



German National Hydrogen Council recommends standardised taxation of hydrogen in the mobility sector

EXECUTIVE SUMMARY

Hydrogen is an important technology option for reducing greenhouse gas (GHG) emissions in mobility. Both fuel cell applications and hydrogen combustion engines meet the requirements for the current proposal of the EU Council Presidency for a zero-emission heavy-duty commercial vehicle (CO₂ emissions according to VECTO¹ less than 3g_{CO₂}/tkm)².

To date, hydrogen taxation has been subject to different taxation principles depending on the technology: Fuel cell drives are tax-exempt while hydrogen combustion is subject to taxation. As a result, refueling vehicles with a hydrogen combustion engine is not allowed by filling station operators such as H2 Mobility since the supply of hydrogen is currently tax-free.

In order to realise and utilise the full GHG reduction potential in road transport during the market ramp-up phase, the German National Hydrogen Council (NWR) recommends creating opportunities for the equal tax treatment of both fuel cell drives and hydrogen combustion engines. This position paper outlines solutions to this problem.

1 CURRENT STATE OF TAXATION PRINCIPLES

The Energy Taxation Directive is an instrument for regulating the EU internal market with regard to energy taxation for electricity and fuels. It is implemented nationally in Germany through the Energy Tax Act (EnergieStG). Hydrogen is not explicitly recognised as an energy product in the current Energy Tax Act (Section 1(2) EnergieStG). According to Section 2(4) of the Energy Tax Act, energy products that are not covered but are used as fuel are subject to the similarity principle. Under this paragraph, all energy products not mentioned are subject to the same tax that is closest to their intended use and nature. The EU Energy Taxation Directive 2003/96/EC stipulates the principle of similarity in Section 2(3). Using hydrogen as a fuel in both a hydrogen combustion engine and a fuel cell should therefore be taxed according to this principle. There is no legal definition of the term 'fuel' in either the EU Energy Taxation Directive or the Energy Tax Act. However, the Federal Ministry of Finance has clearly formulated definitions in its energy

¹ VECTO: Vehicle Energy Consumption Calculation Tool of the EU.

² 3 g CO₂/tkm corresponds roughly to an admixture of 1.6 litres of diesel per 100 km in long-distance transport.

tax regulation (N 09 2014 No. 29) of 31 January 2014 (Chapter 1, Sections [2] and [3]), whereby hydrogen used in a fuel cell is not covered by the Energy Tax Act. Directive 2003/96/EC permits a tax exemption for hydrogen used in fuel cells in accordance with Article 15. This has been implemented in Germany and the vast majority of EU countries.

Hydrogen is therefore subject to energy tax as a fuel if it is used for the direct generation of mechanical energy in an internal combustion engine. However, the definition of the term 'fuel' means that the use of hydrogen in a fuel cell to generate electricity is not taxed, as the conversion into electricity is not covered by the Energy Tax Act. The Electricity Tax Act is not applicable either since it only relates to the taxation of grid-connected electricity. Only hydrogen for use in internal combustion engines is taxed in Germany as a result. Hydrogen is currently taxed at the same rate as natural gas. This is reduced to €0,55/kg_{H₂} for a limited time and will be increased to the normal tax rate of around €1,25/kg_{H₂} for 2027 and subsequent years.

It is currently not possible to automatically distinguish for what purpose hydrogen is being purchased at a filling station. As a result, refuelling vehicles with a hydrogen combustion engine is not allowed by filling station operators such as H2 Mobility since the sale of hydrogen is tax-free. Refuelling vehicles with a hydrogen combustion engine is therefore not possible at this time. Special tax approval and invoicing are required.

2 HYDROGEN AS AN IMPORTANT TECHNOLOGY OPTION FOR MOBILITY

Both fuel cell applications and hydrogen combustion engines can reduce greenhouse gas (GHG) emissions in the transport sector. Fuel cell applications in particular are an option for reducing GHG emissions, especially in road freight transport. According to the current proposal of the EU Council Presidency and the EU Parliament to amend the CO₂ regulation (EU) 2019/1242, it can be assumed that heavy commercial vehicles with CO₂ emissions according to VECTO of less than 3g_{CO₂}/tkm will be considered a zero-emission vehicle by definition. Vehicles with hydrogen combustion engines can meet this requirement and are an option for achieving the CO₂ fleet targets, especially in the short term. Their significance for reducing GHG emissions in road freight transport over the long term remains to be seen. Many lorry manufacturers are therefore extensively developing and testing the use of this alternative technology. Prototypes are already in everyday use today. A lorry manufacturer³ has publicly announced a small series for 2025 and possible series production for the beginning of 2026.

3 AMENDMENT OF THE EU FRAMEWORK DIRECTIVE

As part of the 'Fit For 55' package, the European Commission published a proposal on 14 July 2021 to amend the Energy Taxation Directive (ETD⁴) 2021/0213 (CNS). In this proposed amendment, hydrogen is included for the first time as an energy carrier with the CN code 2804 10 00 in Section 2(1d). If the hydrogen is produced according to the criteria for renewable fuels of non-biogenic origin (RFNBO) in accordance with Delegated Regulation (EU) 2023/1184, the tax rate would be at least €0.02/kg_{H₂}. The tax rate shall be at least €0.85/kg_{H₂} in all other cases. A tax exemption option for the use of hydrogen in fuel cells continues to be provided. The problem of different taxation will therefore persist even though the difference in case of RFNBO is very small.

³ MAN, Heavy Duty Congress, Duisburg, 9 November 2023.

⁴ Energy Taxation Directive.

However, the proposed amendment to the Energy Taxation Directive has not yet been adopted. An amendment requires unanimity among the member states, but so far the positions are still far apart with no prospect of agreement. It remains uncertain whether the directive will be adopted. Even if it is, this will in any case extend well into the new legislative period of the EU Parliament. It is even possible that there will be no changes at all: an amendment to the ETD previously failed almost ten years ago due to the required unanimity.

Since the problem that no agreement is in sight at European level will persist for at least the next few years, a solution at national level is needed.

4 PROPOSED MEASURES

To ensure technological openness and equal treatment of the two emission-free technologies, hydrogen should be treated uniformly for tax purposes regardless of its use as a fuel in a vehicle. The following possible measures are proposed:

- ◆ To ensure the fastest possible resolution, it should be possible to identify the intended use of the hydrogen using a fuel card. The corresponding vehicle to be refuelled must be listed on this fuel card. Thus the refuelling of prototypes can be guaranteed without legal changes. However, this quick solution is not an option for the market ramp-up phase. Automated solutions for unique vehicle identification should therefore be developed in the medium term.
- ◆ The market ramp-up can be realised without restrictions by amending the Energy Tax Act. Options therefore have to be established for the equal tax treatment of both fuel cell drives and hydrogen combustion engines. Suspending taxation on largely climate-neutral hydrogen until 2035 in order to support the necessary hydrogen mobility is recommended. Alternatively, the suspension of taxation can be ordered until economic competition has been established.
- ◆ The Energy Taxation Directive amendment should be implemented as a long-term solution. However, the current draft still leads to unequal treatment of the two emission-free drive technologies as described above. This directive is also not expected to be implemented before 2026. That will considerably slow down the establishment of emission-free mobility solutions in road transport. Alternatively, a separate hydrogen regulation for mobility could offer a faster solution.

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.

◆ **Contact:** info@leitstelle-nws.de, www.wasserstoffrat.de/en