UNION ZUR FÖRDERUNG VON OEL- UND PROTEINPFLANZEN E. V.

BIODIESEL & CO. 2024/2025

EXPERT REPORT AND OUTLOOK – EXCERPT
FROM THE UFOP ANNUAL REPORT

ufop

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Biodiesel & Co.

Russia's war against Ukraine poses a threat to the European community of values, decisively influencing the current and future fiscal policy framework. EU member states must cover and finance related additional expenses within the framework of national and European budget planning. Compliance with EU requirements for new borrowing is also vital when organising the requisite credit financing to avoid triggering an infringement procedure. On 18th March 2025, the new Federal Government and the German Bundestag approved the largest financing package in the Federal Republic of Germany's history. The Federal Government was authorised to launch a spending package of up to EUR 500 billion for investments in infrastructure and climate action, supplemented by additional defence expenditure of up to 3% of gross domestic product (GDP) per annum. This was tantamount to authorising up to 1 trillion EUR additional new debt. In its coalition agreement, the Federal Government agreed not to scale down climate change mitigation targets and, consequently, not to cut financing of climate action measures (Climate and Transformation Fund – CTF), but at the same time opted to redefine the energy policy support framework.

Excerpt from the Coalition Agreement:
"We will also continue the support programmes for decarbonisation of industry, including the climate action agreements. We shall link this government support to criteria such as measures to secure Germany's status as a business location."

The new government's first few weeks in office saw the reintroduction of tax relief for fossil fuels in agriculture and forestry, as announced in the coalition agreement, amounting to 21.4 cents per litre from 2026. The total sum amounts to around 430 million EUR per year. At German Farmers' Day in June 2025, Federal Minister of Agriculture Alois Rainer announced that tax relief for biofuels would also be considered. In addition, there are plans to reduce the electricity tax for industry, which also applies to agriculture.

Federal Minister for Economic Affairs Katherina Reiche announced that she would conduct a "reality check" on the energy transition in autumn 2025. In UFOP's view, this should also include the European Commission's July 2025 proposal to bring forward the ban on combustion engines for new purchases of company and rental cars. This measure goes beyond any reasonable or acceptable level of dirigisme; particularly with regard to the energy transition in the transport sector, the European Commission has to date failed to decide on the most important issues and options for the biofuel industry with a view to accelerating defossilisation of existing fleets and closing regulatory loopholes to prevent fraud in biofuel imports. In a nutshell: Issuing certification rules must also entail enforcement of those rules.

The biofuel industry and its associations underline this observation, as do the member states' competent authorities. Instead of conducting such monitoring, responsibility for the Commission's administrative shortcomings is being fobbed off to the Member States. Issues range from a lack of monitoring for the certification systems approved by the Commission to the Union Database (UDB), which is still not operational today. The biofuel supply chain has been more than willing to engage in dialogue. However, letters sent by UFOP, either as an independent initiative or with other associations, to the European Commission (including Commission President Ursula von der Leyen) with proposals for improving monitoring and control requirements have remained unanswered, although the problems and future challenges addressed also affect companies involved in import and export of biomass feedstocks and biofuels.

New US Support Policy – A Driving Force for Agriculture and Biofuels

Immediately after taking office in the United States in January 2025, Donald Trump began to develop the customs policy adjustments he had announced during his election campaign into a direct instrument for variable import duties with a view to economic promotion and revenue generation. For years, all US administrations have faced the challenge of avoiding a shutdown. To date, taking on more debt was the only option to avert a shutdown. The new president remains short of funds, but manages the debt, just as the EU does. His decision to abolish jobs in federal agencies along with, inter alia, major expenditure items for food aid (USAID) and climate action met with national and international criticism. On the day of his inauguration, Trump signed a letter to the United Nations withdrawing from the Paris Agreement and instructed the US mission to the UN, as well as the State and Treasury Departments, to "immediately" suspend or revoke all alleged financial obligations of the US under the Framework Convention on Climate Change. He also rescinded the US international climate finance plan, which provided support for countries affected by climate change. Although the notice period for withdrawal is one year, it no longer makes sense for the US to participate in the 30th UN Climate Change Conference in Belem, Brazil, in November 2025.

His intensive preparations for taking office were also confirmed by the legislative package passed by Congress:One Big Beautiful Bill – OBBB, *www.whitehouse.gov/obbb/*). President Trump signed this into law just in time for Independence Day in the US on 4th July 2025. It provides for comprehensive restructuring and financing until 2034, affecting almost all areas of society and the economy, including defence. 2025 to 2034 support programmes for agriculture and the biofuel sector earmark 59 billion US $ (almost 51 billion EUR) for relief under the Farm Safety Net, including agricultural risk insurance (ARC), price loss insurance (PLC), and other subsidies for crop insurance. In addition, higher funding than previously is to be provided for trade promotion, biosafety, research and energy programmes, especially for biofuels.

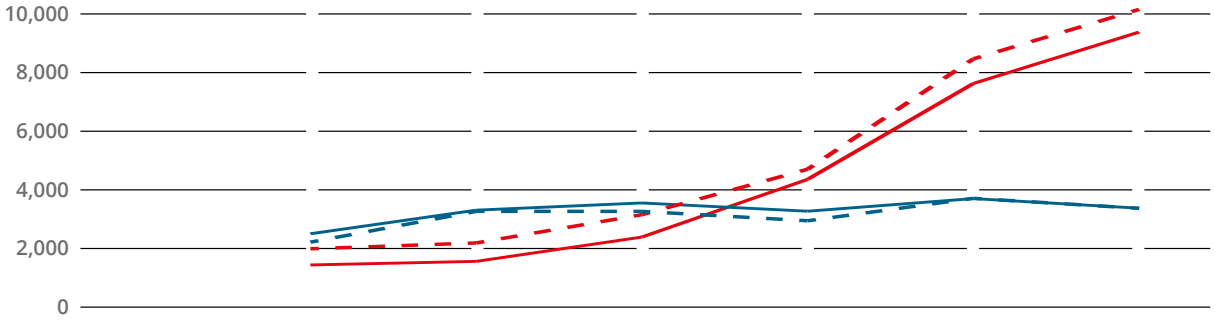
The US government has stated clearly that the biofuel sector should also support domestic agriculture – primarily by deploying grain, soybeans, and rapeseed produced in the US, as well as imported feedstocks from Mexico and Canada. To date, the European Commission and EU member states have failed to formulate clear objectives for the biofuel sector. UFOP's estimates indicate the US provisions will also have a positive impact on oilseed markets in the short to medium term, because biofuel production in the US is to be expanded for production of Sustainable Aviation Fuels (SAF) – deliberately based on vegetable oil. In addition, an analysis by S&P Global, a market information service, indicates that in Canada demand for renewable diesel and, consequently, for rapeseed as a feedstock, will increase to around three million tonnes per year as a result of the national Clean Fuel Regulation (CFR) in conjunction with various blending mandates at provincial level.

There is no "tank or table" debate in the US. Instead, pragmatic options are being explored to promote cultivation of feedstocks and expand crop rotation systems, including for rapeseed and camelina, as well as Ethiopian mustard and field pennycress as catch crops (cf. *US Department of Energy – (USDE)-Billion-Ton Report*, p. 27); breeding programmes are also underway. In this context, it should be noted that the biodiesel sector in the US has already ceded its leading role in production of hydrotreated vegetable oils (HVO/SAF) for several years now, measured in terms of growth (see figure below on HVO production and consumption in the EU and the US, as well as Tables 14–16 on HVO in the Statistical Annex).

Fig. 1: HVO in the EU and US: production and consumption

in 1,000 tonnes

	2019	2020	2021	2022	2023	2024
Production EU	2,519	3,326	3,572	3,290	3,722	3,393
Production USA	1,453	1,575	2,406	4,379	7,656	9,413
Consumption EU	2,221	3,272	3,271	2,951	3,716	3,375
Consumption USA	1,995	2,195	3,158	4,708	8,470	10,157



Source: S&P Global Commodity Insights, Mai 2025

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German and EU Transformation Process und Adjustment Strategy

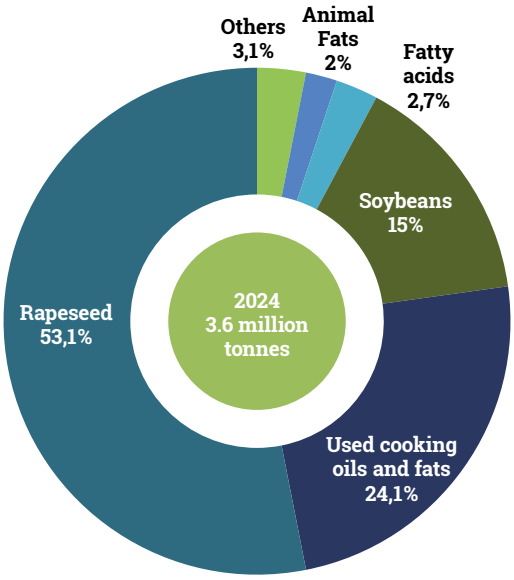
A similar trend is emerging in the biodiesel/HVO sector in the EU. Conversely, this means that HVO imports, especially to Germany, will continue to rise. Holborn Europa Raffinerie GmbH is the first German company to enter HVO production, having built an initial HVO plant in Hamburg (capacity approx. 220,000 tonnes, planned completion in 2027) (*link*). Intensive discussion in Germany about a "vision" for transformation of existing mineral oil refinery capacities, e.g. through technical integration of "co-processing", is now reflected in investment decisions along these lines. It is in principle easy to understand the strategic focus on drop-in-compatible alternative fuels that can be switched into various applications (road/air transport) by modifying the molecular structure with a view to continued use of existing plants in a shrinking road transport market. This also makes sense for the overall ecological balance. At the same time, the production of biogenic paraffinic fuels (Sustainable Aviation Fuels – SAF) is gaining ground in the member states as a result of national implementation of the amended *Renewable Energy Directive 2023/2413* (RED III) in combination with the *ReFuelEUAviation Directive 2023/2405* .This is due to increasingly stringent statutory blending requirements: starting with 2% biogenic kerosene (SAF) for 2025 to 2029, rising to at least 6% SAF in 2030 and 2031, with 1.2% of this figure synthetically produced. In this environment, the German and European biodiesel industry also faces the challenge of addressing the transformation process proactively if, for example, investments are envisaged in plants to expand the product portfolio, to avoid the need to shut down facilities that are depreciated or no longer competitive at some point.

The UFOP expert group on *Biofuels & Renewable Feedstocks* (in German) has repeatedly focused on these questions, most recently in June 2025.

Options for material use were discussed, also from the perspective of market potential, including scope to utilise glycerine from biodiesel production for manufacture of solketal. This product innovation enables 75% biogenic content to be added to the fuel: 10% biodiesel, 10% solketal, and 55% HVO, while still complying with the requirements stipulated in the DIN EN 590 diesel fuel standard. The expert group discussed options for chemistry based on methyl esters, e.g. through fractionation as a function of chain length to improve drop-in capability and thus avoid blending gaps with synthetic fuels. UFOP views these considerations as a means to enable greater added value for rapeseed oil and thus for rapeseed, with a view to the growing significance of rapeseed cultivation, which offers relatively better performance in crop rotation systems. Securing the cultivation area for rapeseed in Germany and the EU 27 is a declared goal of UFOP's work. The German and European biodiesel industries are by far the most important customers for rapeseed and rapeseed oil feedstocks. The following figure underlines this statement for Germany.

Fig. 2: Biodiesel production in Germany by feedstock

(in %)



Source: VDB

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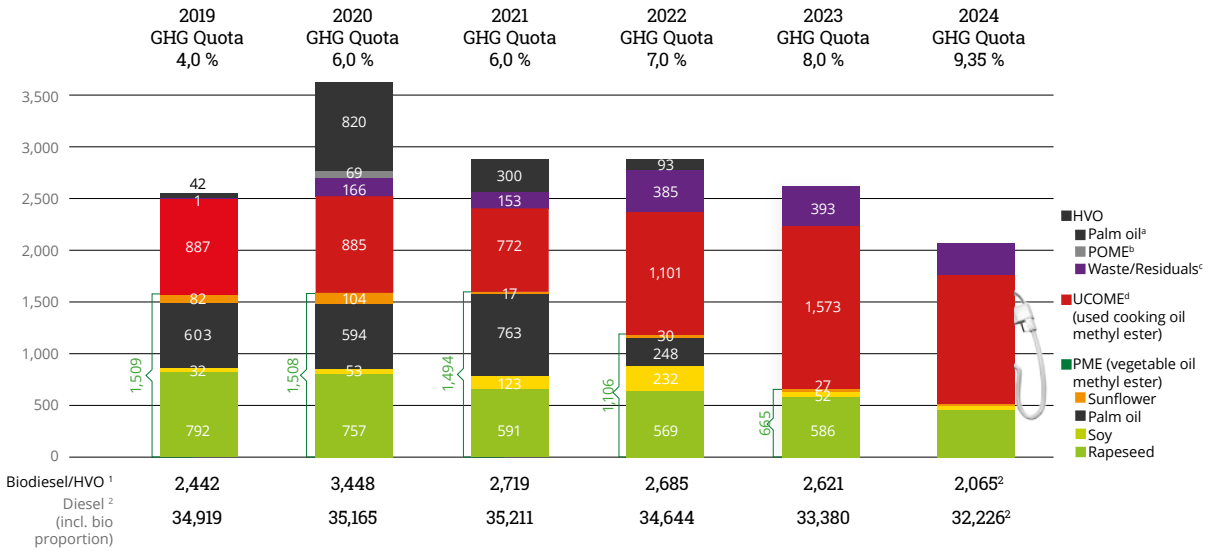
Importance of German Biodiesel Production

Germany is Europe's largest producer of biodiesel (see Statistical Annex, Table 14). The German Biofuels Industry Association (VDB) notes that a total of around 3.6 million tonnes of biodiesel were produced in 2024, over half based on rapeseed. Biodiesel from rapeseed oil accounted for around 53.1% or 1.45 million tonnes of rapeseed oil methyl ester in 2024. This roughly corresponds to the German rapeseed harvest in 2024 in terms of the amount required. Used cooking oils, at 24.1%, take second place. The availability this reflects is now essential for certain plants specialised in producing biodiesel, SAF, and HVO with these feedstocks. Since 2023, palm oil has ceased to play a role, as it is no longer eligible to offset the GHG quota obligation.

This demand must be met from other sources. GHG reduction efficiency and the price of each particular feedstock type or origin determine the feedstock composition for biodiesel and HVO that can be credited towards GHG reduction obligations and is thus also key for GHG quota trading. That is because double counting of biofuels from certain waste oils further reduces physical demand. As shown in the figure below on sales development and feedstock composition, despite rising quota obligations, total consumption has declined, as has the share of biodiesel from rapeseed oil. In contrast, the share of biofuels from waste oils has increased.

Fig. 3: Sales development and feedstock composition in biodiesel/HVO (D)

Domestic consumption 2019 – 2024 (estimation for 2024) | Quota assessment[1] | in 1,000 t



Sources: 1 BLE [Federal Office for Agriculture and Food]: Evaluation and Progress Report 2023
2 BAFA: Mineral oil statistics a incl. Palm-HVO from co-processing
b HVO from wastewater sludge from the processing of palm oil (POME)
c from waste and residual materials, sunflower incl. co-processed HVO
d from waste oils

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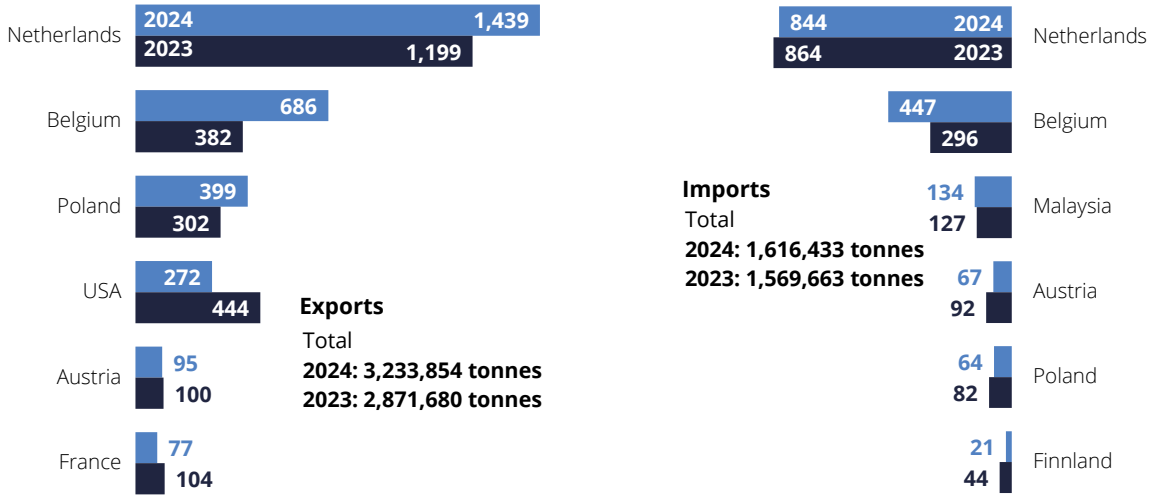
However, this does not show the extent to which falling demand is influenced by GHG quotas from surpluses and double counting (cf. Statistical Annex, Tables 7–8). From 2022 to 2024, demand fell by 0.556 million tonnes to 2,056 million tonnes. What happens to the residual domestically produced biodiesel from rapeseed oil? Germany, the EU's largest producer, is also by far the EU's largest exporter, as the following figure shows.

Fig. 4: Germany: import and export destinations for biodiesel

(in 1,000 tonnes)



Slurce: DESTATIS Note: excluding HVO

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The export balance for 2024 was approximately 1.62 million tonnes, with exports of around 3,234 million tonnes and imports of 1,616 million tonnes. Citing recurring failure to meet climate action targets in the transport sector, UFOP has repeatedly called for scope to credit the quantities of biofuels produced domestically by adjusting the GHG quota rather than exporting this GHG reduction potential. This would at the same time ease the market situation in export countries.

Rapeseed as a Feedstock – Important Potential to Secure Supplies

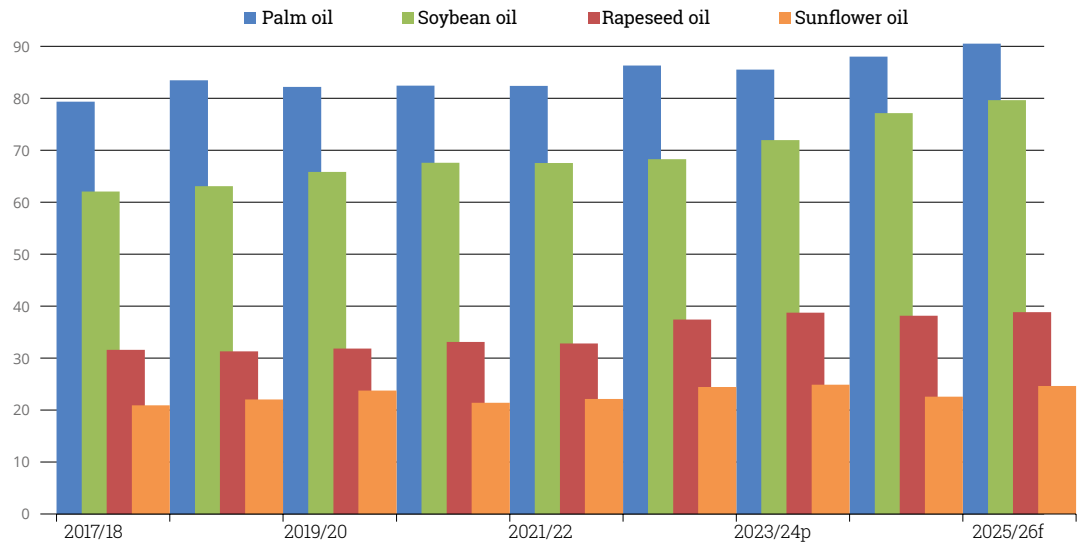
UFOP focuses the feedstocks policy debate on a holistic public and political view of the commodity chain, ranging from cultivation to use of rapeseed meal as the most important GMO-free protein feed in Germany and the EU (labelled 'GMO-free' on dairy products). This meal simultaneously reduces pressure on land in third countries for cultivation of protein sources that would otherwise have to be imported. These arguments have been summarised in the updated information flyer "*Rapeseed: a multi-talented crop*" (in German). Although it is not a binding point in the coalition agreement, UFOP emphasises that the requisite transformation process and holistic use of rapeseed should also be considered, evaluated, and promoted in this sense in the national bioeconomy strategy, as well as in the bioeconomy strategy repeatedly announced by the European Commission. This also means it is important to note that the rapeseed harvest or crop biomass more generally is, in principle, always available as a "reserve" for the food market. This was strikingly demonstrated in 2022 by developments after Russia's war against Ukraine began.

Appropriate Classification of Sustainably Available Feedstocks

Against this backdrop, UFOP has emphasised in discussions with politicians and the general public that the global potential of cultivated biomass for vegetable oil production must be assessed properly, especially following palm oil's exclusion as a "high ILUC risk feedstock". This is because waste oils also originate from cultivated inputs. As a plausibility check, the following diagram depicting global vegetable oil production reveals the "waste potential".

Fig. 5: Global vegetable oil production

(in million tonnes)



Source: USDA Note: p= preliminary, f= forecast

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In late May 2025, the US Department of Agriculture (USDA) estimated global vegetable oil production for the 2025/26 marketing year at 234.5 million tonnes, a year-on-year increase of 6.7 million tonnes. This would fully cover estimated total demand, including biofuel production, of 228.9 million tonnes. **Assuming that 10% of total vegetable oil production can be collected for recycling, the potential volume of waste oils is estimated at approximately 23.5 million tonnes globally.** By way of comparison, diesel consumption in Germany alone amounts to around 32.2 million tonnes. Other sectors of the economy also compete for these wastes for material use. Against this background, the national cap for waste oils must be assessed in accordance with Part B, Annex IX of RED II. The EU directive provides for an upper limit of 1.7%, measured in terms of final energy consumption in road transport. At the request of the German Environment Ministry (BMUKN), the European Commission has increased this to 1.9% for the potential available within Germany and not internationally (imports). This cap is intended to prevent displacement effects if feedstock prices rise. It should be noted that companies subject to quotas can count the 0.2% difference for waste oil-based biofuels towards their national GHG reduction obligation, but Germany cannot count it towards the target set out in the RED III Directive. The directive stipulates that CO_2 emissions from transport must be reduced by at least 14.5% by 2030 or the share of renewable energies in the transport sector must be at least 29%. In principle, UFOP emphasises that the GHG Quota Act has created a funding instrument that has triggered an unexpected market-driven drive to collect waste oils both nationally and internationally, which rivals the appeal of collecting "deposit bottles."

Double Crediting As Incentive to Fraud

UFOP has repeatedly criticised the national regulation on fulfilling GHG reduction obligations, which stipulates that unlimited levels of "advanced" biofuels from certain waste fats, i.e. in accordance with specific biomass codes, can be added to blends if a minimum quota for these biofuels is met. These excess quantities can be counted twice towards the GHG reduction obligation. As a result of the leverage effect thus triggered, virtual tradable GHG quotas do not simply cause a noticeable displacement effect in real-world markets (see figure above on sales development & feedstock composition for biodiesel/HVO) but also create an incentive for fraud involving false declarations for biodiesel imports from Asia and HVO imports from Dubai. This has caused enormous economic damage since 2023 and affects the entire supply chain, from agriculture to biofuel producers or GHG quota trading. However, the European Commission has not been able to confirm any fraud. At the end of July 2025, it presented its findings: *link*. UFOP views the slow reaction as cause for concern; Germany had already demanded this type of procedure in 2023 and has repeatedly called for implementation, with support from other member states. Is this what effective fraud prevention looks like? In the meantime, biodiesel producers have had to contend with a drop in production and short-time working, while quota traders have been forced to file for insolvency.

Falling GHG quota prices also affect the energy transition towards e-mobility, above all, the conversion to e-buses for local public transport. Revenue from GHG quota trading is factored in to finance the high acquisition costs. The drop in prices is now reducing the revenue planned for financing. In 2024, fraud involving biodiesel imports and UER certificates revealed that the German Environment Ministry (BMUKN) and the Federal Environment Agency, the responsible authorities at the national level, had failed to exercise proper control. UFOP was therefore very pleased to note that the issue of investigation and prosecution has also been addressed in *parliamentary questions* and *Bundestag hearings*. Increased public pressure prompted the German government to amend the relevant regulation (38th Ordinance on the Implementation of the Federal Immission Control Act/BImSchV) to the effect that, from 2024 onwards, UER certificates can no longer be counted towards the GHG quota obligation and greenhouse gas reduction quantities that exceed the quota obligation in the commitment years 2024 and 2025 will not be eligible to fulfil obligations for 2025 and 2026. Carry-over will be permitted again from 2027 onwards. The biofuel industry takes the view that this merely postpones market pressure. Against this backdrop, UFOP welcomed the measures announced in the coalition agreement:

Excerpt from Coalition Agreement:

"We want to implement the Renewable Energy Directive III (RED III) in a timely manner, increase the national greenhouse gas reduction quota (GHG quota), and make use of the potential scope offered by the guidelines. In the process, we want to promote use of alternative fuels, including biofuels. In order to protect domestic producers of renewable fuels from unfair practices, we will step up the fight against fraud concerning import of renewable fuels and upstream emission reduction certificates (UER certificates) and expand fraud prevention measures."

Implementation of RED III – Second Act Revising the GHG Reduction Quota

In June 2025, the BMUKN presented a draft second law amending the GHG reduction quota (link), a comprehensive set of rules for national implementation of EU Directive 2023/2413 (RED III). The Directive, published in the Official Journal on 18th October 2023, was supposed to be implemented by 21st May 2025. The BMUKN submitted the draft with a considerable delay for consultation with associations and parliamentary debate. An alliance of biofuel and vehicle industry associations, as well as the mineral oil and GHG quota trading sectors, vigorously criticised this, calling for a change to the timetable to ensure the legislation would come into force on 1st January 2026 and the stricter GHG reduction obligations be introduced on that date.

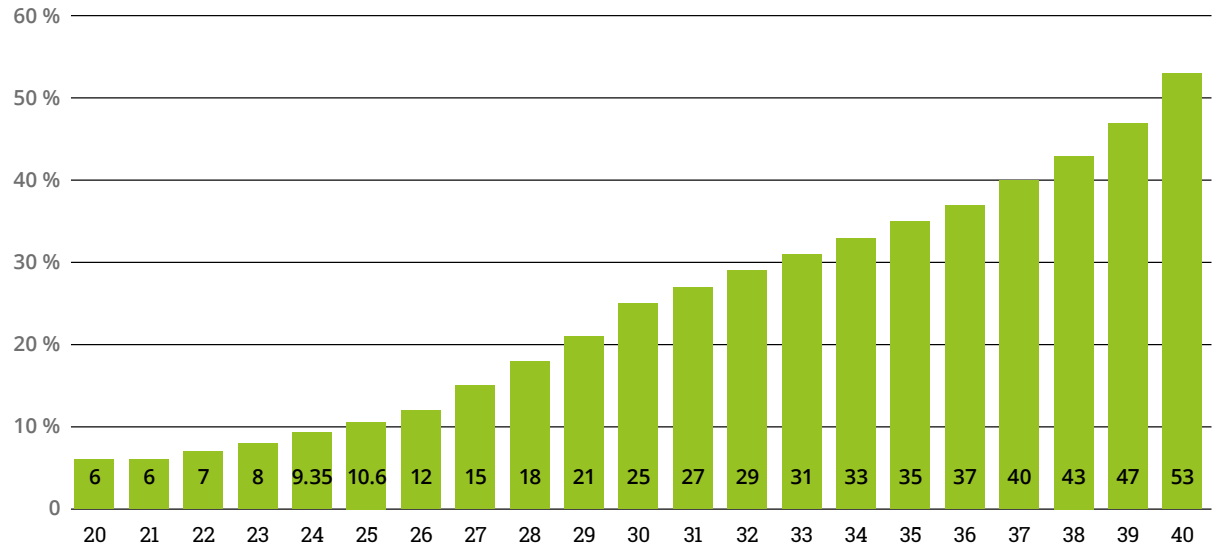
The law addresses the directive's more stringent targets for the share of renewable energies (29%) or for GHG reduction (14.5%). In UFOP's view, through the option of GHG reduction targets, introduced for the first time in the RED, the Commission recognises that the German GHG Quota Act, with its hallmark of competition focused on GHG efficiency, can serve as a role model.

– The Most Important Issues Regulated

In future, all fossil fuels will fall within the scope of the GHG quota obligation, i.e. in addition to petrol and diesel fuels, this also includes natural gas, liquid gases, LPG, jet fuels, and shipping fuels. Separate requirements apply to the shipping sector, meaning that the biofuels used in vessels and the related GHG reductions cannot be transposed to road transport. As a result of the extended scope, the reference quantity used to calculate the GHG reduction obligation, and thus physical demand for alternative fuels, will increase. The draft provides for the level of reduction required to rise gradually beyond 2030 to reach 53% in 2040, as shown below.

Fig. 6: GHG quota up to 2040

GHG quota according to draft bill dated 19 June 2025 in %



Source: Draft bill for a second law on the further development of the greenhouse gas reduction quota, 19 June 2025

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The suspension of GHG quota transfers "mandated" by the German government for 2025 and 2026 will lead to oversupply in 2027 and reduce physical demand for biofuels accordingly. Price pressure is foreseeable. UFOP therefore calls for the 2028 obligation to be brought forward to 2027 and continued from this level. UFOP is opposed to the gradual reduction of the cap for biofuels from cultivated biomass provided for in the draft (see table on RED III implementation below). There should instead be an increase to 5.8%, the level permitted under EU law (biofuel from cultivated biomass in 2020 plus 1%).

This adjustment responds to the drop in fossil fuel consumption associated with the spread of e-mobility. In this sense, changing drive system not only reduces demand, but also accelerates drive efficiency (factor 2.5) compared to combustion engines. Excluding soybean oil as a feedstock is not appropriate, as this would also affect European cultivation. Its classification as a "high ILUC risk" feedstock has been widely criticised and questioned, on scientific grounds too, as added value of soybean meal determines economic decisions to cultivate soybeans, not the 20% share of soybean oil.

Fig. 7: RED III implementation – Ref. Draft Amending Act on GHG quotas

Change in cap limits

	Cap food/feed		Cap IX B		Sub-quota IX A	
	Status quo	Proposal	Status quo	Proposal	Status quo	Proposal
2025	4.4 %	4.4 %	1.9 %	1.9 %	0.7 %	0.7 %
2026/27					1.0 %	2.0 %
2028/29		3.5 %			1.7 %	2.5 %
2030		3.0 %			2.6 %	3.0 %
2031/32				2.0 %		
2033/34				2.3 %		
2035/36				2.4 %		
2037/38				2.6 %		
from 2039				2.8 %		

Source: Draft bill for a second law on the further development of the greenhouse gas reduction quota, 19 June 2025

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The total amount of fuel used as a reference value for calculating GHG quota obligations must be reduced as quickly as possible in the interest of climate change mitigation. UFOP explicitly acknowledges this.

In 2024, Germany exported a net total of approximately 1.6 million tonnes of biodiesel, representing considerable climate action potential. Amended legislation must therefore be accompanied by a fuel strategy so that these export volumes can be used to offset national performance on climate change mitigation in road transport. All Member States face a similar challenge, as these binding climate action targets must be observed at EU level in accordance with the EU Effort Sharing Regulation. In the event of non-compliance, tax revenues are to be used to purchase the requisite certificates.

UFOP CALL FOR A FUEL STRATEGY

UFOP criticises the German government's failure to develop a parallel fuel strategy, given the major challenges (increasingly stringent GHG reduction commitments, large existing fleet with combustion engines, and avoidance of compensation payments by those subject to quotas). A fitting strategy must aim to either use biofuels in the entire vehicle fleet or specifically as a pure fuel in those areas of heavy goods transport where physics and costs limit the switch to electric drives. Deutsche Bahn is leading the way here and has converted a number of its diesel locomotives to run on HVO100. The transport industry is also increasingly interested in HVO100 and B100 as a way to fulfil customer requirements for greater climate protection in accordance with Scope 3 for operational climate reporting. UFOP calls for the entire range of these options (B10, B20/30, and B100, R33 and HVO 100, as well as E10 and E20) to be deployed on the basis of existing and currently agreed standards (E20) and for the 10th BImSchV to be amended accordingly (see list below). Unfortunately, this low-threshold approach to targeted decarbonisation was not taken into account by the "Expert Forum on Climate-Friendly Mobility and Infrastructure" (*link*), as UFOP criticises. After taking office, Federal Transport Minister Patrick Schnieder appointed the expert advisory board, tasked with submitting a report on these questions in a timely manner.

UFOP Proposal for a Fuel Strategy:

Exploiting blending potential to the full in accordance with fuel standards.

Diesel:

- B7, B10, B30, B100
- R33, B30 (+ HVO 40%, i.e. 70% biofuel possible), HVO100
- Diesel + solketal (FAME/HVO, i.e. 75% biofuel possible)

Petrol: E5, E10, E20, E85

CNG: Bio-methane

UFOP has welcomed the planned abolition of double crediting of biofuels from waste oils and fats in accordance with Annex IX, Part II of RED II, given that this is the most significant incentive for fraud. However, UFOP is critical of the increase in the cap for biofuels from waste oils (Parts A and B of Annex IX), especially as there is no quantity-based limit for biofuels from waste oils in accordance with Part A after this sub-quota obligation has been fulfilled (see figure "RED III implementation" above); displacement effects are therefore more than obvious.

Feedstocks from Waste; Competition and Fraud Prevention

Competition for these waste-origin feedstocks is set to grow as only waste-based biofuels are permitted or may be credited towards the quota obligation in aviation and shipping. The purchasing power of various modes of transport therefore plays a decisive role in determining the flow of goods (feedstocks and biofuels). Against this backdrop, fraud prevention continues to be of great importance. UFOP therefore welcomes the condition stipulated in the draft law that biofuel producers must allow on-site inspections for recognition of sustainability certificates; this provision also applies in third countries. These "witness audits" are to be carried out by the competent authorities. In addition, the member associations of the German Bioenergy Association (BBE) have agreed to call for introduction of an official registration procedure for producers of "advanced" biofuels from feedstocks in accordance with Part A, Annex IX of RED II. The audit aims to provide technical evidence of innovative technology for processing these feedstocks. The combination of innovative technology and appropriate inputs is expressly stipulated as a condition in Article 28(6). UFOP has criticised the decision to take the feedstock category of waste as the sole factor determining categorisation as "advanced" for the purpose of double counting, without capping the amount of biofuel. UFOP considers that increasing the minimum quota to 2% is therefore questionable. In addition, it is not possible to monitor on the spot that the feedstock category has been ascertained correctly in the collection chain. UFOP draws attention to the import volumes (see Statistical Annex, Fig. 13) from third countries. Here, the principle of identity must apply rather than mass balance accounting.

The draft law also transposes into national law the authorisation to cultivate catch crops and biomass on degraded land. UFOP takes a very critical view of this option for expanding feedstock supply as the certification systems have not yet established any binding requirements. The legislation specifically enumerates such requirements, which concern, for example, the vegetation period. Growing such crops must not restrict cultivation of food or feed crops. As UFOP fears that this option will be of interest to third countries, it calls for mass balancing to be replaced by proof of identity from the field to the biofuel producer as a tangible measure to prevent fraud. The BBE's biofuel industry associations have transmitted a *comprehensive opinion to the BMUKN*.

23rd International Conference on Renewable Mobility – Fuels of the Future The 23rd International Conference will be held from 19th to 20th January 2026 at the City Cube in Berlin – traditionally parallel to Green Week. Implementation of RED III, both in Germany and also across the EU, is one of the central political topics of this conference, which is once again expected to attract around 700 participants. *https://www.fuels-of-the-future.com/en*

Fuels of the Future 2025

BIODIESEL FROM RAPESEED OIL

A Vital Role in Transport-Sector Climate Action

Rapeseed Instead of Crude Oil: How Biodiesel Protects the Climate

When rapeseed fields bloom bright yellow in spring, they are not just lovely to behold; they also highlight a silent climate action hero – rapeseed. This plant can be used to produce high-quality edible oil and also biodiesel, superior to fossil diesel as a fuel in many ways. At a time when the transport sector is falling well short of its climate targets, this domestic alternative is once again becoming the focus of attention for businesses and consumers.

Biofuels Are Vital for Climate Goals!

With its Climate Change Act, Germany has committed to reducing greenhouse gas (GHG) emissions in the transport sector by 65% compared to 1990 levels by 2030. However, transport remains a real concern for climate action. In 2023, the sector produced around 146 million tonnes of greenhouse gases (CO_2). That is about 22% of total emissions in Germany. Without biofuels, this climate balance would be significantly worse, with an additional 11 million tonnes of CO_2. Biodiesel from rapeseed oil is a particular focus. This is because, compared to conventional diesel, it emits over 75% less CO_2 (see infographic). And it does so using technology that is proven, safe, and ready for immediate use.

No new infrastructure is needed, as filling stations and storage facilities are already in place. Biodiesel is also immediately available, so it can be deployed in practice. In 2024, over 2.25 million tonnes of biodiesel (including hydrotreated vegetable oil – HVO) were consumed in Germany – much of which, namely 600,000 tonnes, came from rapeseed. The entire supply chain, from production in the field to delivery to agricultural traders, oil mills, and biodiesel producers, thus makes a crucial contribution to climate change mitigation. Rather than being a topic for future policy, biofuels are already part of the solution, right now.

Climate Action, Biodiversity, and Regional Added Value

Many people don't realise that the upsides of rapeseed extend beyond the petrol pump, offering numerous benefits for agriculture and the environment. Cultivating it promotes biodiversity, improves soil fertility, and breaks the cycle of disease-prone crop rotations in arable farming. It is also a crucial food source for bees and other insects in the spring. At the same time, rapeseed cultivation contributes to regional added value. In addition to oil for biodiesel, rapeseed meal is also produced during processing. This is used as a high-quality, GMO-free protein feed in beef cattle farming and for dairy cattle. Rapeseed

is also the most important source of protein in Germany and the EU. Around 60% of the yield after pressing is rapeseed meal. Over and above a significant impact on the fuel sector, a decline in rapeseed processing – for example, due to political intervention – would therefore also affect the supply of protein feed from domestic production.

A Bridging Technology Under Pressure

Liquid fuels will continue to dominate our transport systems for decades, until the transition to electric and hydrogen power is complete, with other innovations implemented too. Since 2007, there has been a legal requirement in Germany to add biofuels to petrol and diesel blends. Rapeseed biodiesel is the main component of this successful climate change mitigation measure, i.e. the most important pillar of a bridge towards the energy transition in transport. Despite its many advantages, rapeseed biodiesel increasingly faces competitive pressure. In 2022, the share of biofuels from cultivated biomass – including rapeseed – was limited to 4.4% to meet the GHG quota. At the same time, greenhouse gas reduction per litre of fuel has become a key competitive factor. Mineral oil companies must demonstrate greenhouse gas savings for the fuels they sell each year, i.e. comply with a quota. GHG reduction and the cost efficiency of the alternative fuel determine the competitiveness of the blending option. If the GHG reduction obligation is not met, companies must pay 600 EUR per tonne of CO_2 to the state as compensation. This is a market mechanism that does not require any taxes. However, this competition has resulted in a decrease in the share of biofuel from rapeseed and a corresponding increase in the share of fuels from waste oils and fats, as they make a larger contribution to GHG reduction.

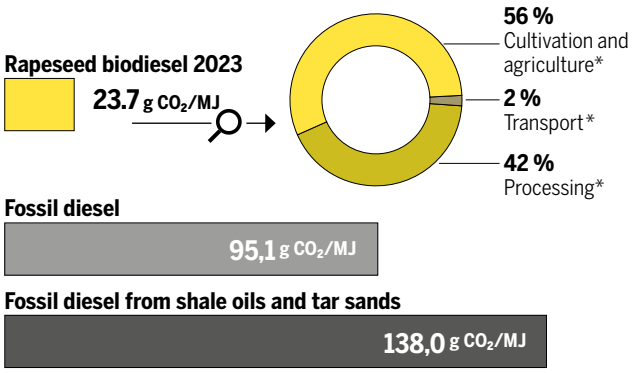
So what happens to the biodiesel from rapeseed? It is exported. With approximately 3.5 million tonnes of biodiesel, Germany is the largest producer in the EU and thus a supplier to other countries in the EU, enabling them to meet their climate action commitments as well.

The climate transition is happening in vehicle tanks and begins with photosynthesis and CO_2 assimilation in the field, when energy is stored in the rapeseed.

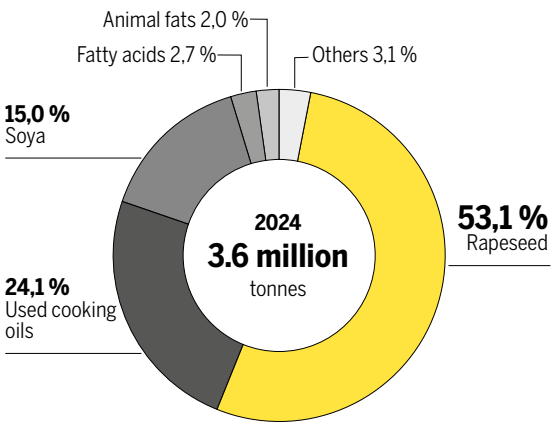
Biofuels – Partner of Electric Drives

While the number of electric cars is steadily increasing, electric drives are reaching their limits in heavy goods transport and agriculture – or rather, the limits of physics. This is because these sectors require vehicles that consume a lot of energy at once and can be refuelled quickly. Biodiesel, rapeseed oil fuel, and HVO stand out here due to their high energy density, similar to diesel fuel. These biofuels can currently close the gap in climate change mitigation when used to power vehicles with a permanently high power requirement and short refuelling times, such as combine harvesters during harvest season. A gradual switchover is underway in public transport, including Germany's railway operator, Deutsche Bahn, which serves as a role model. Biofuels such as rapeseed methyl ester (biodiesel) are therefore an important bridging solution for heavy-duty vehicles. Many companies recognise not only this potential, but also the price advantage in the medium term, as CO_2 pricing will make fossil fuels more expensive. Truck fleet operators are increasingly being held accountable by their clients to reduce CO_2 emissions. Climate change mitigation is happening at the fuel pump – but it starts in the field where the rapeseed grows. Its yellow flowers are emblematic of diversity, the future, and climate action. That's why it's worth taking a closer look at areas in which biofuels are already the better choice today.

STANDARD GHG EMISSIONS FROM RAPESEED BIODIESEL IN COMPARISON:



GERMAN BIODIESEL PRODUCTION BY RAW MATERIAL:



Source: VDB

DIGGING FOR CLIMATE ACTION

Fuel Autarchy on the Platzer Family Farm

The Platzer family farm in Rhan, Cham district, is an outstanding example of sustainable agriculture. Fuel made from home-grown rapeseed is utilised in the farm's machinery. Rapeseed oil production on the farm has several advantages: It reduces dependence on imported fossil fuels, guarantees short supply chains, lowers CO_2 emissions, and creates a closed cycle in which the by-product, press cake, is used as feed for the cattle.

Rapeseed Oil in the Tank – From the Fields, For the Fields

Two tractors with dual-tank systems are currently in operation on the farm. They only use diesel to start up, automatically switching to rapeseed oil once the operating temperature is reached. Since September 2023, a prototype single-tank tractor has also been in operation. It is designed to run exclusively on rapeseed oil – even when starting up – while maintaining the same level of output, reliability and performance in terms of exhaust emissions.

The rapeseed required to fuel these three machines is grown on the farm's fields right behind the farmhouse. In addition, the farm purchases seeds from a maximum distance of ten kilometres to meet regional-sourcing requirements. Up to 1,700 litres of this diesel alternative can be produced per hectare, while at the same time cold pressing in the farm's own oil mill produces press cake, a protein-rich feed for the 450 cattle on the farm.

Healthier Fuels 2.0:

In the past, approximately 30% of arable land was required to feed draught animals. Looking at Germany as a whole, today 10% would be sufficient to supply the agricultural vehicle fleet with energy.

The Platzers need around 25,000 litres of fuel (diesel and rapeseed oil combined) each year to manage their 130 hectares of agricultural land. With a final yield of 1,700 litres of rapeseed oil per hectare, 14.8 hectares (around 9% of the total area) would be sufficient to meet the farm's rapeseed-based fuel requirements.

The Catch and the Solution(s)

Despite the numerous upsides, the Platzer family grapple with lots of bureaucracy. Producing and using fuel from regionally sourced rapeseed oil requires extensive permits and certifications; obtaining these is often a lengthy, costly process.

Many businesses and agricultural associations have been calling for a reduction in bureaucracy for some time now. The Platzer family also urges politicians to exempt self-produced biofuel from the energy tax of 0.4704 EUR per litre.

Andreas Platzer produces his own fuel for his fleet

A Role Model for the Energy Transition

Despite all the difficulties, the Platzer family is proud of how they run their business and convinced that this is fundamentally the right approach. Their concept demonstrates impressively how regional and sustainable solutions can contribute to the energy transition. Using rapeseed oil as fuel not only protects the environment, but also strengthens local agriculture.

Further practical examples can be found at *www.erneuerbar-tanken.de/en*

Alternative Drives in Agriculture and Forestry

1. **Electric drives for short jobs near the farm (fruit-growing and viticulture)**
2. **Gas drives (biomethane or hydrogen) for engines up to 200 hp**
3. **Internal combustion engines for intensive use, running on non-fossil fuels such as vegetable oil, HVO, bioethanol, and e-fuels**

Tabular Annex

TABULAR ANNEX

Legend/explanation of symbols in the tables:

–	nothing or less than one unit
.	no information available until editorial deadline
0	less than half of 1 in the final digit shown, but more than nothing
/	no information, since the numeric value is not reliable enough
()	Numeric value statistically relatively unreliable

Biofuels

Tab. 1: Germany: Development of biofuel consumption since 1990

Year	Biodiesel[1)]	Vegetable oil	Bioethanol	Total renewable Fuel supply
				Specification in 1,000 tonnes
1990	0	0	0	**0**
1995	35	5	0	**40**
2000	250	16	0	**266**
2001	350	20	0	**370**
2002	550	24	0	**574**
2003	800	28	0	**828**
2004	1,017	33	65	**1,115**
2005	1,800	196	238	**2,234**
2006	2,817	711	512	**4,040**
2007	3,318	838	460	**4,616**
2008	2,695	401	625	**3,721**
2009	2,431	100	892	**3,423**
2010	2,529	61	1,165	**3,755**
2011	2,426	20	1,233	**3,679**
2012	2,479	25	1,249	**3,753**
2013	2,213	1	1,208	**3,422**
2014	2,363	6	1,229	**3,598**
2015	2,149	2	1,173	**3,324**
2016	2,154	3	1,175	**3,332**
2017	2,216	0	1,156	**3,372**
2018	2,324	0	1,187	**3,511**
2019	2,348	0	1,161	**3,509**
2020	3,025	0	1,097	**4,122**
2021	2,560	0	1,153	**3,713**
2022	2,516	0	1,186	**3,702**
2023	2,616	0	1,248	**3,864**
2024	2,065	0	1,257	**3,322**

Sources: BAFA, BLE
[1)] from 2012 inkl. HVO
Data 2024 prelimenary

Table 2: Germany: Domestic consumption of biofuels 2019 – 2024 in 1,000 t

	2019	2020	2021	2022	2023	2024*
Biodiesel admixture	2,301.4	3,026.0	2,534.0	2,537.5	2,599.2	2,065.1
Biodiesel pure fuel	.	.	.	.	.	.
Total biodiesel	**2,301.4**	**3,025.3**	**2,534.0**	**2,537.5**	**2,599.2**	**2,065.1**
Vegetable oil	.	.	.	.	.	.
Total biodiesel & veg oil	**2,301.4**	**3,025.3**	**2,534.0**	**2,537.5**	**2,599.2**	**2,065.1**
Diesel fuel	35,546.8	32,139.4	32,677.3	32,106.3	30,672.1	30,161.1
Share of admixture in %	6.1	8.6	7.2	7.3	7.8	6.4
Total fuels	**37,848.2**	**35,164.8**	**35,211.3**	**34,643.8**	**33,271.3**	**32,226.2**
Bioethanol ETBE	88.1	125.8	157.4	131.6	131.7	90.7
Bioethanol admixture	1,054.6	971.7	990.3	1,058.8	1,119.9	1,166.0
Bioethanol E 85	.	.	.	.	.	
Total bioethanol	**1,142.7**	**1,097.5**	**1,147.7**	**1,190.4**	**1,251.6**	**1,256.7**
Petroleum fuels	16,823.2	15,120.4	15,366.9	15,724.6	16,092.7	16,452.8
Petroleum + bioethanol fuels	17,965.9	16,217.9	16,514.6	16,915.0	17,344.3	17,709.5
Share of bioethanol in %	6.4	6.8	6.9	7.0	7.2	7.1

Note: incl. HVO, Data 2024 prelimenary

Sources: German Federal Office of Economics and Export Control, AMI

Table 3: Germany: Monthly domestic consumption of biofuels 2019–2024 in 1,000 t

	2019	2020	2021	2022	2023	2024*
Biodiesel blending						
January	182.62	221.72	175.30	180.41	199.80	189.41
February	145.13	212.69	158.20	206.67	191.57	181.08
March	172.67	221.96	186.42	235.94	239.60	225.12
April	180.57	194.34	211.89	219.45	200.43	195.89
May	185.78	242.25	214.88	212.30	207.70	204.44
June	191.11	227.75	213.58	198.37	231.36	197.69
July	220.98	288.80	234.10	205.95	224.53	208.80
August	214.37	282.56	260.78	217.06	233.38	200.66
September	204.33	303.29	260.45	202.12	223.93	190.73
October	198.19	271.76	245.43	216.62	203.23	110.85
November	204.24	229.77	201.18	219.57	207.86	106.92
December	201.44	209.55	189.46	215.14	230.31	90.80
Average	**191.79**	**242.20**	**212.64**	**210.80**	**216.14**	**175.20**
Total amount	**2,301.42**	**2,906.44**	**2,551.67**	**2,529.61**	**2,599.25**	**2,065.08**
Bioethanol						
January	95.26	102.21	75.89	94.47	81.00	98.98
February	81.95	95.53	59.39	83.64	80.36	86.96
March	82.28	84.99	81.11	98.46	79.06	109.74
April	89.45	60.84	90.79	112.84	84.15	97.07
May	103.94	89.23	112.20	94.50	100.54	100.70
June	100.48	93.68	93.45	91.52	94.54	97.43
July	99.77	112.67	98.31	104.33	100.15	105.55
August	94.37	105.04	99.76	106.71	94.02	100.86
September	96.81	92.12	98.89	100.34	95.38	111.46
October	101.45	100.67	126.67	97.92	93.44	95.25
November	100.66	86.26	99.03	105.76	98.94	93.11
December	96.28	75.84	95.11	99.76	115.20	93.86
Average	**95.22**	**91.59**	**94.22**	**99.19**	**93.07**	**99.25**
Total amount	**1,142.68**	**1,099.08**	**1,130.59**	**1,190.25**	**1,119.90**	**1,165.96**

Note: inkl. HVO. Data 2024 prelimenary
Sources: German Federal Office of Economics and Export Control. AMI

Table 4: Germany: Foreign trade in biodiesel 2019–2024 in t

	2019	2020	2021	2022	2023	2024
Import of biodiesel						
January	97,340	118,498	52,484	102,356	113,066	104,073
February	71,163	103,546	45,214	89,925	84,908	155,364
March	86,856	93,790	53,510	102,147	99,790	149,891
April	122,073	119,514	84,349	184,858	124,372	167,612
May	124,686	143,256	105,065	132,178	136,593	183,576
June	107,161	186,604	92,248	164,804	132,754	158,870
July	159,543	159,334	107,870	115,982	141,567	182,779
August	126,501	170,039	99,627	218,193	201,938	122,348
September	155,319	122,840	139,342	137,908	124,289	173,620
October	112,635	87,584	110,481	244,244	134,077	86,652
November	111,581	91,980	85,252	123,072	121,889	56,218
December	130,722	86,543	133,541	97,954	154,422	75,432
total	**1,405,579**	**1,483,526**	**1,108,982**	**1,713,621**	**1,569,663**	**1,616,433**
Biodiesel export						
January	183,590	206,446	212,388	212,483	261,277	335,483
February	193,992	195,023	172,209	280,371	233,772	251,834
March	205,928	193,790	165,372	264,242	211,221	251,997
April	169,000	183,303	191,654	198,225	254,422	257,911
May	230,393	133,350	201,186	135,413	194,404	327,949
June	163,145	260,696	190,130	209,466	281,482	252,525
July	172,055	187,574	176,678	149,576	178,230	245,879
August	192,742	218,806	190,007	240,355	255,669	217,003
September	197,228	238,532	199,481	297,900	241,657	290,502
October	193,140	166,365	196,706	259,963	344,199	289,107
November	181,609	181,040	218,676	239,672	205,719	282,385
December	177,904	247,227	210,784	238,728	209,628	231,279
Total	**2,260,727**	**2,412,153**	**2,325,268**	**2,726,394**	**2,871,680**	**3,233,854**

Note: inkl. HVO, Data for 2024 prelimenary
Sources: Federal Statistics Office of Germany, AMI

Table 5: Germany: Export of biodiesel [FAME] (2019–2024) in t

	2019	2020	2021	2022	2023	2024
Belgium	264,411	342,420	394,883	638,362	385,003	702689
Bulgaria	1	1,200	5	1	1	0
Denmark	27,269	22,451	22,649	17,982	36,667	22780
Estonia	.	1,890	786	301	0	0
Finland	2,626	525	790	635	470	535
France	53,701	68,473	76,455	53,811	104,767	75804
Greece	1	.	.	.	.	.
Ireland	.	0	.	.	.	.
Italy	12,829	17,848	28,693	20,467	23,601	19838
Croatia	500	100	1,013	2	10	1
Latvia	0	242	11,912	.	.	22750
Lithuania	977	1,920	17,720	1	0	5
Luxembourg	417	.	.	6,363	151	148
Malta	.	.	.	.	.	.
Netherlands	855,472	1,032,521	961,937	1,188,920	1,206,293	1412088
Austria	171,617	137,019	127,092	60,655	99,779	94840
Poland	239,225	261,153	240,008	248,877	304,132	397148
Portugal	8	4	5	8	11	372
Romania	-	3,935	22,214	4	-	0
Sweden	135,833	116,794	108,827	97,859	113,752	58632
Slovakia	21,271	18,411	11,416	1,926	17,215	11874
Slovenia	34,917	32,719	42,480	18,962	28,370	5236
Spain	350	669	77	163	193	260
Czech republic	56,036	26,308	35,280	25,997	39,759	44736
Hungary	315	7,072	531	779	2,167	667
Cyprus	.	.	.	.	.	.
EU-27	**1,877,773**	**2,093,672**	**2,104,773**	**2,382,070**	**2,362,339**	**2,870,402**
Norway	7,184	7,300		5	2	7
Switzerland	83,865	79,358	74,878	77,801	77,534	76,483
USA	183,250	164,062	144,071	287,209	444,104	271,948
UK	*107,902*	*67,004*	*964*	*634*	*610*	*552*
Other countries	753	757	582	842	516	222
Total	**2,260,727**	**2,412,153**	**2,325,268**	**2,748,561**	**2,885,105**	**3,219,614**

Note: Data for 2024 provisional
Sources: Federal Statistics Office of Germany, AMI

Table 6: Germany: Import of biodiesel [FAME] (2019–2024) in t

	2019	2020	2021	2022	2023	2024
Belgium	293,449	296,691	229,363	383,301	295,721	442731
Bulgaria	24,954	25,302	12,816	29,631	11,220	7215
Denmark	1,001	785	76	121	-	298
Estonia	23					123
Finland		1,992	18,020	41,794	38,884	20982
France	21,749	73,519	77,287	42,524	4,460	3865
Italy	33	177	1,017	733	29,042	10034
Lithuania						4
Croatia					1,366	146
Netherlands	713,134	701,379	519,418	879,341	873,699	835457
Austria	80,537	84,274	31,452	88,992	91,988	66503
Poland	94,316	138,690	116,362	84,491	80,068	64167
Portugal				277	85	
Romania	25	3,440	8,213	1,151	3,567	
Sweden	9	2	15	78	81	5852
Slovakia	1,464	2,278	249	3,642	7,506	
Slovenia		0	0	1	0	1
Spain	27					24
Czech republic	12,987	7,551	22,753	30,119	3,212	4601
Hungary			114	23		
EU-27	**1,243,706**	**1,336,081**	**1,037,153**	**1,586,216**	**1,440,898**	**1,462,000**
Indonesia	44	239	2,244	1,106	39	157
Canada		968	1,152	1,415	1,428	1,713
Malaysia	153,182	139,309	64,654	119,136	127,032	134,198
Norway	522	509	660	473	54	30
Philippines	1,517	263	1,255	1,877	1,805	2,842
USA	199	807	1,377	934	1,002	1,898
United Kingdom	*5,992*	*354*	*5*	*1*	*93*	*40*
Other countries	417	4,996	482	648	194	184
Total	**1,405,579**	**1,483,526**	**1,108,982**	**1,711,806**	**1,572,545**	**1,603,062**

Note: Data for 2023 provisional

Sources: Federal Statistics Office of Germany, AMI

Table 7: Statistical data on the fulfilment of the greenhouse gas quota 2017 – 2023

	2017	2018	2019	2020	2021	2022	2023*
Quotas placed on the quantities placed on the market (Quantities in million litres)							
Diesel fuel	42,372	41,746	41,701	37,513	37,344	35,979	36.158
Petroleum fuels	22,935	23,105	23,432	20,981	20,583	20,736	21.272
For the fulfilment of the Greenhouse gas reduction quantity required in t CO_{2eq}							
Reference value	198,806,042	224,409,745	225,553,789	207,950,673	203,526,286	200,790,522	208.143.950
Target value	7,952,240 (-4,0%)	215,433,356 (-4%)	216,531,638 (-4%)	195,439,792 (-6%)	191,314,710 (-6%)	186,735,186 (-7%)	191.492.434
Actual quota**						7.39%	8,32%
Actual emissions	-	214,592,554	215,545,804	195,305,575	188,910,680	183,419,224	190.636.291
Quantities for greenhouse gas mitigation eligible for consideration (in million litres)							
Replacing diesel fuel:							
Blending	2,458	2,659	2,778	4,059	3,138	3,107	2.984
Petroleum fuels complementary:							
Blending (incl. E85)	1,436	1,467	1,468	1,408	1,462	1,545	1.610
Pure fuels (FAME+PÖL+HVO)	4	4	3	11	17	19	50
Biogas in GWh (compressed and liquefied)	449	389	341	713	982	1,357	1.868
Natural gas (CNG+LNG+ synth. methane) in GWh	-	830	845	943	1,872	-	-
Liquefied petroleum gas (LPG+ Bio-LPG) in tons	-	423,473	397,025	339,552	359,855	-	-
Electricity in GWh	-	2	59	111	199	1,714	3.219
Hydrogen in tonnes	-	2	2	82	182	-	-
Achieved emission reduction of the fuels, in t CO_{2eq}							
Blending	7,552,170	9,329,327	9,485,954	12,763,118	10,654,212	10,928,302	10.717.906
Pure biofuels (incl. biomethane and bio LPG)	131,491	127,950	110,136	245,984	356,285	636,422	1.214.787
Liquefied petroleum gas (LPG)	-	399,335	374,394	321,608	339,344		
Natural gas (NG, LNG and synth. methane)	-	73,571	71,517	70,515	134,909		
Hydrogen	-	12	11	518	1,147	-	
Power	-	197	5,730	13,636	25,013	843,536	1.484.631
Reductions from UER	-	-	-	784,852	1,825,783	1,918,251	2.070.106
Carried forward from the previous year	1,045,710	798,500	854,050	-	922,477	2,386,610	3.374.653
Total	**8,729,371**	**-**	**10,901,792**	**14,200,231**	**15,249,568**	**16,713,121**	**18.862.083**

Continued on the next page

	2017	2018	2019	2020	2021	2022	2023
Quantities exceeding the upper limits quantities							
Upper limit in accordance with Section 13 of the 38th BImSchV (biofuels from food and feed crops) in GJ	-	-	-	-	-	34,592	2,250
Upper limit in accordance with Section 13a of the 38th BImSchV (waste-based biofuels) in GJ	-	-	-	-	-	6,372	44,993
Upper limit in accordance with Section 13b of the 38th BImSchV (biofuels from raw materials with a high ILUC risk) in GJ	-	-	-	-	-	66,393	1,268
Quantities in t CO_{2eq}, eligible for the commitment year							
Overfulfilment	798,580	855,171	991,136	921,860	2,421,140	3,369,923	6,308,517
Obligation not fulfilled in the year							
Existing or legally established levy pursuant to § 37c para. 2 BImSchG in euros	10,081,000	6,594,000	2,425,000	552,000	59,537,000	31,488	9,811

* The figures are rounded values. These statistics reflect the situation as of 01.06.2024. Changes may occur, for example, as a result of changes may occur, e. g. as a result of subsequent notifications or appeal proceedings.

** Since diesel and petrol fuels are included in the actual emissions with a value that deviates from the base value, the actual savings required may differ from the calculated savings.

Source: zoll.de

Table 8: Statistical data on the fulfilment of the progressive quota – quota year 2023*

Key figures of the 2023 advanced quota (FQ) in GJ (gigajoules)	
Total energy in the reference value from the GHG quota	2.158.811.020
Quota (0.3 % of the reference value energy)	6.413.142
Quantities considered for the calculation of the FQ in GJ	
Biodiesel	40.951.715
HVO (incl. co processed HVO + biogenic oils)	15.829.925
Bioethanol and ETBE	940.061
Biomethanol and MTBE	477.812
Biomethane (compressed + liquefied)	6.612.237
Biogenic liquefied petroleum gas (Bio-LPG)	-
Hydrogen	-
Quota transfer from previous year	22.160.599
total	**86.972.349**
Quantities eligible for the commitment year 2024 in GJ	
Overachievement 2023	27.398.997
Obligation not fulfilled in 2022	
Existing or legally established levy pursuant to § 14 para. 3 of the 38th BImSchV in conjunction with § 37c para. § 37c para. 2 sentence 3 BImSchG in 1,000 euros	-

The figures are rounded values. These statistics reflect the current state of affairs and processing as of 01.06.2023.
Due to subsequent notifications and corrections, the figures may still change.
Source: zoll.de

Table 9: What sub quota must be met? The minimum share is:

Commitment year	Fuel volume* that the company must have placed on the market in the previous yearin order to be subject to the quota	Required proportion of advanced fuels**:
from 2020	20 Petajoules	0.05%
from 2021	10 Petajoules	0.1%
from 2022	10 Petajoules	0.2%
from 2023	2 Petajoules	0.3%
from 2024	2 Petajoules	0.4%
from 2025	no minimum quantity	0.7%
from 2026	no minimum quantity	1.0%
from 2028	no minimum quantity	1.7%
from 2030	no minimum quantity	2.6%

* Based on the energy content of the fossil petrol and diesel fuels to be taken into account in the reference value calculation.
** Based on the energy content of the fuels to be taken into account in the reference value calculation plus the energy content of the compliance options used. (Advanced biofuels as a simple quantity)
Source: zoll.de

Table 10: (Bio-)fuel production capacities 2024 in Germany

Operator/Plant	Location	Capacity (t/year)	
Biodiesel			
ADM Hamburg AG	Hamburg	not available	●
ADM Mainz AG	Mainz	not available	●
Bioeton Deutschland GmbH	Kyritz	80,000	
Biosyntec GmbH	Regensburg	50,000	
Biowerk Sohland GmbH	Sohland an der Spree	100,000	●
BKK Biodiesel GmbH	Rudolstadt	4,000	
Bunge Deutschland GmbH (ehemals MBF GmbH)	Mannheim	100,000	●
Cargill Deutschland GmbH	Frankfurt am Main	350,000	●
ecoMotion GmbH	Sternberg	100,000	●
ecoMotion GmbH	Lünen	50,000	●
ecoMotion GmbH	Malchin	12,000	●
gbf german biofuels gmbh	Pritzwalk OT Falkenhagen	132,000	●
Gulf Biodiesel Halle GmbH	Halle (Saale)	58,000	
KFS Biodiesel GmbH & Co. KG	Cloppenburg	50,000	●
KFS Biodiesel Kassel GmbH	Kaufungen	50,000	
KFS Biodiesel Köln GmbH	Niederkassel	120,000	
Louis Dreyfus Company Wittenberg GmbH	Lutherstadt Wittenberg	200,000	●
MD-Biowerk GmbH	Tangermünde	33,000	
Mercuria Biofuels Brunsbüttel GmbH & Co. KG	Brunsbüttel	250,000	
Natural Energy West GmbH	Marl	200,000	●
PME BioLiquid GmbH & Co. Betriebs KG	Wittenberge	120,000	
REG Germany AG	Borken	70,000	
REG Germany AG	Emden	100,000	●
Tecosol GmbH	Ochsenfurt	75,000	●
VERBIO Bitterfeld GmbH	Bitterfeld	230,000	●
VERBIO SchwedtGmbH	Schwedt/Oder	330,000	●
VITERRA Magdeburg GmbH	Magdeburg	250,000	
VITERRA Rostock GmbH	Rostock	200,000	
Total		**3,314,000**	

Source: VDB 05/2025

Note: ● = AGQM-Member

Table 11: (Bio-)fuel production capacities 2024 in Germany (Continued)

Operator/Plant	Location	Capacity (t/year)
Bioethanol		
Cosun Beet Company	Anklam	55,000
Bioethanol Icking GmbH*	Reichenbach/O.L.	13,000
Cargill Deutschland GmbH*	Barby	40,000
CropEnergies Bioethanol GmbH	Zeitz	317,000
Euro-Alkohol GmbH*	Lüdinghausen	16,000
CE Advanced Bioenergies GmbH	Weselberg	4,000
Nordbrand Nordhausen GmbH*	Nordhausen	16,000
Nordzucker AG	Wanzleben-Börde	100,000
Sachsenmilch Leppersdorf GmbH	Leppersdorf	8,000
VERBIO Schwedt GmbH	Schwedt	200,000
VERBIO Zörbig GmbH	Zörbig	60,000
Total		**829,000**

Sources: VDB (with information via UFOP, FNR, AGQM, names partly abbreviated).
DBV and UFOP recommend purchasing biodiesel from the members of the Arbeitsgemeinschaft Qualitätsmanagement Biodiesel e. V. (AGQM).
* Production not for the fuel market

Table 12: Refinery capacities in 2022, crude oil processing (atmospheric distillation) in 1,000 tonnes

	Location	Capacity (t/year)
RAFFINERIE HEIDE	Heide / Holstein	4,200
NYNAS	Harburg	1,825
SHELL DEUTSCHLAND OIL GMBH		
- RHEINLAND RAFF WERK WESSELING	Wesseling	7,300
- RHEINLAND RAFF WERK GODORF	Godorf	9,300
HES Wilhelmshaven	Wilhelmshaven	3,000
OMV DEUTSCHLAND GMBH	Burghausen	3,700
Gunvor RAFF. INGOLSTADT GMBH	Ingolstadt	5,000
HOLBORN EUROPA RAFF. GMBH	Hamburg	5,150
MIRO KARLSRUHE	Karlsruhe	14,900
BP Raffinerie Gelsenkirchen	Gelsenkirchen	12,800
BAYERNOIL RAFF'GESELLSCHAFT	Vohburg	10,300
BP Europa SE - BP Lingen	Lingen	4,700
TOTAL RAFF. MITTELDEUTSCHL GMBH	Spergau	12,000
PCK RAFFINERIE GMBH SCHWEDT	Schwedt	11,480
Total		**105,655**

Table 13: UCO imports by the EU in 2019 – 2024 (mt)

	2019	2020	2021	2022	2023	2024
China	505,513	273,019	618,014	912,818	338,362	391,829
Malaysia	161,570	239,865	166,185	161,596	226,068	217,236
UK	*99,174*	*153,043*	*119,819*	*191,533*	*201,804*	*140,825*
Saudi Arabia	85,024	65,037	66,862	81,107	85,247	96,811
Russia	60,372	99,498	82,078	72,720	83,798	78,299
Argentina	21,755	27,921	23,701	2,867	37,915	51,034
Chile	21,270	34,428	61,387	53,577	7,107	41,256
Iran	,	185	3,628	11,709	10,919	33,319
Belarus	20,815	21,676	21,193	20,418	28,427	31,108
South Africa	19,513	16,073	44	23,413	27,117	30,117
Singapore	9,465	7,162	5,258	2,420	8,991	29,467
Egypt	17,360	20,496	312	3,130	22,727	28,405
UAE	13,761	9,935	20,292	13,460	22,248	24,985
Kazakhstan	23	23	,	769	16,188	24,244
Thailand	1,299	,	,	6,929	43,755	23,668
Israel	2,700	158	1,518	6,313	16,664	17,508
Indonesia	52,209	59,308	56,499	37,366	45,194	15,754
Iraq	455	1,020	2,761	3,343	5,390	10,398
Switzerland	13,696	11,565	11,870	14,145	10,617	10,390
Hong Kong	15,360	6,352	2,480	3,256	17,641	9,988
Peru	8,768	6,909	9,266	8,597	5,569	9,785
Ukraine	1,142	1,427	2,717	3,004	5,386	9,639
Kuwait	10,002	5,496	6,757	8,187	10,938	9,578
Lebanon	9,667	3,213	1,757	2,781	7,483	7,986
Jordan	5,339	2,881	6,130	1,747	7,246	7,979
Taiwan	14,886	7,781	1,289	1,359	11,358	7,887
Colombia	8,445	7,523	5,372	8,654	2,265	7,354
Serbia	4,334	4,758	5,114	3,934	4,826	6,757
Morocco	3,287	2,897	5,577	7,047	5,998	6,449
Japan	21,872	10,530	10,238	3,322	8,389	6,184
USA	133,850	77,519	22,233	28,519	2,042	5,047
Qatar	1,182	1,758	1,143	1,659	1,210	4,567
Norway	6,274	5,136	3,377	4,131	2,428	4,324
Costa Rica	,	,	,	321	542	3,674
Bahrain	2,866	2,586	1,253	1,113	3,371	3,538
Vietnam	24,968	8,971	6,378	49,247	16,511	3,091
Turkey	284	,	918	2,979	273	3,027
Panama	3,634	2,745	2,791	3,652	2,660	2,906
Tunisia	2,139	1,073	1,042	933	1,392	2,238
Georgia	183	486	499	861	1,472	2,215
Others	15,901	16,168	20,603	22,646	32,091	34,267
Intra-EU-27	**1,810,456**	**1,607,933**	**1,992,082**	**2,613,276**	**2,246,518**	**2,500,394**
Total	**3,138,441**	**3,113,638**	**3,428,233**	**4,403,803**	**3,635,947**	**3,635,947**

Note: Customs code 1518 00 95 is included.
Source: Eurostat/AMI

Table 14: EU production of biodiesel and HVO 2017–2024 in 1,000 t

	2017	2018	2019	2020	2021	2022	2023	2024
Belgium	290	252	254	213	192	155	248	150
Denmark	120	130	130	125	120	115	120	130
Germany	3,208	3,344	3,584	3,127	3,378	3336	3524	3607
France	1,946	2,211	2,072	2,200	1,559	1388	1308	813
Italy	918	990	1,164	1,037	1,237	1,173	1142	1259
Netherlands	1,929	1,839	1,902	1,939	1,973	1857	2035	1865
Austria	295	287	299	293	295	318	346	373
Poland	904	881	966	955	991	982	975	1020
Portugal	356	363	292	262	238	256	224	241
Sweden	209	258	322	312	393	367	438	421
Slovakia	109	110	109	117	117	117	113	115
Spain	1,878	2,143	2,040	1,895	1,543	1581	1320	1521
Czech republic	157	194	248	259	245	242	261	276
EU other	1,024	1,180	1,079	1,523	1,679	1,513	1,588	1,359
EU-27	**13,343**	**14,182**	**14,461**	**14,257**	**13,960**	**13,400**	**13,642**	**13,150**
UK	467	476	545	535	535	593	573	553

Source: S&P Global Commodity Insights, May 2025

Table 15: Global biodiesel and HVO production 2017–2024 in 1,000 t

	2017	2018	2019	2020	2021	2022	2023	2024
EU	11,049	11,626	11,942	10,931	10,388	10,110	9,920	9,757
Canada	350	270	350	355	315	245	252	408
USA	5,315	6,186	5,744	6,044	5,458	5,396	5,658	5,568
Argentinia	2,871	2,429	2,147	1,157	1,724	1,910	831	1,162
Brazil	3,776	4,708	5,193	5,660	5,954	5,523	6,624	8,010
Colombo	510	555	530	530	580	650	700	705
Peru	33	99	135	164	183	183	175	175
China, Mainland	918	734	826	1,250	1,725	2,200	2,250	1,725
India	132	163	210	190	155	160	200	220
Indonesia	3,006	5,428	7,391	7,560	9,030	10,400	11,900	11,447
Malaysia	720	1,090	1,423	906	976	1,162	1,700	1,950
Philippines	194	199	213	165	165	189	204	232
Thailand	1,256	1,392	1,624	1,622	1,459	1,224	1,469	1,467
Rest of the world	1,446	1,627	1,801	1,791	1,801	1,784	1,824	1,950
TOTAL	**31,577**	**36,506**	**39,530**	**38,326**	**39,913**	**41,136**	**43,707**	**44,776**

Renewable Diesel/HVO	2017	2018	2019	2020	2021	2022	2023	2024
EU	2,294	2,556	2,519	3,326	3,572	3,290	3,722	3,393
USA	763	902	1,453	1,575	2,406	4,379	7,656	9,413
Other	1,100	768	1,378	1,621	1,644	2,050	2,156	2,652
TOTAL	**4,157**	**4,226**	**5,350**	**6,522**	**7,622**	**9,719**	**13,534**	**15,458**

Source: S&P Global Commodity Insights, May 2025

Table 16: Global biodiesel and HVO consumption 2017–2024 in 1,000 t

Biodiesel consumption	2017	2018	2019	2020	2021	2022	2023	2024
EU-27	10,434	11,885	12,258	11,368	11,779	11,523	11,602	9,851
Canada	370	365	345	435	325	370	494	419
USA	6,613	6,341	6,038	6,250	5,485	5,309	6,459	6,388
Argentinia	1,173	1,099	1,071	477	438	712	581	774
Brazil	3,753	4,678	5,167	5,045	5,993	5,486	6,515	7,973
Colombo	513	552	532	502	598	686	699	705
Peru	290	291	293	251	317	325	336	345
China, Mainland	275	361	378	220	229	243	280	350
India	65	75	88	45	9	35	200	210
Indonesia	1,727	2,624	4,609	6,460	6,992	8,815	9,881	10,000
Malaysia	456	408	610	763	773	1,116	1,100	1,110
Philippines	180	181	192	142	168	190	200	230
Thailand	1,255	1,422	1,449	1,435	1,126	968	1,091	1,157
Rest of the world	1723,5	2592,3	2885,2	2484,4	2193	2,332	2,432	2,122
TOTAL	**28,828**	**32,874**	**35,915**	**35,877**	**36,425**	**38,110**	**41,870**	**41,634**

HVO consumption*	2017	2018	2019	2020	2021	2022	2023	2024
EU-27	2,022	1,822	2,221	3,272	3,271	2,951	3,716	3,375
Canada	251	268	337	306	350	375	450	1,267
USA	1,207	1,080	1,995	2,195	3,158	4,708	8,470	10,157
Rest of the world	356	214	298	273	348	425	592	820
TOTAL	**3,836**	**3,384**	**4,851**	**6,046**	**7,127**	**8,459**	**13,228**	**15,619**

Total Biodiesel/ HVO consumption worldwide (all sectors)	**35,346**	**39,735**	**44,861**	**45,592**	**47,916**	**50,717**	**59,369**	**61,186**

* HVO = Hydrogenated Vegetable Oil; all data for road transport.
Source: S&P Global Commodity Insights, May 2025

Biofuel mandates

Table 17: National biofuel mandates 2024

	Type	minimum Total biofuel (%)	Progressive Biofuels* (%)	Biofuel in petrol (%)	Biofuel in diesel (%)	Reduction of the GHG intensity of fuels (%)
Austria	Energy	-	0.2	3.4	6.3	-7
Belgium	Energy	10.5	0.22[2]	5.7	5.7	-
Bulgaria	Volume	-	1 (in Diesel)	9	6	-
	Energy	-	0.05	-	-	
Croatia	Energy	-	0.6	-	-	-6
Cyprus	Energy	-	0.2	-	-	-6
Czech Republic	Volume	-	0.22	-	-	-6
Denmark	Energy	-	-	-	-	-3.4
Estonia	Energy	7.5[3]	0.5	-	-	-
Finland	Energy	13.5[4]	4	-	-	-
France	Energy	-	1.3 (in petrol) 0.5 (in Diesel)	9.9	9.2	-10
Germany	Energy	-	0.4	-	-	-9.25[5]
Greece	Energy	-	-	3.3	-	-
	Volume	-	0.2	-	7	
Hungary[6]	Energy	8.4	0.5	6.1 (RON 95)	0.2 (HVO)	-
Irland[7]	Energy	21	1 (in energy)	-	-	-6
Italy[8]	Energy	10.8	4.2	1	-	-6
Latvia	Volume	-	0.2	9.5 (RON 95)	6.5[9]	-
Lithuania	Energy	7.8	0.7	6.6	6.2	-
Luxembourg	Energy	7.7[10]	-	-	-	-6
Malta	Energy	-	0.2	-	-	-
Netherlands[11]	Energy	28.4	2.9	-	-	-6
Poland	Energy	9.1	0.1	5.3 (RON 95)[12] 3.2 RON 98)	5.2	-
Portugal	Volume	11.5	0.5	-	-	-
Romania	Volume	-	-	8	6.5	-
Slovakia	Energy	8.8	0.65 (double counting)	-	-	-6
	Volume	-	-	9[13]	6.9	
Slovenia	Energy	10.6[14]	0.2	-	-	-6
Spain	Energy	11[15]	0.5	-	-	-6
Sweden		-	-	-	-	-6

[1] After double counting.
[2] Double counting at 0.95%
[3] Crop-based biofuels capped at 4.5%.
[4] Crop-based biofuels capped at 2.6%.
[5] Caps (in e/e): crop-based biofuels at 4.4%; high-ILUC Risk biofuels at 0%; Annex IX-B at 1.9%.
[6] Annex IX-B biofuels capped at 4% after double-counting.
[7] Crop-based biofuels capped at 2%.
[8] Italy has a mandate of 300kt/year for HVO.
[9] During the period from 1April till 31 October.
[10] 9.7% with multipliers. Can be lowered to 6%. Advanced biofuels must be at least 50% of the biofuels mix after double counting. Crop-based capped at 5%.
[11] Crop-based biofuels capped at 1.4%. UER cannot be counted towards the target 6% GHG intensity target.
[12] Specifica submandate for bioethanol in RON95 gasoline: 4.59%
[13] Specific submandate for ETBE: 3%
[14] Obligation for renewable energy in transport, to be achieved through the use of biofuels, renewable electricity, RCF, RFNBOs.
[15] Crop-based capped at 7%. High ILUC-risk biofuels cap (incl. palm oil, oil palm fresh fruit bunches, PFAD, palm kernel oil and palm kernel shells oil) at 3.1%.
Source: www.ePure.org (retrieved: June 2025)

Table 18: Biofuel mandates in the EU for selected member states [1]

a) Belgium

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double Counting
Since January 1, 2023	10.5	5.7	5.7	max. 0.95%

Source: FAS USEU based on Law of July 7, 2013; Law of July 21, 2017; Law of May 4, 2018; Law of December 27, 2021

Penalties

Failing to meet the mandates can result in the following penalties: 1400 per 34 GJ undersupplied.

Source: ePure

b) Denmark

	Overall Percentage (% cal)	GHG emission reduction (%)	Cap on cropbased biofuels (% vol)	Advanced Biofuels[2] (Annex IX-A) (% cal)	Multiple Counting
2022–2024		3.4	Biofuels based on palm oil and soy phased out by 2022[1]	With the introduction of the CO_2 reduction requirement from 2022, there is no longer an obligation on fuel suppliers to ensure a minimum share of Annex IX-A biofuels.	x 2 for advanced biofuels; x 4 for renewable electricity in road, x 1.5 in train; x 1.2 for aviation and maritime fuels
2025–2027		5.2	All High-ILUCrisk biofuels phased out by 2025	1	
2028–2029		6		1	
2030		7		3.5	

Source: FAS The Hague based on ePure
1) Unless certified low-ILUC-risk.
2) The use of biofuels produced from Annex IX-B feedstock is capped at 1.7 percent.

Crop-based biofuels:*

All high-ILUC-risk biofuels should be phased out no later than 2025. Biofuels based on palm oil (and its by-products, incl. PFAD) and soy are excluded from 2022, unless certified low-ILUC-risk.

[1] **Source for Table 18 and further information:**
GAIN Report Biofuel Mandates in the EU by Member State - 2025
(No. E42025-0004, published 16 July 2025, author: Katarina von Witzke), see also bit.ly/3KZsmdM

Table 18: Biofuel mandates in the EU for selected member states – continued

c) Germany

	GHG Emission Reduction [1] (%)	Advanced Biofuels2 [2] (% cal)	Cap on crop-based biofuel 2 [2] (% cal)	Cap on UCO- and animal fatba-sed biofuels2 [2] (% cal)	Cap on feedstocks with high ILUC risk [2]. [5] (% cal)	Multiple counting	Sustainable Aviation Fuel [1] [6] % cal
2024	9.25	0.4 [3]					–
2025	10.5	0.7					
2026	12	1					0.5
2027	14.5	1	4.4	1..9	0	See table below	0.5
2028	17.5	1.7					1
2029	21	1.7					1
2030	25	2.6					2

Sources: FAS Berlin based on Federal Act on Protection against Air Pollution , 38th Implementation Ordinance on the Federal Act on Protection against Air Pollution and Upstream Emission Reduction Ordinance (all in German language)

1) Federal Act on Protection against Air Pollution, Through the end of mandate year 2024 (under certain conditions until September 1, 2025), emission credits from upstream emission reduction (UER) projects may be taken into account to comply with the GHG reduction mandate.
2) 38th Implementation Ordinance on the Federal Act on Protection against Air Pollution.
3) Companies that put on the market 10 PJ or less of biofuels in the previous year are exempted.
4) Companies that put on the market 2 PJ or less of biofuels in the previous year are exempted.
5) Effectively, this means that since 2023, biofuels based on palm oil feedstock no longer count against the mandates, unless certified low ILUC-risk.
6) Only non-biomass-derived sustainable aviation fuel (SAF) is eligible for counting against this mandate.

Multiple counting

Compliance Option	Conditions	Factor
Advanced biofuels - Except when produced from POME or empty palm fruit bunches [1]	Volumes that exceed the mandate	2
Hydrogen and PtX fuels [2]	If not derived from biomass	2
Electricity	For road e-vehicles	3

Sources: FAS Berlin based on
1) 38th Implementation Ordinance on the Federal Act on Protection against Air Pollution
2) Federal Act on Protection against Air Pollution

Penalties

Failing to meet the mandates can result in the following penalties:

Mandate	Year	Penalty
GHG reduction	Since 2022	EUR 0.60 per kg CO_2 eq under allocated reduction
SAF	Since 2022	EUR 70 per GJ under allocated

Source: FAS Berlin based on Federal Act on Protection against Air Pollution

Table 18: Biofuel mandates in the EU for selected member states – continued

d) Finnland

	Overall Percentage (% cal)	Advanced biofuel	Cap on crop-based biofuel[1]	Multiple Counting
2024	13.5	4	2.6 High ILUC-Risiko: 0.0	No
2025	16.5	4		
2026	19.5	6		
2027	22.5	6		
2028	-	8		
2029	-	9		
ab 2030	-	10		

Source: FAS The Hague based on ePure
1) Applicable since July 1, 2021. Biofuels produced from Annex IX- B feedstock are not capped.

e) France

	Bioethanol (% cal)	Advanced Bioetha-nol (% cal)	Biodiesel (% cal)	Advanced Biodiesel (% cal)	Double Counting [1]
2023–2027	10.5	1.8	9.4	0.7	Yes

Source: FAS Paris
1) Double counting for cellulosic biofuels and waste biofuels produced from the feedstocks listed in Annex IX of Directive 2009/28/EC except tall oil and tall oil pitch.

Cap on certain feedstocks

Since 2019 the share of energy that can be taken into account towards France's mandate is limited to a maximum of:

- Seven percent for conventional biofuels including biofuels produced from palm oil fatty acid distillates.
- 0.9 percent for used cooking oil and animal fats.
- 0.6 percent for tall oil and tall oil pitch.
- 0.2 percent for sugar plant residues and starch residues extracted from starch-rich plants (0.4 percent from 2020).
- Palm oil is excluded since January 1, 2020.
- Soybean oil is excluded since January 1, 2022

[1] **Source for Table 18 and further information:**
GAIN Report Biofuel Mandates in the EU by Member State - 2025
(No. E42025-0004, published 16 July 2025, author: Katarina von Witzke), see also bit.ly/3KZsmdM

Table 18: Biofuel mandates in the EU for selected member states – continued

f) Ireland

	Overall Percentage (% vol)	Annex IX biofuels (% cal)	Multiple Counting
2024	21	0.3	x2 for Annex IX biofuels; x4 for renewable electricity in road, x1.5 in train; x1.2 for aviation and maritime fuels
2025	25	1	
2026	29	1	
2027	34	1	
2028	39	1	
2029	44	1	
2030	49	3.5	

Source: FAS London and ePure

g) Italy

	Overall Obligation (%)	Advanced Biofuels Obligation (%)	Bioethanol (%)	Advanced Biomethane Quota(%)
2024	10.8	4.2	1	2.9
2025	11.7	4.9	3	3.5
2026	12.6	5.5	3.4	3.9
2027	13.4	6.1	3.8	4.3
2028	14.3	6.7	4.2	4.8
2029	15.2	7.4	4.6	5.2
2030	16	8	5	5.7

Source: FAS Rome, based on a decree dated March 16, 2023, amended by a decree dated October 20, 2023, issued by Italy's Ministry of Environment and Energy Security

h) The Netherlands

	Overall Percentage (% cal)	Of which advanced Annex IX-A biofuels (% cal)	Cap on conventional crop-based biofuel (% cal)	Multiple Counting
2024	28,4	2,9	1.4 0 for Biofuels made from palm and soy, except for certified lowILUC-risk feedstock	Annex IX A and B: x 1.6 Electricity: x 4 Gaseous fuels: x 2 Maritime: x 0.8 Aviation: x 1.2
2025	29,4	3,6		
2026	22,3	4,2		
2027	23,6	4,9		
2028	25,0	5,6		
2029	26,5	6,3		
2030	28,0	7,0		

Source: FAS The Hague based on ePure and government website: https://www.emissieautoriteit.nl/onderwerpen/algemeenhernieuwbare-energie-voor-vervoer

Table 18: Biofuel mandates in the EU for selected member states – continued

i) Austria

	Overall Percentage (energy content, % cal)	Biodiesel (% cal)	Bioethanol (% cal)	Advanced Biofuels (% cal)	GHG Emission Reduction (%) [1)]	Cap on cropbased biofuels (% cal)	Multiple Counting
2024	None	6.3	3.4	0.2	7	7[2)]	no
2025				1	7.5		
2026				1	8		
2027				1	9		
2028				1	10		
2029				1	11		
2030				3.5	13		

Source: FAS Vienna based on Austrian Fuels Order 2012, (with its 2014, 2017, 2018, 2020, 2022, and 2024 amendments)

To reach the GHG reduction target, the following may be taken into account:

- Electric power from renewable energy sources used for electrically powered motor vehicles may also be taken into account (multiple counting x4 for renewable electricity in road transport).
- Palm oil-based biofuels are excluded since July 1, 2021.

Penalties
Failing to meet the mandates can result in the following penalties

Mandate	Penalty
Energy	43 Euro per GJ under supplied
GHG reduction 2024 and onwards	600 Euro per MT CO_2 eq of unmet GHG reduction target

[1] **Source for Table 18 and further information:**
GAIN Report Biofuel Mandates in the EU by Member State - 2025
(No. E42025-0004, published 16 July 2025, author: Katarina von Witzke), see also bit.ly/3KZsmdM

Table 18: Biofuel mandates in the EU for selected member states – continued

j) Poland

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Doppelte Anrechnung
2024	9.1	5.2	3.2	Yes
2025	9.2	5.2	4.59	

Source: FAS Warsaw based on the Polish Act on Bio-components and Liquid Biofuels as amended in March 2025.

	Advanced Biofuel Sources, Part A and Part B of Annex IX, Mandates and Cap	
	Part A Mandates (% cal)	Part B Cap(% cal)
2026	1	3.4
2027	1	3.4
2028	1	3.4
2029	1	3.4
2030	3.5	3.4

Source: FAS Warsaw based on the Polish Act on Bio-components and Liquid Biofuels as amended in March 2025.

k) Portugal

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol/ ETBE (% cal)	Fortschrittliche Biokraftstoffe (% cal)	Cap on conventional crop-based biofuel (% cal)	Doppelte Anrechnung
2024	11.5	-	-	0.7	7[1)]	Yes
2025–2026	13			2		
2027–2028	14			4		
2029–2030	16			7		

Sources: FAS Madrid based on consumption mandates: Decree-Law 117/2010, Decree-Law 69/2016, Law 42/2016, Budget Law for 2018 and 2019 and Decree-Law 8/2021 as amended by Rectification Declaration 9-A/2021, Decree-Law 84/2022, and Decree-Law 23/2023. Double counting: Decree-Law 117/2010 and Annex III in Implementing Order 8/2012.

1) Food-based biofuels are capped at 2020 levels up to one percent higher, but with a maximum cap of seven percent for each MS

l) Sweden

	GHG Reduction Target	
	Gasoline (%)	Diesel (%)
2024–2026	6	30,5
ab 2027	-	-

Source: FAS The Hague based on ePure and Policy Briefing Nordic Council of Ministers

Following a change in government, mandate obligation rates were lowered significantly. The Swedish Parliament approved a government proposal for a sharp reduction in the greenhouse quota in road transport from January 1, 2024, and an abolishment of the quota from 2027.

Tax incentives: High blends, such as E85, ED95, HVO100, and FAME100, do not count towards the achievement of the obligations and are incentivized through a tax reduction

Table 18: Biofuel mandates in the EU for selected member states – continued

m) Spain

	Overall Percentage (% cal)	Annex IXPart A (%cal)	Annex IX-Part B (% cal)	High ILUC Risk Biofuels (% cal)	Cap on cropbased biofuels (% cal)	Double counting
2024	11	0.5	1.7	3.1	3.1	Yes
2025	11.5	1.0				
2026	12	1.25		0	2.6	
2030	12	3.5				

Source: FAS Madrid

Penalties
Those failing to meet the mandates may face the following penalties:

Year	Penalty
Since 2022	EUR 1,623 per missing certificate (each certificate equals one Ktoe.)

Source: FAS Madrid

n) Czechia

	Renewable energy in transport (% cal)	Advanced biofuels Biomethane	Minimum GHG emission reduction	Biodiesel (% vol)	Bioethanol (% vol)	Double counting [1]
2022–2024	-	0.22	4.1	-	-	Yes. Applies only to fuels listed in Annex IX.A, IX.B and to BioLPG.
2025	-	1.07	4.1			
2030	9.5	1.07	4.1			

Source: FAS Prague
1) Pursuant to the Act on Subsidised Energy Sources and Amendments to Certain Other Acts No. 382 Coll., effective 15 September 2021.

Tables BLE Evaluation Report 2023

Table 19: Germany: Biofuel feedstocks in terajoules[1]

Fuel type	Bioethanol			Biodiesel (FAME)		
Quota year	2021	2022	2023	2021	2022	2023
Feedstock						
Waste/Residual	1,748	1,230	2,135	28,881	41,162	58,780
Ethiopian mustard				51	147	111
Cereal whole plant						
Fodder beets						
Grass/arable grass						
Barley	977	655	827			
Maize	14,721	16,526	15,505			
Palm oil				28,520	9,267	9,267
Rapeseed				22,084	22,259	21,918
Rye	4,077	1,001	340			
Soy				4,612	8,679	1,942
Sunflowers				629	1,138	1,002
Triticale	1,401	2,532	1,724			
Wheat	3,890	4,456	7,066			
Sugar cane	2,967	4,131	4,799			
Sugar beet	877	423	666			
Total	**30,656**	**30,954**	**33,061**	**84,776**	**82,652**	**83,773**

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding

Table 20: Germany: Biofuel feedstocks in 1,000 t[1,2]

Fuel type	Bioethanol			Biodiesel (FAME)		
Quota year	2021	2022	2023	2021	2022	2023
Feedstock						
Waste/Residual	66	46	81	772	1,101	1,573
Ethiopian mustard				1	4	3
Cereal whole plant						
Fodder beets						
Grass/arable grass						
Barley	37	25	31			
Maize	556	624	586			1
Palm oil				763	248	
Rapeseed				591	596	586
Rye	154	38	13			
Silage maize						
Soy				123	232	52
Sunflowers				17	30	27
Triticale	53	96	65			
Wheat	147	168	267			
Sugar cane	112	156	181			
Sugar beet	33	16	25			
Total	**1,158**	**1,170**	**1,249**	**2,267**	**2,212**	**2,242**

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding
[2] The conversion into tonnage was made on the basis of the quantity data

Biomethan			HVO			Vegetable oil			
2021	2022	2023	2021	2022	2023	2021	2022	2023	Quota year
									Feedstock
2,750	4,678	4,777	6,659	16,801	16,664				Waste/Residual
									Ethiopian mustard
45	21	10							Cereal whole plant
1									Fodder beets
14	4	3							Grass/arable grass
									Barley
610	82	111							Maize
			13,066	4,049		8	1		Palm oil
						30	34	9	Rapeseed
26									Rye
					13				Soy
				142			3		Sunflowers
									Triticale
									Wheat
									Sugar cane
32	<0.5	3							Sugar beet
3,477	**4,786**	**4,786**	**19,725**	**20,991**	**16,688**	**38**	**38**	**9**	**Total**

Biomethan			HVO			Vegetable oil			
2021	2022	2023	2021	2022	2023	2021	2022	2023	Quota year
									Feedstock
55	94	1	153	385	382				Waste/Residual
									Ethiopian mustard
1	<0.5	<0.5							Cereal whole plant
									Fodder beets
<0.5	<0.5	<0.5							Grass/arable grass
									Barley
12	2	<0.5							Maize
			300	93		0.2	<0.5		Palm oil
					<0.5	1	1	<0.5	Rapeseed
1		<0.5							Rye
									Silage maize
					<0.5				Soy
				3			<0.5		Sunflowers
									Triticale
									Wheat
									Sugar cane
1	<0.5	<0.5							Sugar beet
70	**96**	**1**	**453**	**482**	**383**	**1**	**1**	**<0.5**	**Total**

Table 21: Germany: Biofuel feedstocks by origin in terajoules[1]

Region	Africa			Asia			Australia		
Quota year	2021	2022	2023	2021	2022	2023	2021	2022	2023
Feedstock									
Waste/Residual	644	864	451	15,428	30,485	47,477	30	122	10
Ethiopian mustard									
Barley									
Cereal whole plant									
Fodder beets									
Grass/arable grass									
Maize			32						
Palm oil				38,936	12,667		3,115	1	4
Rapeseed				11	11	<0.5		6,173	6,28
Rye									
Silage maize									
Soy								<0.5	<0.5
Sunflowers									
Triticale									
Wheat									
Sugar cane									
Sugar beet									
Total	644	864	483	54,376	43,163	47,478	3,144	6,297	6,303

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding

Table 22: Germany: Biofuel feedstocks by origin in 1,000 t[1,2]

Region	Africa			Asia			Australia		
Quota year	2021	2022	2023	2021	2022	2023	2021	2022	2023
Feedstock									
Waste/Residual	17	23	12	393	764	1,222	1	3	0
Ethiopian mustard									
Barley									
Cereal whole plant									
Fodder beets									
Grass/arable grass									
Maize								<0.5	<0.5
Palm oil				992	323		83		
Rapeseed				<0.5	<0.5	<0.5		165	168
Rye									
Silage maize									
Soy								<0.5	<0.5
Sunflowers									
Triticale									
Wheat									
Sugar cane									
Sugar beet									
Total	17	23	13	1,385	1,087	1,222	84	168	169

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding
[2] The conversion into tonnage was made on the basis of the quantities stated in the certificates

Europe			Central America			North America			South America			
2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	Quota year
												Feedstock
22,271	30,175	31,591	28	26	18	777	1,239	1-944	924	1,605	2,720	Waste/Residual
						1	6		50	141	111	Eth. mustard
977	655	827										Barley
45	21	10										Cereal wh. plant
1												Fodder beets
14	4	3										(arable) Grass
15,200	15,772	14,536				54	53	146	76	782	917	Maize
			2,571	550					87	123		Palm oil
17,255	15,905	15,638				1,604	182	7	129	23	5	Rapeseed
4,103	1,001	342										Rye
												Silage maize
299	331	192					4		4,313	8,343	1,763	Soy
629	1,284	1,002				<0.5						Sunflowers
1,401	2,532	1,724										Triticale
3,890	4,456	7,066										Wheat
			539	1,641	1,051				2,428	2,491	3,748	Sugar cane
908	423	669										Sugar beet
66,992	**72,559**	**73,599**	**3,138**	**2,217**	**1,069**	**2,436**	**1,483**	**2,098**	**8,007**	**13,508**	**9,264**	**Total**

Europe			Central America			North America			South America			
2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	Quota year
												Feedstock
590	775	719	1	1	<0.5	20	44	59	25	46	78	Waste/Residual
						<0.5	<0.5		1	4	3	Eth. mustard
37	25	31										Barley
1	<0.5	0										Cereal wh. plant
<0.5												Fodder beets
<0.5	<0.5	0										(arable) Grass
564	595	545				2	2	6	3	30	35	Maize
			69	15					2	3		Palm oil
462	426	418				43	5	<0.5	3	1	<0.5	Rapeseed
155	38	13										Rye
												Silage maize
8	9	5					<0.5		115	223	47	Soy
17	34	27				<0.5						Sunflowers
53	96	65										Triticale
147	168	267										Wheat
			20	62	40				92	94	142	Sugar cane
34	16	25										Sugar beet
2,067	**2,181**	**2,115**	**90**	**77**	**40**	**65**	**51**	**65**	**242**	**400**	**305**	**Total**

Table 23: Germany: Total biofuel feedstocks[1]

	[TJ]			[kt]		
	2021	2022	2023	2021	2022	2023
Feedstock						
Waste/Residual	40,102	64,516	84,212	1,047	1,655	2,091
Ethiopian mustard	51	147	111	2	4	3
Barley	977	655	827	37	25	31
Cereal whole plant	45	21	10	1	<0.5	<0.5
Fodder beets	1			<0.5		
Grass/arable grass	14	4	3	<0.5	<0.5	<0.5
Maize	15,331	16,608	15,634	568	626	586
Palm oil	41,594	13,340		1,063	341	
Rapeseed	22,113	22,293	21,939	592	597	587
Rye	4,103	1,001	342	155	38	13
Silage maize						
Soy	4,612	8,679	1,955	123	232	52
Sunflowers	629	1,284	1,002	17	34	27
Triticale	1,401	2,532	1,724	53	96	65
Wheat	3,890	4,456	7,066	147	168	267
Sugar cane	2,967	4,131	4,799	112	156	181
Sugar beet	908	423	669	34	16	25
Total	**138,737**	**140,090**	**140,294**	**3,950**	**3,988**	**3,929**

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding

Table 24: Biofuels whose feedstock originates from Germany [TJ] [1]

Biofuel type	Bioethanol			Bio-LNG		Biomethan		
Quota year	2021	2022	2023	2022	2023	2021	2022	2023
Feedstock								
Waste/Residual	305	31	79	16	228	2,484	4,249	4,304
Barley	856	568	766					
Cereal whole plant						44	21	10
Fodder beet						1		
Grass/arable grass							2	
Maize	119	216	49			610	82	111
Rapeseed								
Rye	1,348	488	52			26		2
Silage maize/whole plant								
Sunflowers								
Triticale	237	441	304					
Wheat	449	723	1,181					
Sugar beet	771	419	638			32	<0.5	3
Total	**4,086**	**2,886**	**3,068**	**16**	**288**	**3,196**	**4,354**	**4,430**

Source: BLE (report online at *www.ufop.de/ble*)
[*] Differences in totals are due to rounding

Table 25: Germany: Emissions and emission savings of biofuels[1]

	Emissions [t CO_{2eq} / TJ]			Savings [%][2]		
	2021	2022	2023	2021	2022	2023
Biofuel type						
Bioethanol			22.69			75.68
Bio-LNG	9.18	9.39	8.68	90.21	89.94	90.69
Biomethan	6.79	–7.33	–73.10	92.78	107.79	177.69
Biomethanol	5.86	–25.47	–62.43	93.77	127.07	166.34
Btl-FTD	33.50	33.48	26.44	64.09	64.12	71.66
FAME	20.07	19.14	14.28	78.49	79.49	84.69
HVO	16.86	14.93	14.36	82.33	84.31	84.90
CP-HVO	16.02	12.24	12.21	83.15	87.13	87.16
Vegetable oil	31.73	33.06	30.05	66.70	65.24	68.40
Weighted average of all biofuels	**14.77**	**11.98**	**9.30**	**84.45**	**87.35**	**90.18**

Source: BLE (report online at *www.ufop.de/ble*)
[1] Differences in totals are due to rounding
[2] Savings compared to fossil fuel benchmark 94.1 g CO_{2eq}/MJ

Biodiesel (FAME)			HVO		Plant oil			Total			Biofuel type
2021	2022	2023	2022	2023	2021	2022	2023	2021	2022	2023	Quota year
											Feedstock
7,683	8,711	7,286	11	22				10,531	13,017	11,980	Waste/Residual
								856	568	766	Barley
								44	21	10	Cereal whole plant
								1			Fodder beet
									2		(arable) Grass
								729	298	160	Maize
9,380	5,036	5,920		3	30	28	9	9,409	5,065	5,932	Rapeseed
								1,374	488	54	Rye
											Silage maize/whole plant
2	8	46						2	8	46	Sunflowers
								237	441	304	Triticale
								449	723	1,181	Wheat
								803	419	641	Sugar beet
17,065	**13,755**	**13,253**	**11**	**25**	**30**	**28**	**9**	**24,435**	**21,050**	**21,074**	**Total**

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