechanism for this dependency.

An advantage of the above-mentioned approach arises from the fact that – unlike in the EU Commission's proposal – the volume requirement for using RFNBOs in the industrial sector is made known one year after the amended RED comes into force and a fixed planning horizon is established for the member states and the industrial players.