Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

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Fact Check

Renewable energy in the transport sector

On 24 September, the BMU published a ministry draft on transposing the EU Directive on renewable energy in the transport sector (RED II), and submitted it for consultations with associations (ending on 15 October). Our aim is to map out a responsible and realistic path for supporting different renewable energies in the transport sector over the coming years (see ministry drafts for the act and the ordinance).

We want to meet our EU commitments for 2030 as early as 2026. In the second half of the 2020s we will take the next major step towards exceeding the target under RED II.

We do not simply want to tank up indiscriminately with yet more alternative fuels. We want to give targeted support to alternative fuels which do not harm the environment. These are advanced biofuels for commercial vehicles and renewable electricity-based fuels for aviation. We also want to expand the charging infrastructure for electric vehicles.

What we can achieve with the ministry draft

- We are significantly increasing the share of (advanced) biofuels from residual waste such as straw and manure
- To promote climate action in transport, we are using biofuels from waste cooking oil and animal waste products which do not undergo material recovery
- We are ramping up the production of green hydrogen in refineries to a considerable degree
- We are expanding production of electricity-based liquid fuels by introducing a mandatory quota for aviation
- We are establishing incentives to expand and operate charging infrastructure, in order to encourage more electric mobility.

Increasing biofuels from food and feed crops is not an option for us. Clearing forests and destroying nature for the sake of biofuels is unacceptable. Therefore, up to 2026, we will gradually ban the use of environmentally harmful palm oil as a fuel and place a strict limit on biofuels from foodstuffs, while also increasing the share of truly sustainable options. In stipulating these restrictions, we are also implementing the provisions which, quite rightly, are laid down in RED II.

A number of stakeholder groups have criticised the ministry draft. Considering their respective interests, this is understandable to some extent. However, we are quite prepared to address their criticism, as we firmly believe we have

excellent arguments in support of our approach. The following gives some examples of common criticisms and our responses to them.

CRITICISM: The **draft does not go far enough**; we need a higher share of renewable energy. Only 14% renewables in transport by 2030 is insufficient.

BMU response

The BMU wants to meet the EU target for transport much sooner than currently required by the EU, namely as early as 2026. Our proposal therefore envisages a swift ramping up of the renewables' share in transport, in fact in half the time stipulated by the EU. Long before the deadline we will also review our target, raising it accordingly in 2026 so that we significantly exceed the EU targets by 2030. That is already set out in the National Hydrogen Strategy and is a part of our ministry draft for transposing RED II. This hinges on the technical state-of-the-art and the knowledge gained from research by that time. Moreover, by 2026 we will bring the share of biofuels from palm oil down to zero. Real climate action is only possible with biofuels which do not harm the environment in other areas. That is why we are building on sustainable options like advanced biofuels and green hydrogen.

CRITICISM: The **combustion engine** is and always will be a fixture on our roads. We need a fuel that makes a climate-neutral combustion engine possible.

BMU response

It is true that as things stand we will need alternative fuels to make transport completely climate neutral. But whether and to what extent their use makes economic or ecological sense is a question of the available alternatives and level of efficiency: For instance, it is not technically possible to make aviation and shipping fully electric. In this case, the use of electricity-based fuels is appropriate, and that is why we want to introduce the first electricity-based fuel quota for aviation. Commercial vehicles and HGVs with combustion systems are also likely to be partly dependent on alternative fuels. For passenger vehicles, electric mobility is the most efficient alternative. For vehicles already on the roads we are looking to alternative fuels, as long as they are climate-friendly and environmentally sound. These may be advanced biofuels (e.g. from residues such as straw and manure) or waste cooking oils, but also green hydrogen, which is used in fuel production. We do not consider biofuels from foodstuffs, especially palm oil, to be a sustainable option.

CRITICISM: The act disadvantages **biofuels** and favours other fuels. It is a de facto restriction on biofuels from foodstuffs and feed.

BMU response

Whether alternative fuels are good or bad for the environment depends on the raw material. In the case of many fuels, "bio" does not automatically equate to "ecological". Any support for biofuels used in the mineral oil industry and paid for by consumers at the petrol pump must represent added value for climate action. For many biofuels, this is not the case.

For conventional biofuels, rape seed or maize are cultivated on fields that are consequently not available for food crops. Any expansion of the farmland means that food production encroaches on natural areas, and may lead to forest clearance and draining of bogs. This releases huge quantities of greenhouse gas, with emissions sometimes far exceeding those of fossil fuels. The habitat of many animals and plants is also destroyed.

Advanced biofuels, on the other hand, are produced e.g. from residues such as straw and manure. This is a sustainable form of recycling which should be supported. Our draft act and ordinance envisage a significant increase over the next ten years of the mandatory sub-quota for advanced biofuels (from the current 0% to 1.75% in 2030).

Waste cooking oil should also continue to have a second use as a fuel. One new provision in our draft allows fuels from animal waste products to be counted towards the quota. Palm oil, on the other hand, is to be completely excluded, and we are gradually phasing out its use up to 2026.

CRITICISM: The BMU is blocking the **ramp up of green hydrogen production**, and ignoring the decisions set out in the National Hydrogen Strategy.

BMU response

In fact, quite the opposite is true. The BMU draft commits to a very ambitious ramp-up even exceeding the National Hydrogen Strategy decisions. This gives the hydrogen sector an enormous boost.

For our plans, we need at least 1.0 GW in 2026. In 2030 we expect to need between 2.4 GW and 3.6 GW of electrolysing capacity in order to meet the new RED II provisions. The National Hydrogen Strategy only envisages 2 GW by 2030 for the transport sector.

Background

- In 2026 we will raise the greenhouse gas reduction quota (GHG quota) from 6% to 7.25%. Fuel producers will then have to lower the CO_2 emissions of their products even more sharply. They will no longer be able to do this with biofuels from palm oil, as we want to gradually phase out the use of palm oil by the end of 2025. The higher quota and the capacities freed up by the phase out of palm oil create space and incentive for other renewable energies. Green hydrogen can fill this "space" very well, and be credited towards the GHG quota. At present, we expect at least 0.75 GW of green hydrogen electrolysing capacity for use in refineries. This capacity is to increase to 2 GW in 2030 following the update of the GHG quota planned for 2024/2025. In refineries, green hydrogen will replace the fossil-based hydrogen currently in use, making the fuel production process more climate-friendly.
- The criteria for electricity purchase for electricity-based fuels and hydrogen still have to be specified by the European Commission in a delegated act, expected in 2021. Only then we will be able to amend the 37th Federal Immission Control Ordinance (BImSchV) in a second step towards transposing RED II. The current ministry drafts do not envisage any amendment to the 37th BImSchV in this context.
- In parallel, the mandatory quota for aviation will take effect, making further electrolysis capacity necessary. An additional 0.4 GW of electrolysis will be needed for electricity-based kerosene production by 2026. This figure will quadruple by 2030, to 1.6 GW.

CRITICISM: By not setting a funding quota for **synthetic fuels/e-fuels**, the BMU is blocking a key technology and denying passenger vehicle combustion engines the chance to become green.

BMU response

To achieve the climate targets in transport we need to use all available environmentally sound fuel options. In future, electricity-based fuels derived from green hydrogen will be indispensable for making the transport sector climate neutral. However, renewable electricity is a valuable commodity which should first be used in sectors which have no climate-friendly, more efficient alternatives to direct electricity. This applies to aviation, shipping and in part to heavy goods traffic.

Like biofuels, e-fuels in motor vehicle transport count towards the mandatory GHG quota, and as such are supported. Thus there can be no question of them being blocked. Those who wish may use e-fuels and count them towards the quota. In this way, electricity-based biofuels have the potential to contribute to greenhouse gas reduction in the existing fleet. We do not, however, feel it is appropriate for the state to impose an obligation to use a technology which, in the transport sector, is comparatively inefficient both economically and ecologically.

For passenger vehicles, electric mobility is the most efficient alternative. For instance, five times as much electricity is needed for the manufacture of the drivetrain of a combustion engine passenger vehicle using synthetic fuels than for the drivetrain of an electric vehicle which uses the electricity directly. Green electricity is still a scarce commodity and other sectors of industry also need to be supplied. For that reason, the rapid continued expansion of renewable energy is one of our key objectives. In each sector, we have to choose the most efficient option for combating climate change.

Background

- Aviation in particular will depend on liquid fuels for the foreseeable future. That is why we propose first establishing a mandatory quota for electricity-based fuels in aviation. That will drive development of this key technology forward and create a sales guarantee for this fuel. That in turn means planning certainty for installation construction and additional electrolysis capacities for green hydrogen.
- Fuel production still uses fossil-derived hydrogen. In future this will be replaced by green hydrogen, which the mineral oil industry can credit towards the GHG quota. That will give green hydrogen technology a further boost.
- The electricity purchase criteria for electricity-based fuels still have to be specified by the European Commission in a delegated act, expected in 2021. Only then we will be able to amend the 37th Federal Immission Control Ordinance (BImSchV) in a second step towards transposing RED II. The current ministry drafts do not envisage any amendment to the 37th BImSchV in this context.

CRITICISM: Ambitious climate action targets in the transport sector cannot be achieved without electricity-based fuels (e-fuels). But the BMU is blocking the market introduction of e-fuels as a pure fuel for road transport, thus preventing them from becoming established on the market. The BMU is obstinately limiting its support to electric vehicles, so preventing e-fuels from competing.

BMU response

The current law already allows the marketing of e-fuels. Up to around 26% of biofuels may be blended with conventional diesel in an admixture. In the current market, this technical limit value for admixtures is not a real restriction on sale, since at present 0% of e-fuels are used in the transport sector. Therefore, the admixture limit value offers enough leeway to facilitate the market ramp-up of e-fuels in the coming years. The current focus in this context are paraffinic diesel fuels. The main reason for excluding paraffinic diesel as a pure fuel from the 10th BImSchV was not climate-related, but rather the technical issue of vehicle compatibility, as well as consumer protection. Manufacturer authorisations for paraffinic diesel fuels are still the exception among registered vehicles and are not available for all new vehicles either. Vehicle owners who use this fuel without manufacturer authorisation do so at their own risk and are liable for any damage.

Background

- In terms of combating climate change, it makes little difference whether a few vehicles run on 100% e-fuels or all vehicles use a lower percentage admixture, as permissible under current law.
- We currently have 5% biofuels and 0% electricity-based fuels in the transport sector.

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