

EU climate law and climate protection legislation call for effective climate protection measures in transport

Utilise sustainable biomass and biofuel potential now

1. Higher climate protection targets in 2030 and Brexit mean that national climate protection commitments need to be adapted

In October 2019, the leaders of the European Union (EU) resolved to achieve climate neutrality by 2050 based on ambitious climate protection policies aimed at the future. The EU Commission submitted the proposal for European climate legislation as part of the “Green Deal” in December 2019. At this time, it was not possible to foresee the challenges the EU would have to confront in light of the need to overcome the COVID-19 pandemic and its consequences.

Irrespective of this ongoing crisis, the EU is firmly standing by its desire to achieve climate neutrality by 2050. In this context, the climate protection target for 2030 is to rise from 40 to between 50 and 55 percent reduction in emissions in comparison to 1990. The target attainment measures are to be integrated in a programme – unprecedented in the history of the European economy – financed by national and EU funds. The leading Environment Committee of the European Parliament also discussed the proposal to codify the reduction in greenhouse gas emissions by 65 percent by 2030 as a binding commitment. Irrespective of what compromise the European Parliament and EU Council of Ministers reach, this entails examination and possibly recalibration of the allocation key in the European “Effort Sharing Regulation” (ESR), not least also on account of the requisite compensation for the climate protection commitment lost by the departure of Great Britain from the EU.

2. Challenge associated with climate protection in the transport sector is becoming more urgent – utilising existing biofuel potentials and synergies

Against this background, the EU Commission is evaluating the “Integrated National Energy and Climate Plans (NECPs)” presented by the Member States with respect to the effectiveness of the national climate protection measures listed. The German Federal Climate Change Act stipulates sector-specific greenhouse gas maximum volumes for the individual EU emission trading system (ETS) and ESR sectors for the commitment period 2021 to 2030. If these are exceeded, compensatory emission rights must be purchased with tax revenues from other Member States who outperform their commitments. It is currently unresolved whether the EU Commission will deem the measures listed in the German NECP adequate.

Particularly problematic is the fact that the transport sector in Germany has so far not made any contribution to climate protection. Efficiency gains in engine development came at the cost of a higher power to weight ratio and greater mileages in the car sector. Likewise, road transport and, at the same time, competitive pressure have increased in this sector, with the

result that the percentage of transport companies located in non-EU states is shaping the road landscape in Germany. Consequently, these companies are also determining the speed of a drive change in heavy-goods transport.

Transport is therefore an especially important sector both in respect to general economic significance as well as achieving national and European climate protection targets. The German Federal Climate Change Act and the Climate Protection Programme of the Federal Government for implementing the Climate Protection Plan 2050 form the climate policy framework on a national level (cf. Table).

The BBE has found that similar regulations would have to be introduced and implemented in all Member States in order to prioritise the measures available in practise according to their effectiveness with respect to the commitment period 2021 to 2030, and thereby enable technologically open-minded synergy effects and innovations associated with them. In view of this target objective, the EU Commission must examine the national energy and climate plans submitted by the Member States.

Sustainably certified biogenic raw materials and biofuels already constitute effective measures **now**. **Without biofuel, greenhouse gas emissions in the German transport sector for 2018 would be approx. 9.5 million tonnes Co_{2eq} higher¹.**

Table: Greenhouse gas maximum volumes according to sector (as per Climate Protection Act)

Tabelle: Jahresemissionsmengen von CO₂

Jahresemissionsmenge in Mio. Tonnen CO ₂ - Äquivalent	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Energiewirtschaft		257								175
Industrie	182	177	172	168	163	158	154	149	145	140
Gebäude	113	108	103	99	94	89	84	80	75	70
Verkehr	145	139	134	128	123	117	112	106	101	95
Landwirtschaft	68	67	66	65	64	63	61	60	59	58
Abfallwirtschaft und Sonstiges	9	8	8	7	7	7	6	6	5	5

In 2019, greenhouse gas emission due to transport were 163.5 million tonnes². To achieve the target in 2030, a reduction of 68.5 million tonnes is therefore necessary.

¹ BLE: Evaluation and Progress Report 2018: <https://www.ble.de/SharedDocs/Downloads/EN/Climate-Energy/EvaluationAndProgressReports2018.html?nn=8908760> Accessed July 2020

² Source: <https://www.umweltbundesamt.de/themen/klima-energie/energieversorgung/strom-waermeversorgung-in-zahlen?sprungmarke=Strommix#Strommix> Accessed July 2020

3. E-mobility – a climate protection option with lead-time

The Federal Government has ruled in favour of a comprehensive package of measures for promoting e-mobility. Besides increasing the purchase premium to 6000 Euros, the further measures funded using tax revenues include: establishing the charging infrastructure, constructing lines on a regional and nationwide basis and tax concessions. Vehicle manufacturers and power utilities also subsidise vehicle buying and infrastructure. This is a subsidy package which most other EU Member States cannot afford to such an extent. Even if the intended number of 10 million approved electric cars is reached here in Germany in 2030, more than 30 million vehicles (cars and heavy-goods vehicles) will still be powered with combustion engines. This is the result concluded by the experts from the “National Platform for the Future of Mobility” (NPM), initiated by the Federal Ministry of Transport (BMVI). With the launch of electric mobility, the development of electricity generation from wind power and photovoltaics would have to be accelerated according to the principle of “additionality” to cover this additional need for renewable electricity. Otherwise, the development of e-mobility will speed up the consumption of fossil energy carriers in the electricity sector. However, the opposite is currently the case when it comes to establishing capacity. The same finding concerns electricity generation from biomass. This production is differentiated from all other generation options for renewable electricity by its flexible production that can be adapted to requirements – biomass is an “energy carrier” and not an “energy source”.

Renewable energy production for mobility is also in competition with the extensive hydrogen strategy of the Federal Government – this latter also benefiting from a state financed subsidy programme. Renewable hydrogen represents an option for the de-fossilisation of fuels in existing refineries, but is also interesting for the chemical industry. A lack of public acceptance for additional wind turbine generators or line construction is nevertheless increasingly complicating their development onshore. Therefore, the additional renewable electricity demand should primarily be ensured from offshore installations still to be erected.

To attain long-term climate neutrality in 2050, these measures and extensive funding are necessary in order to make a contribution towards securing the technological base and hence future added value in Germany. But they only help to a limited extent in regard to the commitment period 2021 to 2030. This is because, according to the German Environment Agency (UBA)², greenhouse gas emissions resulting from developing the production of renewable energies in the electricity mix in 2019 were still around 400 g CO₂/kWh.

It is to be expected that, for the foreseeable future, a contribution to climate protection in the car sector, and particularly in heavy-goods transport, can only be accomplished using fuels associated with reduced greenhouse gases. Bio-CNG, bio-LNG and liquid sustainable biofuels can make a significant contribution towards greenhouse gas reduction here in existing vehicle fleets with combustion engines and hence directly to climate protection.

4. Biofuels are available now and can be supplemented with future alternative fuels

Sustainable biofuels, fuels based on both cultivated biomass or biogenic waste and residual materials as well as electricity-based fuels (power-to-liquid, power-to-gas) exhibit considerable advantages. Owing to their immediate availability, the considerable greenhouse gas reduction potential of biogenic fuels (BLE report 2018: average 84%) can be exploited immediately. Biofuels must also be evaluated in relation to their bio-economic and additional ecological effects. Thus feedstuffs rich in protein and energy are attained as secondary and by-products during their production, which replace imports as well as organic fertilisers, biogas or fusel oils, glycerol etc. for chemical or medical applications. There is practically no waste – the material and hence carbon cycle is closed over various value added chains.

Only biofuels are subject to statutory strict and binding sustainability certifications, beginning with the cultivation area or the raw material collection, and utilise the existing fuel and vehicle infrastructure. Electricity-based synthetic fuels will only be available in market-relevant quantities over the medium to long term. As a rule, higher blends of biodiesel and bioethanol in petrol and diesel are already technically possible. The lack of approvals by the Federal Government (ordinance of fuel quality: 10. BImSchV) or unclear data from the vehicle manufacturers are currently impeding their use. Crediting biofuels to the CO₂ fleet limit values would also offer an economic advantage for vehicle manufacturers to grant approvals for higher blends.

The authorisation according to the European Fuel Quality Directive (FQD) for increasing the blend components is to be implemented nationally as a first step. Internationally, diesel and petrol blends with more than 10 or 20 percent biodiesel or bioethanol have been distributed in third countries such as the USA, Argentina, Brazil, as well as Malaysia and Indonesia. These countries are increasingly utilising biofuels, **primarily from cultivated biomass**, as a contribution to climate protection and for boosting income in agriculture. The process technologies are sophisticated and significantly more cost effective in comparison to all other manufacturing methods. The existing sustainable bioenergy potential must therefore be utilised in the transformation to a climate-neutral economy. Synthetic fuels made from renewable electricity are also used, like biofuels, via existing infrastructures and the entire vehicle fleet in Germany and/or in the EU, and their growing future production **supplements** the share of fuels with reduced greenhouse gas emissions in existing vehicle fleets.

German Council Presidency – acting as a role model to present solutions and achieve targets

Germany is assuming the Council Presidency at a time that is both difficult yet precedent-setting for the future of the EU. The energy revolution and climate protection can only succeed if the economy and society are actively involved. The “Green Deal” forms the foundation underpinning climate policies aimed at evaluated existing regulations and adapting these in line with changing times and circumstances.

Against this backdrop, the Bundesverband Bioenergie (BBE) proposes:

1. Increasing the share of renewable energies in transport

The new version of the Renewable Energies Directive (RED II) envisages a renewable energies target of minimum 14 percent by 2030 in the transport sector. The BBE shares the opinion that this target is by no means ambitious enough to achieve the climate protection objectives, especially since it can be calculated and fulfilled by multiple credits such as the use of renewable electricity in rail transport, without additional CO₂ emissions being reduced at the same time. The BBE therefore calls for the share of renewable energies in 2030 to be increased to at least 27 percent.

2. Establishing a level playing field for imports too

The capping limit for biofuels from cultivated biomass is to be raised to 7 percent, measured in relation to the end energy consumption in the transport sector. The RED II envisages significantly stricter requirements for validating the sustainability and associated documentation requirements, including for imports from third party states. This regulation is basically welcomed because it establishes a “level playing field” – to be observed by third countries as well – which must form the basis for certification independent of end consumption. A sustainably effective protection of ecosystems, particularly virgin forest regions, cannot be ensured with capping limits and certification systems, but is rather the result of binding trade agreement policies with the relevant countries or governments. This protection must be anchored in international free trade agreements and subject to sanctions.

3. Increasing greenhouse gas minimum quotas

The statutory regulation for distributors of fuels for greenhouse gas reduction – the greenhouse gas reduction quota (§ 37a BImSchG (Federal Pollution Control Act)) – must be increased incrementally and reliably up to 2030. Similarly to the RED II, the European Fuel Quality Directive (FQD) must be evaluated and a continually rising greenhouse gas minimum commitment (minimum specifications) provided for.

The quota trade resulting from this regulation in Germany between the economic parties is the practical proof that the greenhouse gas minimum quota works. The greenhouse gas efficiency of biofuels continually increased in this way confirms that the statutory specification for greenhouse gas reduction can be fulfilled with little physical application. In reverse, this means that the greenhouse gas minimum quota can be increased while biofuel volumes remain the same.

4. Creating framework conditions for higher blend contents

Failure to comply with the European climate target specifications according to the ESR will risk penalty payments amounting to billions in Germany, as revealed by the study “The Contribution by Biofuels in Attaining the Climate Objectives 2030”, published by

DIW ECON in 2019³. This sanction regulation concerns all Member States that cannot fulfil the reduction specifications.

In the NECP, the Federal Government determines that the renewable energy target of 14% stipulated in the RED II is inadequate and announces, with reference to the ambitious climate protection target in the climate protection plan 2050, that the share of renewable energies in transport is to increase significantly by 2030.

The BBE confirms that this target specification for the EU is basically inadequate and an adaptation without multiple crediting is necessary. Only with an increase in the shares of sustainable biofuels both in the blend or as a pure fuel can the target specifications be attained. Against this background, an increase in the use of sustainable biofuels must be differentiated and balanced according to technical benchmarks.

- **Biodiesel**

A blend of maximum 7 percent (B7) is available at public filling stations. A higher biofuel blend is only permissible in closed fleets so far. As diesel fuel in Germany and in many other Member States is the most widespread fuel, a higher biodiesel blend will have an immediate effect in respect to attaining the climate targets. A higher blend of biodiesel is thus offered in respect to the target attainment for the year 2030. The Federal Government is requested to support the approval of diesel fuels with a higher blend on an EU level and promote these, more precisely with B10 for the total market and B30 for heavy commercial vehicles (trucks and buses).

In future, filling stations could offer B10, instead of the B7 which is currently available. Car and truck models of various manufacturers are already approved for B10 use. Technical suitability must therefore also be assumed for models not yet approved. However, this requires confirmation by the relevant manufacturer.

Sufficiently sustainable biodiesel for increasing the blend would be available from national or European production; both from used cooking oil as well as from native rapeseed oil. A European standard for B10 already exists. It is to be adopted in the national regulations in Germany in the 10th BImSchV (Federal Pollution Act).

- **Bioethanol**

Besides the fuel type Super E10, which has been standardised nationally and internationally for many years and which is in the meantime available in numerous EU Member States, a petrol fuel type which has more than 10 percent by volume ethanol should be added. As a rule, higher blends of ethanol in petrol enable higher octane ratings for more efficient petrol engines and ultimately significantly higher greenhouse gas reductions as well. The efficiency of the engine is improved technically, which results in

³ <http://www.biokraftstoffverband.de/index.php/stellungnahmen-und-studien.html> 6 May 2020 |

noticeably cleaner combustion and also considerably lower pollutant emissions. Its introduction requires a timely adaptation of Directive 2009/30/EC and corresponding national implementation in tandem with prompt fuel standardisation on a European level.

The Super petrol type with up to 5 percent bioethanol should be abolished and the corresponding commitment for the mineral oil economy to offer this should be dispensed with. Super E10 is technically compatible with significantly more than 93% of the current car fleet with petrol engines and almost all new vehicles. In comparison with Super, Super E10 has significant advantages: The higher component of high-octane bioethanol in the petrol means that other environmentally harmful octane additives (for instance aromatic compounds) can be reduced and the octane rating of 95 still secured. The most recent examples in neighbouring European states such as Belgium, the Netherlands, Luxembourg and Hungary, in which only Super E10 is available in the fuel market besides the Superplus fuel type, reveal that consumer confidence in Super E10 has also grown in the past few years.

- **Biomethane (LNG/CNG)**

Treated biogas – biomethane – comprising residue and waste materials for use as drive energy is characterised by a high greenhouse gas reduction potential. At present, around 100,000 vehicles that are equipped with drives for compressed (CNG) methane gas can be found on Germany's roads. In addition to this, there are around two thousand trucks which use liquefied methane (LNG) as drive energy. It is also to be expected that the need for LNG of biogenic origin will increase greatly in the transport and logistics sector (including shipping).

The use of biomethane as a fuel enabled emission savings of around 120,000 tonnes CO_{2eq} in 2018. As early as 2019, the share of biomethane with about 660 TWh was over 40 percent of the distributed CNG, which in turn entailed a rise in sales of 70 percent compared with the previous year. However, the potential for increasing the market share is nowhere near fully utilised. The existing biomethane plants could also cover market needs for biogenic CNG and LNG in 2030 with the inclusion of farm manure from the agricultural sector.

In order to cover the demand for low-emission methane-rich fuels and spur on the defossilisation of the fuel sector, the BBE proposes converting the entire CNG and LNG market in the heavy-goods sector to 100 percent biomethane. Furthermore, an ambitious upward path is to be introduced for biomethane in shipping.

5. Attribution of biofuels to CO₂ fleet emission values

To attain the CO₂ fleet limit values, it is advisable to provide the vehicle industry with another option besides efficiency enhancement and e-mobility: crediting of renewable fuels to the CO₂ fleet limit values. The greenhouse gas emission savings associated with the use of sustainable fuels must be recognised by the legislation. At the same time, the vehicle industry must ensure that new vehicles purchased in the EU are

fuelled with renewable fuels over their service life and/or renewable fuels are distributed in the same volume. This must be realised in addition to the use of renewable fuels, which the mineral oil industry is committed to through the greenhouse gas reduction quota.

6. Funding fuel system research and model regions

The BBE welcomes the current initiatives of the Federal Government for more intensive research funding. Biofuel system research in all its facets must form an element of application-oriented primary or secondary research in order to be able to evaluate options as quickly as possible in practical applications in the existing vehicle fleet as well. In particular, fossil fuels have very different compositions in comparison to standardised biofuels and synthetic fuels; systematic investigations into chemical interaction effects must therefore accompany research on a proactive basis. Standardisation initiatives for new regenerative liquid fuels (e.g. OME) must also be spurred on at the same time in order to save time. However, not every development path can be pursued here. With a view to the time specifications, existing options must also be evaluated against the background of their feasibility. The required cost-intensive infrastructure development must also be appraised as a significantly inhibitive element.

The evaluation of local potentials, especially from agriculture, belongs to the model region. Basically, the energy revolution in transport must be elevated more intensively to local value added potentials (local agenda) instead of solely following major technical solutions with new dependencies. That would represent an effective contribution to support the local economy in rural regions. The bioenergy villages of the regions funded by the BMEL are a good example here of trendsetters for a funding approach to be taken.

The Bundesverband Bioenergie e.V. (BBE) is the umbrella association of the German federal bioenergy market. The market players along the entire value added chain of the biogenic electricity, heat and fuel market are organised in the BBE: from biomass cultivation and its provision via mechanical and plant engineering, through to the planning and operation of bioenergy plants in the various sectors.

The present proposals were drawn up in collaboration with the following member associations of the BBE:



Bundesverband der deutschen Bioethanolwirtschaft e.V. (BDBe)



Bundesverband Dezentraler Oelmühlen und Pflanzenöltechnik e.V.
(BDOel)



Deutscher Bauernverband e.V. (DBV)



Fachverband Biogas e.V. (FvB)



Mittelstandsverband abfallbasierter Kraftstoffe e.V. (MVaK)



Union zur Förderung von Oel- und Proteinpflanzen e.V. (UFOP)



Verband der Deutschen Biokraftstoffindustrie e.V. (VDB)



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