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

Biodiesel 2014/2015

Report on the current situation and prospects – extract from the UFOP annual report

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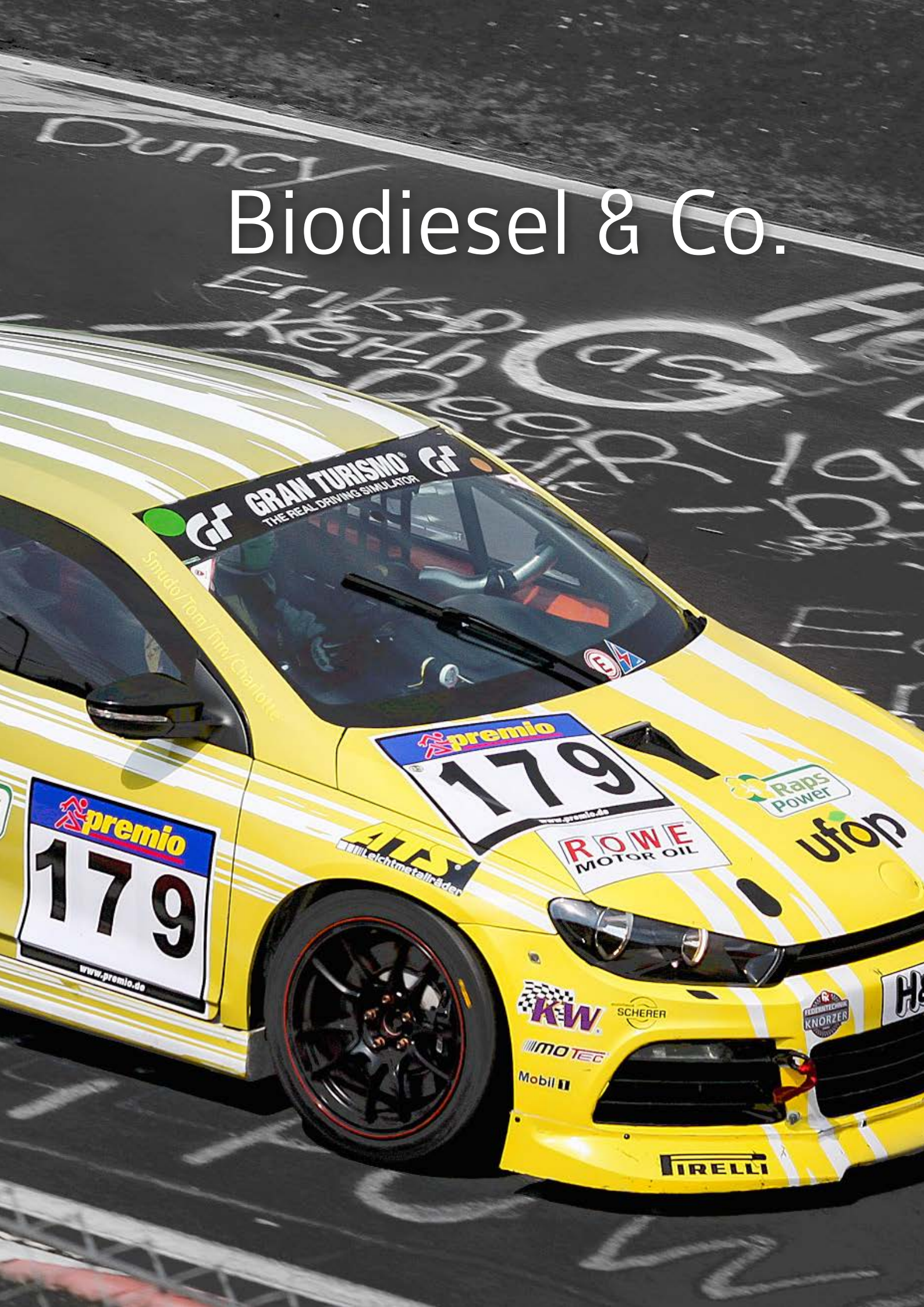


During the reporting period, the price of crude oil was decisive in determining the sales prospects for biodiesel, not only in the European Union but throughout the world. The price of crude oil fell from its highest level in June 2014 of around $117 per barrel (Brent) (1 barrel = 159 litres) to $72 at the end of November and after the turn of the year to under $50 at times. This development is becoming increasingly critical for producing countries in particular, which have had to essentially finance their national budgets with their crude oil exports. The Arab oil exporting countries are able to compensate for this decline in price by reducing their foreign exchange reserves. In contrast, the decline in the price of crude oil is just one of several issues that Russia is facing.

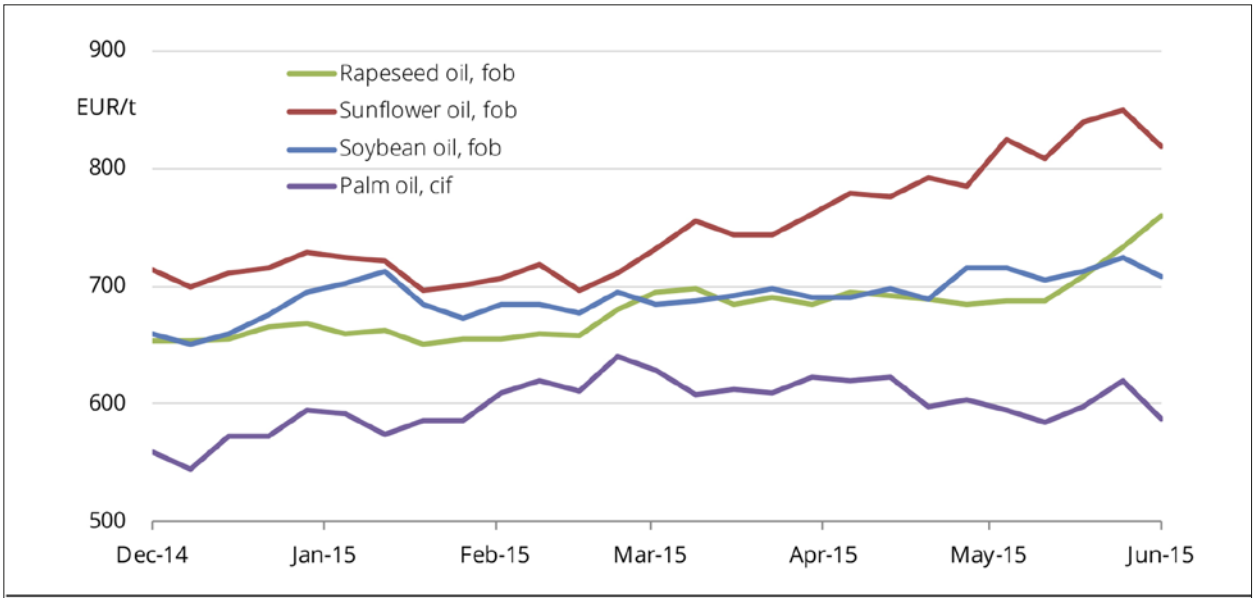
Industry and society are also affected by the European sanctions imposed over the Ukraine conflict. Fracking has resulted in a significant increase in the amount of crude oil in the US, driving down prices. The depots are full, and the excess volumes have to be sold on a world market with little interest in taking up the slack, particularly in light of comparatively warm winter we've been experiencing. The Arab states are striving towards market domination as fracking is no longer economically feasible if crude oil prices remain low. Consequently, global crude oil production in June 2015 fell to 96 million barrels per day, down 155,000 barrels compared with May. But due to the still increasing overshoot, nevertheless the price fell further finally down to 30 $ per barrel.

Those benefiting from this trend of falling oil prices are oil importers such as the European Union. The savings in expenditure for both public and private budgets is acting as a driving force for economic growth. Unemployment in Germany has stabilised at an historically low level of fewer than three million.
At the same time, increased consumption contributed to a rise in tax revenues for the federal government and states at an unforeseen level.
The strong growth in the economy can be seen in the renewed rise in transport volume and the corresponding increase in diesel consumption. Diesel sales thus rose to an historical peak level of 36.4 million tonnes in 2014 (previous year: 34.80 million tonnes). Diesel sales of approximately 35.2 million tonnes are expected in 2015. This situation has been overshadowed by the Greek crisis and the associated uncertainty in the financial markets, however.

Vegetable oil and biodiesel in an international context

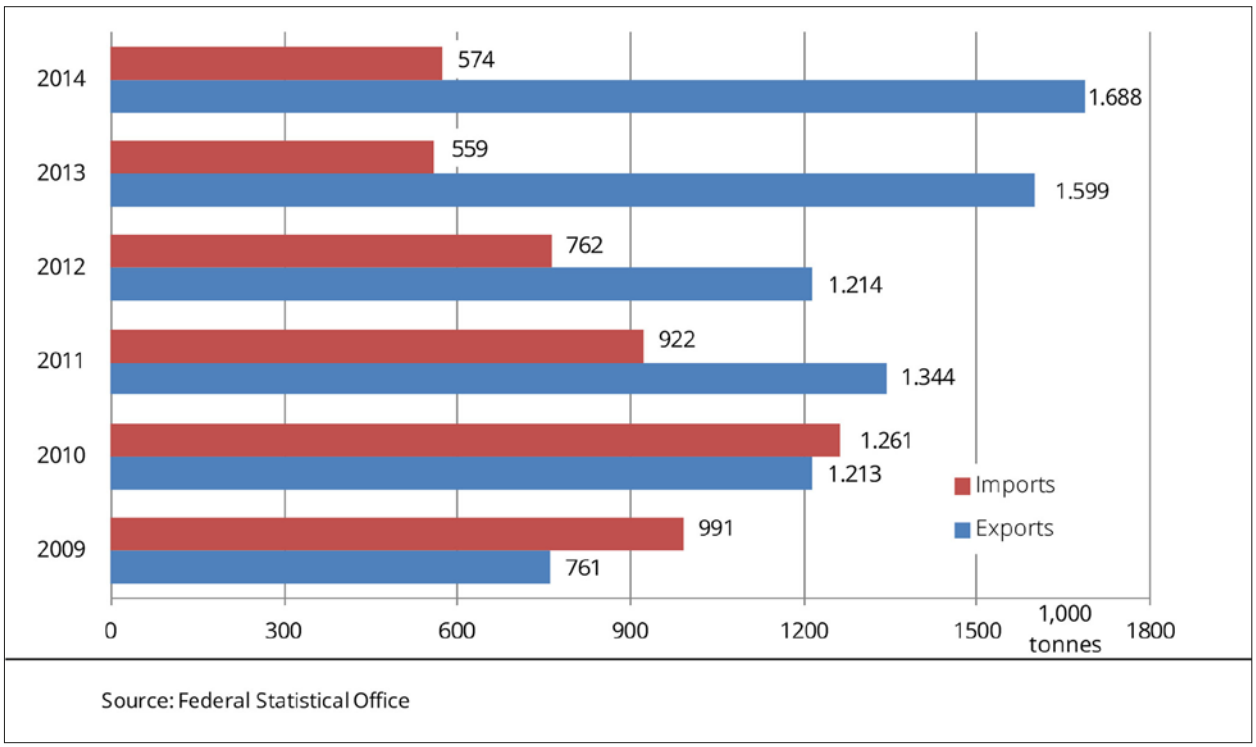
Structural surpluses, albeit at a much lower level compared to the mineral oil markets, exerted a downward pressure on prices for plant-based oils. Since March 2015 there have been signs of improvement with the price gap widening in favour of rapeseed and sunflower oil (Chart 1). The overestimated availability of rapeseeds and sunflowers did not allow for a continuous supply of raw materials to the oil mills until the new harvest. Questions were therefore raised in industry circles about the actual size of the harvest in 2014.

Chart 1: Price development for wholesale vegetable oil prices



Source: AMI

Chart 2: Biodiesel exports 2009 – 2014



Source: Federal Statistical Office

The decline in sales of conventional biodiesel made from vegetable oil clearly reflects the lack of a national or European biofuel strategy. The overall revenue, including the additional competing hydrogenated vegetable oil (HVO) that has been around for some years now, has stagnated. The following factors determine competitiveness in the domestic and export markets and therefore in the EU biodiesel market:

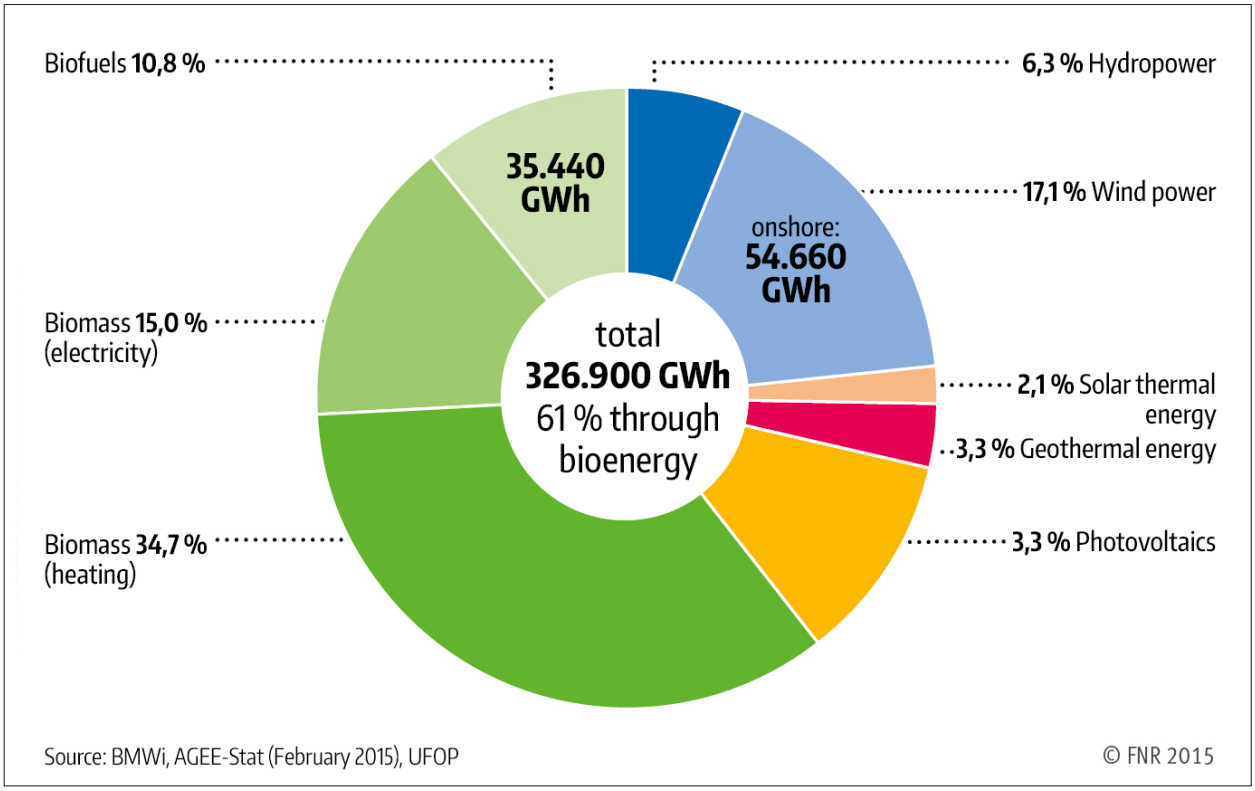
- the price of sustainably certified vegetable oils and waste oils/fats; their interchangeability, however, is limited depending on the season (demand period for winter biodiesel: from the middle of October until the end of February) – advantage rapeseed oil (RME);
- integrated and non-integrated biodiesel production plants – synergy effects by combining oil mills and biodiesel plants;
- Time of investment / commissioning: depreciated plants;
- Creation of value through the commercialisation of pharmaceutical glycerine and other by-products.

The German biodiesel plants produced over three million tonnes in 2014. With just under 1.6 million tonnes, the export volume exceeded the quantity used domestically for the first time (Chart 2). Although these statistics highlight the strong competitive position of the German biodiesel industry in a European context, it must nevertheless be borne in mind that this sector, as measured by the historical biodiesel capacity of over five million tonnes, has undergone a process of consolidation.
First industrial plant in Germany, in Leer, was shut down in the spring of 2015. This process has also changed the structure of supply at the EU level and is particularly pronounced in some countries. In Spain, for example, starting from a total capacity of more than five million tonnes, the production of a capacity of more than four million tonnes was completely or temporarily discontinued. The disproportion of existing production capacity (2014: 23.1 million tonnes) and actual production (2013: 10.4 million tonnes – Source: http://www.ebb-eu.org/stats.php#) has shaped the European biodiesel sector for years. The cutthroat competition associated with this will continue or worsen as a result of the new plants for HVO production. Just like the Italian mineral oil company ENI before it (0.3 million tonnes of HVO), the company Total in La Mède (near Marseilles) is converting an existing crude oil refinery into an HVO plant with an annual capacity of 0.5 million tonnes. In addition to the Finnish manufacturer Neste and ENI, another HVO provider will increase the total capacity in the EU to around two million tonnes in 2016. In light of the unexploited transesterification capacity of around 13 million tonnes in the EU, it is therefore appropriate to demand that these plants be integrated into the EU's bio-refinery strategy.

Biofuels / bioenergy supply mix

It is a sign of the success of the previous funding policy that, besides natural gas and wind power, biomass / biogas and solar thermal power have stood out noticeably in the electricity and heating market (Chart 3). In connection with the further accelerated expansion of wind energy and the simultaneous demolition of the coal and lignite power plants operating as a base load, the question arises as to the storage of temporarily fluctuating and increasing energy surplus quantities.
The network expansion is not keeping pace with the construction of wind power plants. Regional surpluses will therefore be

Chart 3: Bioenergy in the renewable energy mix



inevitable for the time being. As part of the discussions initiated in 2014/15 on the action and optimisation options to achieve the climate protection goals in 2020 and 2050, the extensive natural gas network being developed in Germany with a storage capacity of 24 billion cbm is deemed to be a particular benefit. The discussions concerning the promotion of power-to-gas technology have gained considerable momentum given the background presented here. As co-organiser of the 12th international conference 'Fuels of the future 2015' that traditionally takes place at the IGW in Berlin in January, UFOP has taken this topic into account. The expectations regarding this technology are also very high from a political point of view. As a result of the conference it was ascertained that substantial progress (efficiency improvement, cost reduction) is still necessary before this technology is also able to make a significant contribution to mobility in the long term. In discussions with policymakers and the relevant federal ministries (BMEL, BMVI and BMUB), UFOP repeatedly urged those present to adequately classify the actual contribution that each renewable energy source must make to the total energy provision. The discussions surrounding the transition to alternative energy focus primarily on electricity in this part of the world. The issue of e-mobility and the demands of the automotive industry to create buying incentives with regulatory preferences in city centre traffic and special tax depreciations are also 'incorporated' therein. E-mobility is virtually non-existent when measured against the total amount of car traffic. The federal government's targeted number of one million electric cars by 2020 is wishful thinking. Plug-in hybrid technology seeks to resolve the conflict between operating range and demand for comfort. It is therefore more of a slow introduction than a transition per se. This also means new qualitative changes for biodiesel. Due to the orientation towards electrical operation as far as possible, the useful life for biodiesel in diesel fuel (B7) in the vehicle's tank needs to be extended. The responsible UFOP expert commission for biofuels and renewable raw materials have dealt with this question.

Chart 3 illustrates the present-day significance of biomass in the energy mix of renewable energies. The comparison of the energy performance of biofuels with wind power (on-shore) highlights that traffic can only be decarbonised in the long term by combining the best-possible optimised and networked individual solutions.

The current situation regarding fuel supply is characterised by an increasing dependence on diesel fuel in the EU. In consequence, the structural problem is exacerbated in mineral oil processing (petrol surplus / diesel imports). About 104 million tonnes of gasoline were consumed throughout the EU in 2007 compared to just under 81 million tonnes in 2014 (Germany: 21.3 or 18.4 million tonnes). By contrast, diesel consumption fluctuated between 204 and 210 million tonnes during this period (Germany: 29.1/34.8 million tonnes). Biodiesel sales as blended components undoubtedly benefit from this sales trend on the basis of statutory biofuel blending targets.

Table 1: European Union: Legislation of the member states concerning biodiesel

	Legislation Biofuels	Notes	Products on the market
Belgium	6% vol. for both biodiesel and ethanol		ETBE and ethanol blends up to 5% vol.; FAME blends
Bulgaria	-		Ethanol and FAME blends
Denmark	5.75% cal.	CO_2 tax	E5 and FAME blends
Germany	Rising GHG reduction target		ETBE, E5, E10; E85; FAME blends, small quantities of B100; PPO
Estonia			-
Finland	8% cal.	CO_2 tax	ETBE, E5, E10; HVO
France	7% cal.	Quota system; B-8 standard since 2015.	ETBE, E5, E10; B 8/30.
Greece	-	Quota system for FAME	Ethanol and FAME blends
Ireland	6% vol.		ETBE and ethanol blends up to 5% vol.; FAME blends
Italy	5% vol.	Registration requirement for FAME	ETBE; FAME blends; HVO
Latvia	5% vol. for both biodiesel and ethanol		Ethanol blends; FAME blends
Lithuania	5% vol. for both biodiesel and ethanol		E5/ETBE, FAME blends
Luxembourg	-		FAME blends
Malta	1.25% cal.		FAME blends, B100.
The Netherlands	5.50% cal. minimum blend requirements for both biodiesel and ethanol fuel of 3.50% cal.		ETBE, E5, E10; FAME blends up to 7% vol.
Austria	5.75% cal.	Tax exemption for pure biofuels; lower taxation for blends	E5; B7, B100; PPO
Poland	7.10% cal.	Restricted market access	ETBE and ethanol blends up to 5% vol.; E10 approved but not yet implemented; B7 approved but not yet implemented
Portugal	B7 (vol.)	Quota system.	B7, B100
Romania	minimum blend requirements for biodiesel and ethanol fuel of 5% vol. and 4.50% vol.		ETBE and ethanol blends up to 5% vol.; B5.
Sweden	-	CO_2 tax; only tax exemption for biofuel shares.	E5, E85, E95; FAME blends to 7% vol., B100; HVO.
Slovakia	5.75% cal.		ETBE; FAME blends
Slovenia	5% cal.	Tax exemption for biofuel shares.	Ethanol and FAME blends up to 5% vol.
Spain	4.10% cal.	Registration requirement for FAME	ETBE and ethanol blends up to 5% vol.; FAME blends up to 7% vol.; HVO
Czech Republic	5.75% cal. plus E4.1 (vol.); B6 (vol.)	Tax benefits for high admixtures (quoted)	ETBE and ethanol blends up to 5% vol.; B5 and B30/100
Hungary	4.4% vol. for both ethanol and biodiesel		B5; E5; E10 standard exists, but not yet implemented.
United Kingdom	4.75% vol.		Ethanol and FAME blends up to 5% vol. or 7% vol.
Cyprus	2.50% cal.		FAME blends

PPO = Pure vegetable oil as a transportation fuel. Source: F.O.Licht

The bioethanol industry has, in turn, been forced to contend with the sharp drop in gasoline consumption and the resulting demand. Rising diesel consumption in heavy goods vehicle traffic offset the savings achievements in the car fleet. Many experts agree that a noticeable contribution to climate and resource protection can only be achieved for heavy goods vehicle traffic in the short to medium term with sustainable biofuels, combined with technically optimised engines to further reduce fuel consumption. In view of the existing biodiesel overcapacity, the potential quantities that could be mobilised are comparatively large. It is not only against this background that the orientation of use (B30/B100) determines the projects discussed in the UFOP expert commission on biofuels and renewable raw materials or the targets promoted by UFOP.

This well-known fact is unfortunately not reflected in the national development strategies to promote sustainable mobility. In spite of the fact that all member states are obliged to demonstrate a renewable energy proportion of at least 10% of their final energy consumption by 2020, there is at present little indication in many member states' national implementation legislation that this goal will be reached. The national commitment targets for biofuel use or biofuel blending are illustrated in table 1. The paradoxical situation becomes particularly apparent when Spain is taken as an example. Even the country with the largest biodiesel production capacity of more than five million tonnes has lowered the quota obligation to 4.1%.

Biodiesel sales including HVO have stagnated to a level of around 9 –10 million tonnes in the EU for several years. The sales trend for biodiesel from vegetable oil is on the decline due to biodiesel from waste oils and fats and the ever-increasing HVO proportion. The possibility of double counting is particularly noticeable and also leads to companies in the biodiesel industry that are heavily dependent on raw materials to assess the prospects differently. At the same time it must be emphasised that the blending limit or 'cap' of seven volume percent biodiesel specified in the diesel fuel standard is not being fully utilised. In contrast, up to 26% HVO (+7% biodiesel) can be blended into diesel fuel. The limiting parameter is the 'density' that would be underrun at higher blending proportions. According to rough estimates by UFOP, the biodiesel sales volume would rise from the current 10.2 million tonnes to around 13 million tonnes if the seven percent limit was fully utilised.

How are non-member countries reacting?

Countries such as Brazil and Argentina, which produce a parallel structural soybean oil surplus due to the constantly increasing soybean whole grain demand, have intensified their sales efforts for biodiesel. Argentina has entered the US biodiesel market through endorsement or fulfilment of the relevant statutory requirements and has thus increased the price pressure on soybean oil in the US. Argentina has also increased the blending of biodiesel into diesel to 10%.

Table 2: EU production of biodiesel and HVO 2007 - 2014 in 1,000 tonnes

	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	145	277	416	350	472	291	500	600
Denmark	70	98	86	76	79	109	200	200
Germany	2.890	2.600	2.500	2.350	2.800	2.600	2.600	3.000
United Kingdom	427	282	196	154	177	246	250	350
France	954	1,763	2,089	1,996	1,700	1,900	1,800	1,850
Italy	470	668	798	799	591	287	459	400
The Netherlands	85	83	274	382	410	382	606	650
Austria	242	250	323	337	310	264	234	240
Poland	44	170	396	371	364	592	648	692
Portugal	181	169	255	318	359	299	294	310
Sweden	114	145	110	130	239	352	223	180
Slovenia	7	8	7	21	1	6	15	0
Slovakia	46	105	103	113	127	110	105	101
Spain	180	221	727	841	649	472	581	750
Czech Republic	82	75	155	198	210	173	182	219
EU other	.	.	.	.	**548**	**660**	**712**	**682**
EU-27	**6,129**	**7,321**	**8,888**	**8,981**	**9,036**	**8,743**	**9,409**	**10,224**
HVO[1]	.	.	.	.	**404**	**1,201**	**1,325**	**1,620**
Total	.	.	.	.	**9,440**	**9,944**	**10,734**	**11,844**

Source: F.O. Licht
[1]Estimate cumulated (Sp, Fin, Fr, It)

According to market participants, the pressure resulting from volume surpluses in 2014 was so intense that Argentina even exported biodiesel at the price of diesel at times. Brazil also reacted in a similar way. Here the government finally conceded to the sector's demand to increase the blending proportion to seven percent from November 2014, in spite of the fact that biodiesel did not have a good reputation in the transport sector due to repeated quality problems (breakdowns due to filter blockage). Diesel or biodiesel is mainly used in heavy goods vehicles in Brazil. Cars may only operated with petrol or with bioethanol blending (flex fuel vehicles) as prescribed by law. Countries such as Malaysia and Indonesia producing palm oil for the world market have increased the blending commitments to 10% or 15% in the reporting period. These measures are expected to take the pressure off the market. A similar (if not identical) reason was given by governments. In the meantime, the national blending policy has developed into a quantity regulation instrument to regulate the market in these countries. This policy runs contrary to the approvals issued by the vehicle manufacturer for B7, however. Against this background, the economic sectors concerned need to develop strategies concerning quality assurance and maintenance requirements in a forward-looking manner to avoid problems with the end customer.

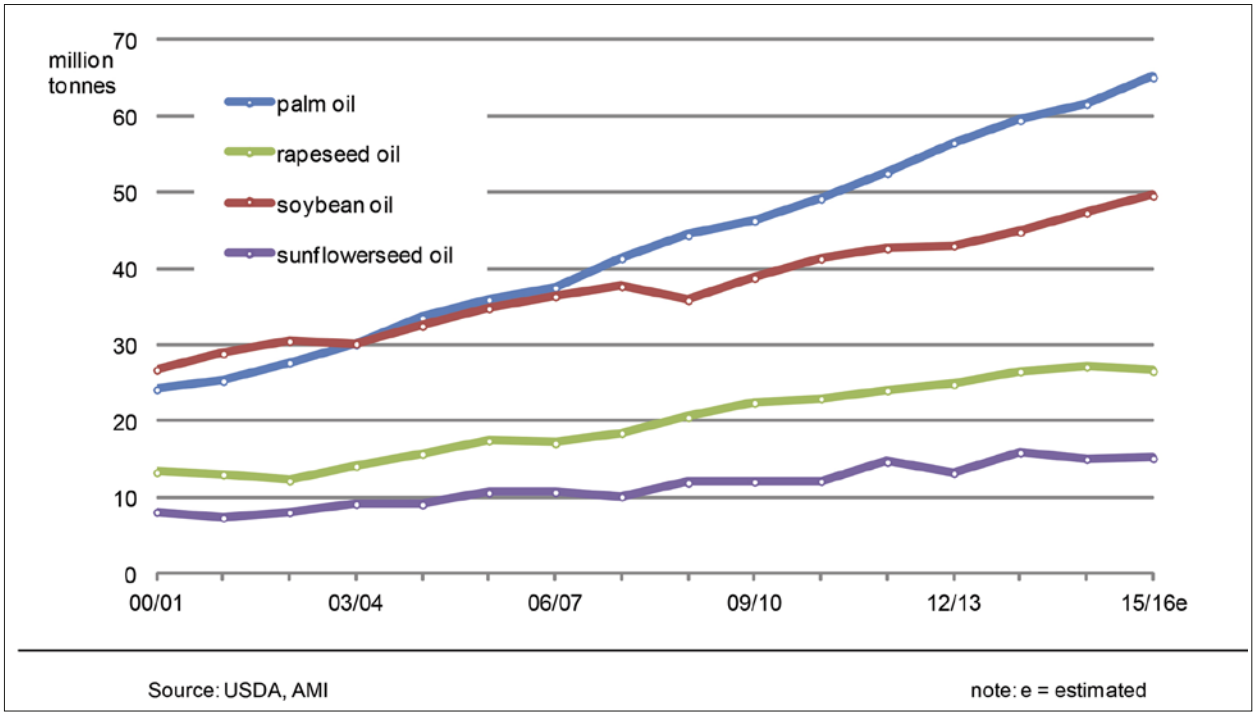
Despite rising blending targets, the vegetable oil supply will continue to grow due to technical progress, as well as land use changes in South America and Asia. The topic of sustainable raw material production and certification to avoid land use changes is therefore becoming a fundamental challenge, not only for biofuel production. Even companies in the value chain for the material use of vegetable oils (oleochemistry) and the food industry are affected or are developing company-specific sustainability strategies.

Rising palm oil production – declining image

The production of vegetable oils is increasing steadily from a global perspective. Palm and soybean oil determine the increase in quantity (Chart 4). In view of the saturated markets in countries outside the EU, the use of market surpluses for fuel use and the alignment of the vegetable oil prices with the crude oil price development is an inevitable, but flexibly modifiable relief measure. Not only manufacturers of biodiesel and HVO benefit from low vegetable oil prices. Palm oil or palm kernel oil and coconut oil are important raw materials for the food industry and for oleochemistry. NGOs continue to press ahead with the critical discussion concerning the consequences of rising palm oil production in this market environment even further. Biodiesel production and the EU biofuels policy have long been ousted from their position as the only important factors from their point of view. Media attention is drawn to the variety of products and areas of use that contain palm oil as a raw material. The negative consequences for people and the environment (deforestation) accompanying this have been denounced.

At the same time, there is criticism that although sustainability requirements based on certification systems approved by the EU commission have been introduced in these countries, the certified companies do not show the required commitment in each case to redress the grievances.

Chart 4: Production of plant-based oils



From the perspective of UFOP, the sustainability requirements prescribed by EU law can only achieve the desired result if one succeeds in actually preventing or at least reducing land use changes. UFOP has therefore reiterated the position to policymakers that the 19 certification systems approved by the EU commission must be inspected by means of witness audits with regard to the qualitative requirements of checklists and the implementation of certification by qualified certification bodies on site. While the BLE for Germany may submit information concerning these audits, not all competent authorities in the member states are in a position to do so. The re-admission of certification systems performed in five year intervals as expressed in the Renewable Energy Directive must be based on an appropriate audit. Different requirements in the checklists and documentation also lead to cost-effective competitive disadvantages. UFOP has therefore welcomed the best practice examples that should serve as a measure of quality as a result of the Directive's amendment. The reputation and thus the political and public recognition depend on this so as to finally be able to justify the retention of conventional biofuels as an element for a sustainable fuel strategy after 2020. Against this background, UFOP emphasises that sustainability certification must be developed regardless of the final use and in mutual agreement with the agriculture sector.

After all, the debate over the introduction of sustainability certification systems originating from various business communities and stakeholders has never been more intense. However, divergent ideas concerning criteria and documentation requirements often shape the debate. UFOP fears the development of less coordinated self-reinforcing tendencies because companies either want to or must jump on the sustainability bandwagon. It must, however, be borne in mind that the starting point is always the area under cultivation. In this sense, the topic of land use changes will therefore remain on the agenda.

Market development of biodiesel in Germany

With a total of 2.4 million tonnes of biodiesel (including HVO and biodiesel from waste oils), higher sales of +0.1 million tonnes were recorded in 2014 compared to 2013 (Chart 5). While the use of biodiesel as pure fuel decreased from just under 30,000 tonnes to only 5,000 tonnes, the use of vegetable oil fuel rose from 1,200 to 5,500 tonnes. With 1.4 million tonnes in 2014 certified rapeseed oil continues being the most important raw material source for the share of biodiesel in diesel fuel (B7). This is verified by the evaluation and progress report for the quota year 2014 published by the BLE in December 2015. In consideration of imported hydrogenated vegetable oil (HVO) from palm oil (0.336 million tonnes), a total of approx. 2.4 million tonnes of biofuels were admixed to the diesel fuel in 2014. In contrast, palm oil or soya oil hardly play any part at all in the biodiesel economy in Germany. Compared with 2013 (0,44 million tonnes) the use of HVO had been seriously reduced. The demand of rapeseed oil rose to 238,000 tonnes compared with 2013 (1.16 million tonnes). On the contrary, a clear growth can be observed using waste oils for biodiesel production. This increased from 420,000 tonnes in 2013 to 517,000 tonnes in 2014. The total increased demand of biodiesel and HVO compared with 2013 was caused by the increased diesel fuel sales. Taking into account the amount of exported biodiesel, Germany leads the European production

Chart 5: Biodiesel and HVO 2014 | Raw material and turnover (in million t)

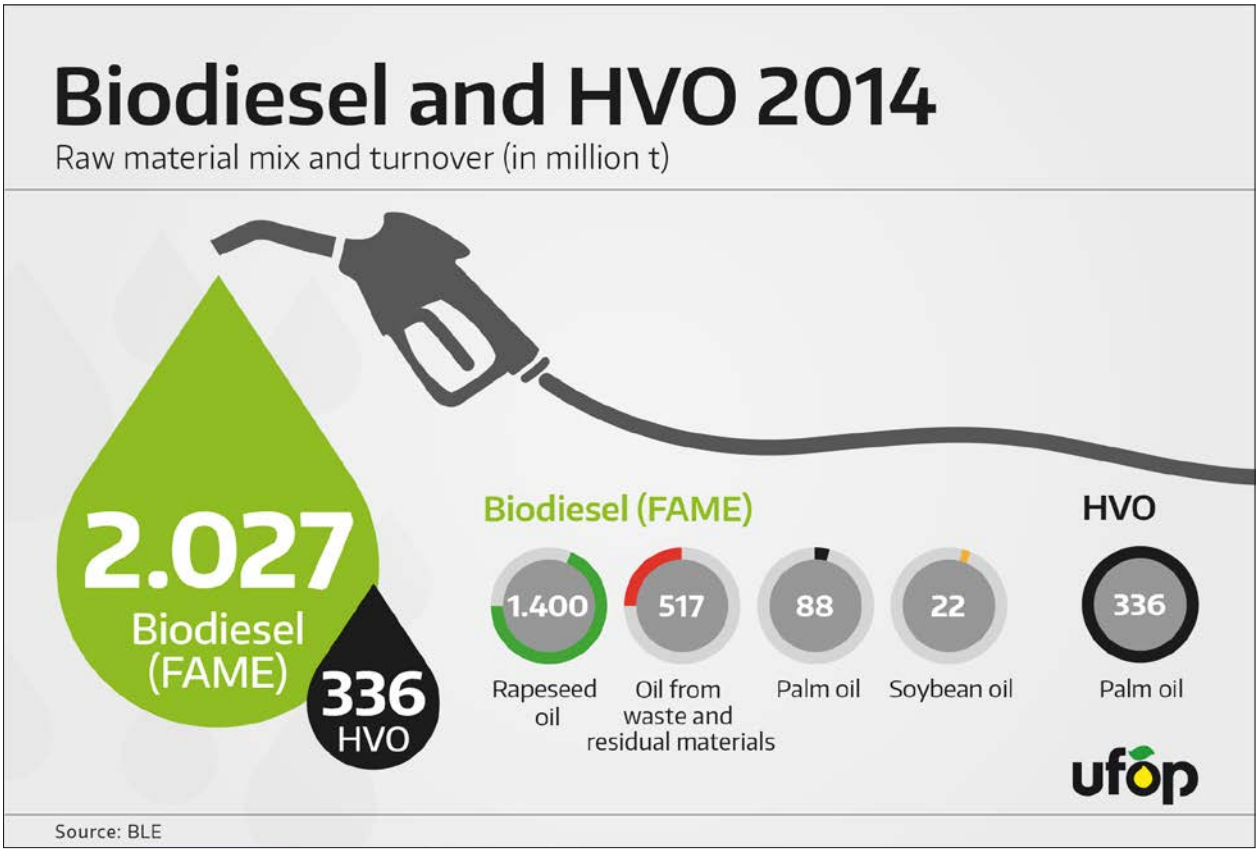
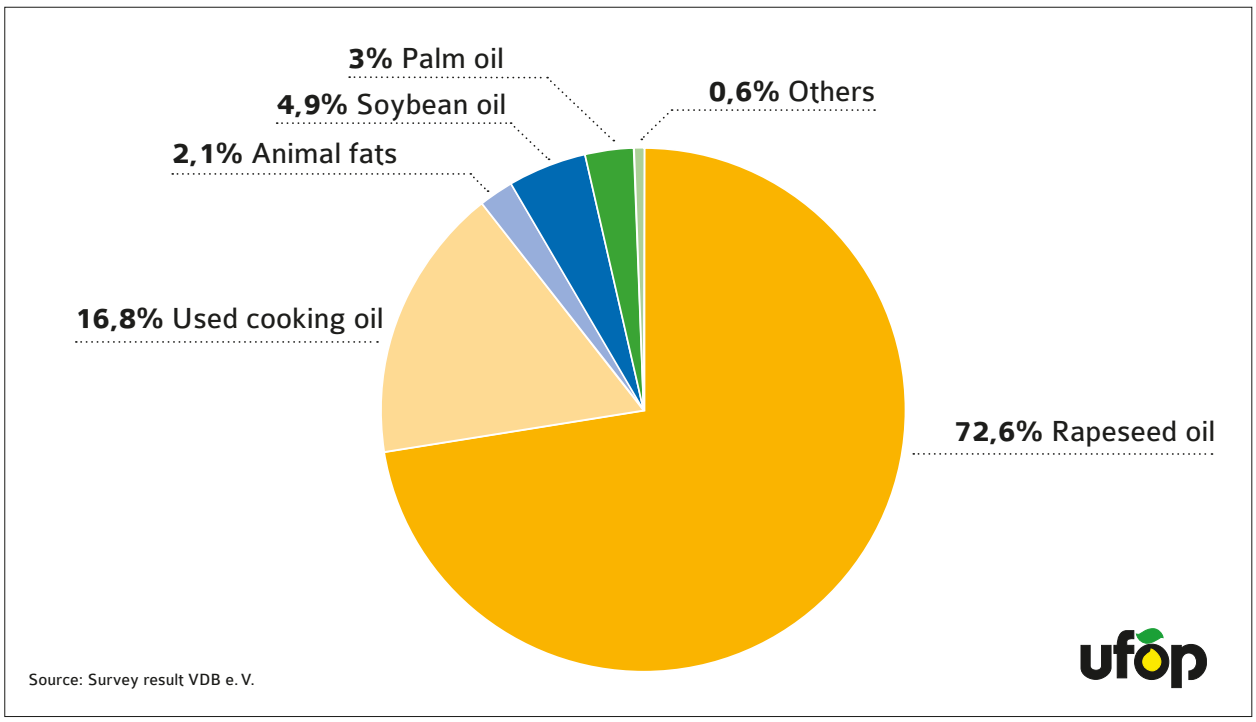


Chart 6: Composition of raw materials in biodiesel 2014



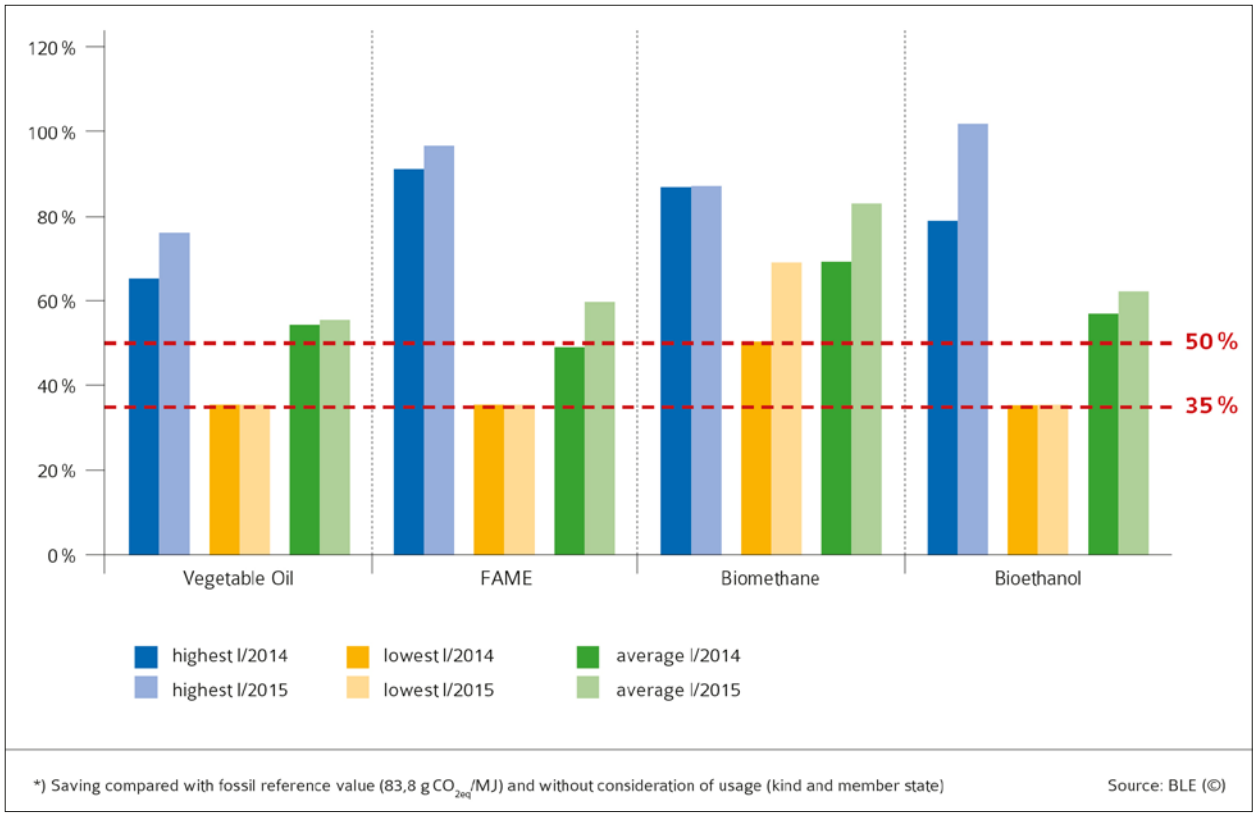
statistics with a total of approximately three million tonnes.

According to the Association of German Biofuel Industry (VDB), the proportion of rapeseed oil for the production of vegetable oil methyl ester amounts to around 73% (Chart 6). The German and European biodiesel market thus remain by far the most important market for both German rapeseed producers and oil mills. This clearly shows the price-stabilising effect from the use of rapeseed oil for biodiesel production. Although a record harvest of just under 6.2 million tonnes of rapeseed could be reaped in 2014, the corresponding amount of rapeseed oil of around 2.4 million tonnes went into biodiesel production in terms of figures. The main export recipients were again the EU countries, led by the Netherlands with 0.6 million tonnes, equivalent to about 35% of the total EU trade, followed by France with 0.22 million tonnes and Poland with 0.14 million tonnes. For 2015, UFOP expects domestic sales at around the same level. In contrast, a slight decline in exports has already become apparent in the first half of the year.

National biofuel policy – obligation to reduce greenhouse gas (GHG) emissions

The funding policy framework as a result of the implementation of the revised Federal Immission Control Act (Bundes-Immissionsschutzgesetz, BImSchG) was explained in the UFOP report 2013/14. The described effects on competition in terms of biofuel raw materials have materialised. The BLE evaluation of the sustainability certificates entered in the Nabisy database for the 1st quarter of 2015 confirms this. Chart 7 shows the GHG values broken down by the respective biofuel types. On average, biofuels not only exceed the currently applicable requirement of 35% to minimise GHG emissions, but also the already more stringent requirement of 50% valid from 2017. According to some market participants, the GHG reduction value is based on a minimum value of around 60% for tender submission in the market. The BLE evaluation even confirms a value to minimise GHG emissions by 100% for individual cases. Naturally, the question arises: How is this possible? At all stages of processing, all options were and are inspected first and foremost to improve the greenhouse gas balance by optimising/reducing the energy consumption, changing the energy sources, increasing efficiency during the processing of raw materials as well as in biodiesel or bioethanol production. In order to achieve and demonstrate a very high GHG reduction target, it is possible to collect the CO_2produced during the fermentation process during bioethanol production and to process this in such a way so that it can then be used as carbon dioxide in the beverage industry. A sales document submitted to the certification body as proof should suffice. By contrast, the usage path of CO_2 to gas greenhouses has sparked a very critical debate in the biofuel industry. It seemed obvious to state that the CO_2 introduced into the greenhouses was taken up by plants through assimilation and thus stored. Finally, it was clear that it must be demonstrated that an analogous amount of CO_2 of fossil origin was replaced with this CO_2. Thus it becomes evident that CO_2 from the biofuel production replaces 'CO_2 waste gases' originating from heating / gassing with natural gas or heating oil. The exclusive gassing with CO_2 to accelerate plant growth plays, at least in Germany, virtually no role in glasshouse cultivation, however. Site proximity would also need to be satisfied in order to describe the use in economic terms.

Chart 7: GHG savings for biofuels



The position of UFOP is clear: This needs to be carefully examined to avoid 'misuse'. This has now become an important issue because offsets that have already taken place can no longer be undone in case of fraud. The mineral oil company subject to this requirement enjoys legal protection in any event.

It is currently not discernible in the market if a surcharge is granted for biofuels from a certain GHG reduction value. The result of the biofuel industry's GHG reduction is that the higher the GHG reduction performance, the less biofuel is required. In light of intense discussions with the federal government to adjust the GHG reduction target for 2015 and 2016, it is necessary to evaluate whether this efficiency gain justifies an increase in the GHG reduction target. From the perspective of UFOP, the important question is whether and to what extent 'shifting effects' arise in the raw material basis for biodiesel production. Rapeseed oil comes off worse in terms of the GHG balance compared to soybean and palm oil. This subject was studied in a project funded by UFOP. It must be stated that, in principle, the competition for the best GHG reduction and raw material efficiency that has been entered into is a unique selling point of the biofuel market that must be regarded positively on the open market. In this respect, consideration must be given as to whether the GHG reduction target should be introduced throughout the EU.

EU biofuels policy – resolutions passed iLUC Directive

After the EU Commission presented a proposal to amend the Renewable Energies and the Fuel Quality Directive (2009/28/ EC and 98/70/EC) in October 2012, an intensive consultation process commenced between the EU Commission, EU Council and the European Parliament. After lengthy preliminary wrangling and controversial discussions, the Parliament finally agreed on 28 April 2015 to the compromise essentially put forth by the Council of Ministers.

Overview of the resolutions passed – validity period until 2020:

- Cap for first-generation biofuels from cultivated biomass: 7% energetic;
- no offsetting of indirect land use changes (iLUC), instead reporting and scientific review;
- voluntary special quota for 'advanced biofuels': 0.5% energetic;
- The offset for e-mobility remains unchanged: 2.5x rail, 5x road.

At first glance the decision from the perspective of UFOP should be assessed as positive and generally means that the previous sales potential for biodiesel and thus also for rapeseed oil as a raw material basis will remain unchanged – until 2020.

Considered in detail, it can however clearly be seen that compromises were required in the Council of Ministers, as France, Poland and Germany had demanded 7%, for example, while the Netherlands, Denmark and Great Britain demanded a cap of 5% and therefore supported the EU Commission's proposal. The agreement on 7% could therefore only be achieved because the parties had agreed as a compromise to the authorisation that national lower quota targets can be defined. The fact that this is now common practice has already been explained above (Table 1). As a result, all participants involved are included in the compromise text in view of the original positioning (KOM: 5%, EP: 6%). This also puts into concrete terms that all fuel use and cultivation biomass options shall fall under the cap in the future. For Germany this means that the development prospect of creating bio-methane from corn for fuel use could possibly be affected by this measure.

iLUC – reporting only

The reporting remains in place, as proposed by the EU Commission and endorsed by the Council. The iLUC factors proposed by the Commission serve as a basis for reporting: Grains: 12, sugar: 13, oil plants: 55g CO_2/MJ. At the instigation of the member states, mineral oil industry companies which are obliged to satisfy the quotas are required to report to the competent bodies and then to the member states as final rapporteur to the Commission. The call for a special quota of 10% for bioethanol was not met with a favourable response. This would have meant the introduction of E10 throughout the EU. Obviously decisive for the non-consideration was probably the negative experiences with E10-marketing in several member states.

The introduction of iLUC reporting was foreseeable and could not be prevented in view of the public pressure from environmental organisations. The need for further research was recognised by all EU institutions. Thus the Commission promotes a project with the short title GLOBIOM; BMEL and BMWi supported the project GoViLa from the technical university in Darmstadt. ILUC remains on the political agenda due to the reporting obligation. From the perspective of UFOP, considerations must be evaluated critically, iLUC factors within the European standardisation process for sustainable biomass must to be considered or firmly fixed in checklists in certification systems. The initiators have to bear in mind that these also need to be valid for legal purposes in case of any dispute. UFOP has repeatedly affirmed that the iLUC hypothesis applies not only to biofuels, but also to all extensification measures provided with state incentives (greening, promotion of organic farming, etc.). These measures ultimately lead to a reduction in market supply, and consequently to indirect land use effects to ensure the existing market supply.

Advanced biofuels – a lot of research for a comparatively small amount

With the establishment of a non-binding target of 0.5%, the EU Parliament and the Council have appropriately classified advanced biofuels. The market share remains low both for now and in the future. In contrast, the need for research remains vital. With this formula, the European Commission is called upon to intensify research. The previously completed projects are virtually meaningless for market supply with no investors in sight. Biofuel production from synthesis gas and pyrolysis oil, or even the hyped power to gas must still furnish proof for its raw material, energy, greenhouse gas and most notably cost efficiency, in particular for large-scale technological applications. Policymakers must be careful not to try to promote too many technologies at once. Even the 'Algal group' is still waiting here in line. Policymakers are already treating this and occasionally e-mobility as the short-term problem-solver. One thing is certain: 'Advanced biofuels' do not have a better GHG balance than conventional biofuels per se – and this at investment costs that exceed those for existing technologies (biodiesel / bioethanol) many times over. The Federal Agency for Renewable Ressources (FNR) has already held an insightful meeting 'New biofuels in 2015' on this topic.

What is going to happen next?

Special attention must continue to be given to the inspection orders to the European Commission contained in Article 3 of the iLUC Directive. Under review are subjects in connection with iLUC, such as, for example, how the yield progress should be handled and if the substitution value (feed value) should be considered in the calculation of the GHG balance instead of the by-product's calorific value (rapeseed meal). Despite the fact that UFOP sees its demands as being considered here, it also sees a need for action to continue to accompany this process by providing support from specialists. This applies, in particular, to the proper calculation of the GHG balance for cultivation raw materials to use as biofuels while taking crop rotation into account. Rapeseed is still considered to be an annual culture in the GHG calculation's methodology. It has to hold its own in GHG competition with palm oil from perennial plantation crops. UFOP and FNR therefore support projects for drawing up the GHG balance in rapeseed crop rotations. The goal of this undertaking i.a. is to adjust the method of calculation to the system limits of rapeseed crop rotation systems (considering the preceding crop). The results will be incorporated into further deliberations with the EU Commission. A change in the currently applicable GHG default values or the calculation method is only possible, from a legal perspective, if the Commission presents a proposal which is agreed on by the Council and European Parliament in the usual manner. An expedited procedure by way of delegated acts is possible when defining default values for new biofuel or biomass sources. UFOP will keep these mainly short-term important aspects in mind.

Another result of the compromise is the order of the EU Commission, following on from the decision by the federal government in October 2014, to submit a proposal to continue promoting sustainable biofuels after 2020 based on a technology-neutral approach by 2017 at the very latest. The reference to the condition that the future strategy should be associated with the lowest possible iLUC risk, stresses that the policy has mainly set its sights on promoting advanced biofuels on the basis of residual materials. Frameworks shall be created for this to boost investment growth. The biomass needed for these technologies is, however, subject to the introduction of sustainability criteria. Against this background and given the fact that the proportion of sustainably certified biofuels achieved in 2020 cannot be replaced overnight, UFOP requests that the strategy development also adopt a candid approach towards raw materials after 2020. Specifically, this means the creation of a grandfather clause (protection of established rights) in the form of a iLUC-free basic quantity corresponding to the cap of 7% for first-generation biofuels. It should by now be clear to policymakers that first-generation biofuels are the foundation and an almost indispensable basis of experience for further strategic development.

The prospects for first-generation biofuels will therefore depend on whether one succeeds in convincing policymakers, so that the promotion of sustainable biofuels in the form of a technology and candid approach to raw materials is rendered possible after 2020. This means, however, that the biofuel industry will need to steadily improve the sustainability certification both now and in the future with regard to its pioneering role whilst at the same time accelerating the accompanying public relations activities. The amending directive includes inspection orders for this purpose (promoting best practices). The pioneering role of biofuels in the field of sustainability certification is not, as of yet, sufficiently appreciated by the EU Commission and policymakers. Development approaches are not pursued, particularly as the principle applies: The sustainability certification always begins with the area under cultivation with the purpose of the end use not (always) being clear.

BMELV funding programme for renewable raw materials relaunched

The BMELV has relaunched or restructured the funding programme for renewable raw materials (FPNR) and the respective funding areas with a view to the federal government's bio-economic strategy. FPNR is endowed with € 59 million each year.

This programme running until spring 2020 includes ten funding priorities, i.a.:

- the sustainable production and supply of renewable resources;
- the raw and waste material preparation and processing of bio-based products and bioenergy sources;
- the development of sustainability strategies;
- the strengthening of international cooperation and
- the improvement of the overall social dialogue and acceptance to promote a sustainable bio-economy.

An important focus from the perspective of UFOP and funded with the support of the federal research ministry includes the improvement of the yield and quality characteristics of raw materials from agricultural production by growing seeds. The invitation to tender has been issued and is limited in time until 22 October 2015.

FPNR is supplemented by the funding priorities of the Energy Climate Foundation (ECF) of the federal government (financial allocation: € 24 million/year). The funding of the development of technologies and systems to generate energy and the improvement of the GHG balance with electricity, heat and biofuels is planned as part of ECF.

A further focus is dedicated to optimising the integration of bioenergy in regional and national energy (infrastructure) systems. The central questions are in the field of warmth, electricity and mobility to improve system stability and energy efficiency. In addition to storage technologies, the development of decentralised energy systems to recover energy from agricultural and forestry biomass in combination with other renewable energy sources are also considered. The funding priorities of ECF with regard to market prospects for biofuels or bioenergy in general are particularly innovative.

UFOP welcomes the reorientation and the introduction of the funding priority 'Dialogue with society'. The available funds do not meet the requirements and goals associated with these programmes to make a substantial contribution to climate and resource protection as close in time as possible, however. Discussions surrounding food or fuel, indirect land use changes and the lack of public knowledge about the importance of renewable raw materials as a contribution to decarbonisation require a close alliance with societal institutions and the industry concerned, from the growing of seeds and raw material cultivation to processing and final commercialisation. This consensus is neither of a structural / organisational nature nor visible by coordinated actions. The aim now must therefore be to create a recognisable image for the bioeconomy strategy, so that the public become aware of the industrial diversity and its range of raw materials and products. Efforts in relation to market access must be stepped up in conjunction with the required public acceptance.

Climate Action Programme 2020 / Climate Protection Plan 2050

As the only member state in the EU, Germany has set itself the goal of reducing GHG emissions by at least 40% by 2020 at the latest (instead of 2030 as decided by heads of state and government leaders). The federal government has developed an climate protection action programme for this purpose, which includes virtually all economic areas and aspects of life in society. The federal government justifies this broad approach with the statement from the national inventory report that shows that a GHG reduction of 24.7% has only just been achieved. The current debate on the implementation of the energy transition provides a glimpse into the future at what further disputes are to be expected.

One concerns bioenergy that plays no part in the action programme, in spite of the fact that this accounts for the most significant proportion of renewable energy. During the first hearing procedure with all associations, the industry has emphatically drawn attention to this. With success: BMUB organised a separate workshop on the topic of bioenergy. The associations were asked to submit proposals for the further voting procedure. During the mitigation measures for the agri-

cultural sector, BMUB obviously backs a regulatory enforcement with the priority actions fertiliser ordinance and rewetting of moor regions. From the perspective of UFOP it is worrying that BMUB obviously wants to achieve the specified goal as a result of the confrontation due to time constraints. Measured against the date set, the time frame is too small for strategies that rely on the sector to accommodate them through information and clarification. Thus the voices that question this goal are growing louder.

UFOP also participated in the debate and proposed, i.a., the promotion of the use of biofuels in agriculture and forestry as well as in heavy goods vehicle traffic (B30). Other associations had introduced proposals on biofuel or bioenergy use. The associations submitted over 700 proposals in total. In September 2015, the associations dialogue is expected to continue with the aim of developing an action alliance from the action programme.

In parallel to this, the association voting or the process of dialogue has begun to develop a climate protection plan for 2050 with all societal groups. BMUB pointed out in its analysis that agriculture is not able to contribute easily to climate protection in comparison with all other sectors. Not unexpectedly, the central questions are as follows:

- How can the nitrogen efficiency be improved in agriculture?
- How can policymakers and society contribute to a stronger dissemination of a healthy diet?
- How can land use support climate protection (i.a., protection of bog soil)?

A substitute for all expenditures, such as the replacement of mineral fertiliser with organic fertiliser, is not possible without a significant loss of revenue. After the land use changes associated with this, the question thus arises as to whether the previous level of supply shall be maintained in the case of a steadily increasing population. These and other questions (reducing meat consumption and developing new sources of protein) were discussed at the first meeting of the 'Land use' working group on 26 June 2015. This dialogue process is similar to the mobility and fuel strategy set up as a learning and moderated voting process which will still last for several years.

'Biofuels in agriculture and forestry' industry platform

The establishment of an industry platform to promote the use of biofuels in agriculture and forestry is anticipated for 2015. Starting from the knock-on effect of the Bavarian Ministry of Economic Affairs' 'RapsTrak200' programme, a number of discussions with relevant associations and enterprises from agricultural engineering were held during the reporting period. The orientation towards the promotion of the use of biofuels in agriculture as well as the use of this platform for effective public communication will be the essential focus of activity. The initiators agree that particularly the network to be created via the associations and companies through to consultancy organisations in the federal states is expected to be a special feature of this platform and its activities. At the same time it is important to explore synergies and opportunities for cooperation. Due to the many years of sales promotion activities, much experience and expertise with regard to technical or regulatory questions have not only been acquired by UFOP, but also by national institutions, such as the Technology and Support Centre in the Competence Centre for Renewable Raw Materials in Straubing.

It is clear to those involved that this is a strategy with a lot of small steps. In agriculture itself, a widespread acceptance must exist in order to make a commitment. The market environment currently offers little incentive to switch due to the current price developments in agricultural diesel, biodiesel and rapeseed oil fuel. In this respect, all future members of the platform will need perseverance to promote the use of alternative fuels.

List of tables in the Annex

Biofuels

Table 1: Domestic consumption of biofuels 2009–2014 in 1,000 t

	2009	2010	2011	2012	2013	2014
Biodiesel blended fuel	2.190,7	2.236,0	2.329,0	2.347,6	2.181,4	2.288,8
Biodiesel pure fuel	240,6	293,1	97,2	131,0	30,1	4,9
Biodiesel total	**2.431,3**	**2.529,1**	**2.426,2**	**2.478,7**	**2.211,6**	**2.293,7**
Vegetable oil	100,0	60,9	19,6	24,7	1,2	5,5
Biodiesel total & VO	**2.531,3**	**2.590,0**	**2.445,9**	**2.503,4**	**2.212,8**	**2.299,2**
Diesel fuel	30.936,2	32.128,0	32.963,8	33.678,0	34.840,4	36.437,6
Proportion in the blend in %	7,1	7,0	7,1	7,0	6,3	6,3
Fuel total	**31.276,8**	**32.481,9**	**33.080,7**	**33.833,7**	**34.871,8**	**36.448,0**
Proportion of biodiesel & VO in %	8,1	8,0	7,4	7,4	6,4	6,3
Bioethanol ETBE	197,6	122,2	162,5	141,7	154,5	136,5
Bioethanol blended fuel	687,4	1.028,1	1.054,3	1.089,7	1.040,5	1.025,1
Bioethanol E85	9,0	18,1	19,7	21,3	13,6	10,2
Bioethanol total	**893,9**	**1.168,4**	**1.236,5**	**1.252,7**	**1.208,6**	**1.170,1**
Gasoline	20.177,9	19.614,8	19.601,1	18.486,8	18.422,3	18.815,6
Gasoline + bioethanol fuel	20.185,3	19.629,8	19.617,4	18.504,3	18.433,5	18.824,1
Proportion of bioethanol in %	4,4	6,0	6,3	6,8	6,6	6,2

Source: Federal Office for Economic Affairs and Export Control, AMI

Table 2: Monthly domestic consumption of biofuels 2009–2014 in 1,000 tonnes

	2009	2010	2011	2012	2013	2014
Biodiesel blended fuel						
January	125,55	175,66	157,32	161,02	146,27	167,03
February	179,80	149,07	149,26	172,99	156,15	172,80
March	181,10	190,61	172,71	220,94	183,56	176,38
April	195,36	207,83	186,92	194,71	156,84	198,67
May	194.28	202.72	205.23	210.06	191.17	216.24
June	192,06	193,79	176,67	209,83	189,65	187,11
July	203,74	200,04	224,75	220,32	189,72	203,59
August	209,86	190,56	215,32	223,92	210,23	205,30
September	204,82	191,20	190,48	213,08	192,94	184,21
October	194,01	198,09	214,12	173,56	193,40	181,27
November	211,37	196,24	219,27	178,68	187,05	202,88
December	184,35	166,38	216,99	168,52	184,43	191,73
Average	**189,69**	**188,52**	**194,09**	**195,64**	**181,78**	**190,60**
Total volume	**2.276,30**	**2.262,18**	**2.329,03**	**2.347,62**	**2.181,41**	**2.287,20**
Biodiesel pure fuel						
January	14,12	18,79	3,59	5,26	7,19	0,17
February	7,85	10,98	4,97	4,77	3,01	0,23
March	32,01	19,04	2,22	4,93	9,24	0,15
April	28,10	22,96	3,36	19,98	1,40	0,20
May	16,09	38,84	4,69	13,79	2,37	0,25
June	14,05	39,44	7,32	5,04	0,60	0,45
July	20,01	27,75	4,77	9,10	-1,58	0,40
August	21,23	40,02	5,05	12,77	1,51	0,49
September	31,47	36,13	10,39	18,80	1,43	1,29
October	21,71	22,90	9,42	9,49	2,41	0,41
November	21,41	10,70	8,32	8,64	2,27	-0,43
December	12,49	5,50	33,06	18,47	0,29	1,28
Average	**20,04**	**24,42**	**8,10**	**10,92**	**2,51**	**0,41**
Total volume	**240,54**	**293,05**	**97,16**	**131,03**	**30,13**	**4,89**
Biodiesel total						
January	139,67	194,46	160,91	166,28	153,46	167,20
February	187,65	160,05	154,23	177,76	159,16	173,03
March	213,11	209,66	174,93	225,87	192,80	176,53
April	223,46	230,79	190,28	214,69	158,24	198,88
May	210,47	241,56	209,91	223,85	193,54	216,48
June	206,11	233,22	183,99	214,86	190,25	187,56
July	223,75	227,79	229,54	229,42	188,15	203,99
August	231,09	230,58	220,37	236,69	211,74	205,79
September	236,29	227,32	200,86	231,88	194,37	185,50
October	215,72	220,99	223,54	183,06	195,81	181,68
November	232,78	206,95	227,59	187,32	189,32	202,46
December	196,84	171,88	250,05	186,99	184,71	193,00
Average	**209,74**	**212,94**	**202,18**	**206,55**	**184,30**	**191,01**
Total volume	**2.516,93**	**2.555,24**	**2.426,20**	**2.478,65**	**2.211,55**	**2.292,10**

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	2009	2010	2011	2012	2013	2014
Vegetable oil (VO)						
January	9,19	4,12	0,51	0,23	0,07	0,06
February	4,68	2,76	1,21	2,91	0,02	0,12
March	5,81	7,97	1,06	1,79	0,06	0,12
April	8,40	6,60	3,24	1,86	0,10	-0,18
May	6,48	5,68	2,41	1,04	0,14	0,12
June	8,37	5,83	0,97	1,09	0,08	2,04
July	8,91	6,37	0,43	7,34	0,12	0,15
August	8,83	6,33	0,57	5,44	0,13	0,19
September	11,99	3,97	2,53	1,45	0,14	2,43
October	11,10	4,99	2,27	0,74	0,17	0,20
November	8,54	3,98	2,18	0,28	0,12	0,16
December	7,70	2,32	2,26	0,55	0,07	0,11
Average	**8,33**	**5,08**	**1,64**	**2,06**	**0,10**	**0,46**
Total volume	**100.00**	**60.92**	**19.63**	**24.71**	**1.21**	**5.53**
Bioethanol						
January	67,37	84,24	87,26	95,38	92,82	94,99
February	59,37	75,44	95,57	94,63	80,65	83,84
March	76,23	86,96	85,31	107,54	99,73	86,36
April	86,58	92,54	88,36	110,89	98,98	107,83
May	80,26	103,94	107,67	112,74	108,11	114,47
June	77,39	104,77	108,30	106,79	110,36	96,42
July	88,63	118,04	111,14	107,92	111,92	102,43
August	76,15	106,03	113,14	104,14	103,73	101,55
September	76,47	102,64	112,00	100,87	101,06	95,03
October	68,13	99,22	110,15	114,03	108,73	91,15
November	65,43	96,01	106,48	105,81	97,95	94,18
December	71,93	98,66	111,13	91,99	94,54	101,85
Average	**74,50**	**97,37**	**103,04**	**104,39**	**100,72**	**97,51**
Total volume	**893,94**	**1.168,48**	**1.236,49**	**1.252,73**	**1.208,58**	**1.170,08**

Source: Federal Office for Economic Affairs and Export Control, AMI

Table 3: International trade with biodiesel 2009–2014 in tonnes

	2009	2010	2011	2012	2013	2014
Imports of biodiesel						
January	64.876	67.044	35.999	28.315	24.087	17.431
February	51.191	74.784	26.463	24.575	18.576	19.252
March	75.210	88.039	48.629	37.963	26.276	31.708
April	60.175	58.430	78.277	57.865	5.057	42.156
May	96.561	150.943	82.276	98.630	62.616	49.364
June	84.527	154.608	124.658	107.837	60.835	55.973
July	89.319	136.781	114.971	83.011	78.429	81.779
August	134.946	136.321	105.697	92.707	73.280	74.013
September	94.197	128.279	86.085	73.890	49.626	58.411
October	73.277	87.527	86.125	78.031	42.602	38.760
November	55.632	104.588	62.443	34.383	42.430	50.872
December	111.047	73.386	70.318	44.437	31.740	58.424
Total	**990.964**	**1.260.730**	**921.941**	**761.644**	**558.553**	**578.143**
Exports of biodiesel						
January	28.703	68.836	61.252	74.820	116.282	150.584
February	55.936	97.385	129.323	70.809	80.558	128.301
March	54.081	95.514	101.078	89.013	134.785	143.442
April	36.946	78.214	135.813	83.518	92.598	112.718
May	41.715	103.827	131.876	92.821	116.370	105.689
June	46.299	114.460	157.211	107.396	122.474	157.472
July	73.904	89.507	116.598	102.487	152.274	145.959
August	68.716	166.430	99.556	115.681	185.278	162.282
September	106.998	85.514	144.816	131.896	159.923	169.149
October	85.795	107.993	105.822	124.902	144.817	166.019
November	81.105	78.703	85.557	93.298	158.488	164.943
December	81.202	126.207	74.957	126.943	135.310	109.862
Total	**761.400**	**1.212.590**	**1.343.859**	**1.213.582**	**1.599.154**	**1.716.419**

Source: Federal Statistical Office, AMI

Table 4: EU production capacity for biodiesel 2009–2014 in 1,000 tonnes

	2009	2010	2011	2012	2013	2014
Germany	5.086	4.933	4.932	4.968	4.970	4.970
France*	2.505	2.505	2.505	2.456	2.480	2.480
Italy*	1.910	2.375	2.265	2.310	2.340	2.340
The Netherlands*	1.036	1.328	1.452	2.517	2.250	2.495
Belgium	705	670	710	770	959	959
Luxembourg	-	-	-	20	-	-
United Kingdom	609	609	404	574	577	577
Ireland*	80	76	76	76	76	76
Denmark	140	250	250	250	250	250
Greece	715	662	802	812	.	762
Spain	3.656	4.100	4.410	4.391	4.320	4.320
Portugal	468	468	468	483	470	470
Austria	707	560	560	535	500	500
Finland*	340	340	340	340	340	340
Sweden	212	277	277	270	270	270
Estonia	135	135	135	110	.	.
Latvia	136	156	156	156	.	.
Lithuania	147	147	147	130	.	.
Malta	8	5	5	5	.	.
Poland	580	710	864	884	900	1.184
Slovakia	247	156	156	156	156	156
Slovenia	100	105	113	113	125	125
Czech Republic	325	427	427	437	410	410
Hungary	186	158	158	158	.	.
Cyprus	20	20	20	20	.	.
Bulgaria	435	425	348	408	.	.
Romania	307	307	277	277	.	.
EU-27	**20.795**	**21.904**	**22.257**	**23.626**	**21.393**	**22.684**

Note: Calculated based on 330 working days/year/plant;
* = from 2007 including production capacity for hydrogenated vegetable oil (HVO)/Co-refining

Sources: European Biodiesel Board, national statistics, AMI

Table 5: EU production of biodiesel and HVO 2007 - 2014 in 1,000 tonnes

	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	145	277	416	350	472	291	500	600
Denmark	70	98	86	76	79	109	200	200
Germany	2.890	2.600	2.500	2.350	2.800	2.600	2.600	3.000
United Kingdom	427	282	196	154	177	246	250	350
France	954	1.763	2.089	1.996	1700	1.900	1.800	1.850
Italy	470	668	798	799	591	287	459	400
The Netherlands	85	83	274	382	410	382	606	650
Austria	242	250	323	337	310	264	234	240
Poland	44	170	396	371	364	592	648	692
Portugal	181	169	255	318	359	299	294	310
Sweden	114	145	110	130	239	352	223	180
Slovenia	7	8	7	21	1	6	15	0
Slovakia	46	105	103	113	127	110	105	101
Spain	180	221	727	841	649	472	581	750
Czech Republic	82	75	155	198	210	173	182	219
EU other	.	.	.	.	**548**	**660**	**712**	**682**
EU-27	**6.129**	**7.321**	**8.888**	**8.981**	**9.036**	**8.743**	**9.409**	**10.224**
HVO[1]	.	.	.	.	**404**	**1.201**	**1.325**	**1.620**
Total	.	.	.	.	**9.440**	**9.944**	**10.734**	**11.844**

Source: F.O. Licht
[1]Estimate cumulated (Sp, Fin, Fr, It)

Table 6a: Germany biodiesel [FAME] trade in tonnes – imports

Imports	2009	2010	2011	2012	2013	2014
Belgium	102.466	206.884	102.112	199.491	129.453	47.162
Bulgaria	1	.	.	.	.	.
Denmark	.	.	1.212	1.051	699	
Estonia	.	.	.	.	.	.
Finland	11.473	15	.	.	.	.
France	1.093	1.175	5.881	5.796	639	7.826
United Kingdom	14.960	21.379	41.439	21.372	3.470	1.845
Italy	3.862	13	2.713	1.720	157	20.643
Latvia	.	.	11.859	.	.	.
Lithuania	76	.	.	.	.	.
Luxembourg	.	.	.	.	.	.
The Netherlands	806.880	960.512	611.904	406.474	338.887	311.920
Austria	11.199	17.122	26.063	30.216	26.608	41.371
Poland	2.325	9.740	83.791	54.348	47.683	34.472
Portugal	.	.	.	.	.	.
Sweden	1.342	2.963	163	58	38	0
Slovakia	.	.	.	276	.	682
Slovenia	.	.	.	.	156	.
Spain	72	3.004	5	.	.	.
Czech Republic	4.828	7.701	10.451	420	2.253	5.058
Cyprus	.	.	.	.	.	75
EU	**960.576**	**1.230.507**	**897.592**	**721.221**	**550.044**	**471.054**
Malaysia	26.631	26.104	18.147	16.573	880	100.348
Indonesia	.	2.960	5.046	.	7.585	6.018
US	1.139	10	1	58	1	16
Other countries	2.618	4.114	6.206	23.792	7.628	6.725
Total	**990.964**	**1.260.735**	**921.946**	**761.644**	**558.553**	**578.143**

Source: Federal Statistical Office, AMI

Table 6b: Germany biodiesel [FAME] trade in t – exports

Exports	2009	2010	2011	2012	2013	2014
Belgium	57.695	136.304	90.826	117.539	78.995	117.930
Bulgaria	5	15	2	14.245	6.101	366
Denmark	4.771	1.512	36.453	26.341	16.120	29.146
Estonia	2.603	.	0	5	0	.
Finland	818	493	29.659	13.348	19.562	8.729
France	60.779	113.072	43.050	72.597	92.078	221.641
United Kingdom	71.807	74.654	115.139	24.586	92.994	68.243
Italy	33.918	58.036	32.255	69.056	63.920	77.297
Latvia	.	.	2.482	5	2	5
Lithuania	125	.	117	132	5.704	76
Luxembourg	55	75	59	4.027	13	.
The Netherlands	224.294	239.384	305.201	305.170	502.476	600.089
Austria	41.039	68.705	68.547	171.604	149.295	110.773
Poland	150.856	388.839	484.059	200.131	176.255	163.724
Portugal	3.733	35	12	26	0	0
Sweden	33.120	8.192	20.162	41.840	24.025	55.829
Slovakia	33	13.696	15.787	4.875	3.180	10.376
Slovenia	49	14.763	4.339	6.529	1.410	201
Spain	6.383	12.407	223	4.547	32.145	49.312
Czech Republic	38.085	22.607	61.187	95.526	47.018	60.411
EU	**753.608**	**1.160.947**	**1.325.369**	**1.205.007**	**1.384.664**	**1.618.328**
US	801	1.165	1.083	405	180.200	8.544
Other countries	9.996	50.484	17.411	8.170	34.290	89.547
Total	**761.405**	**1.212.596**	**1.343.863**	**1.213.582**	**1.599.154**	**1.716.419**

Source: Federal Statistical Office, AMI

Table 7: Biodiesel production capacity 2015 in Germany

Operator/Works	Location	Capacity (t/year)	
ADM Hamburg AG -Hamburg plant-	Hamburg	not stated	●
ADM Hamburg AG -Leer plant-	Leer	not stated	●
ADM Mainz GmbH	Mainz	not stated	●
BDK Kyritz GmbH	Kyritz	80.000	
BIO.Diesel Wittenberge GmbH	Wittenberge	120.000	
BIOPETROL ROSTOCK GmbH	Rostock	200.000	
Biowerk Sohland GmbH	Sohland a. d. Spree	50.000	●
BKK Biodiesel GmbH	Rudolstadt	4.000	
Cargill GmbH	Frankfurt/Main	300.000	●
EAI Thüringer Methylesterwerke GmbH (TME)	Harth-Pöllnitz	45.000	
ecoMotion GmbH	Lünen, Sternberg, Malchin	212.000	●
german biofuels gmbh	Falkenhagen	130.000	●
Gulf Biodiesel Halle GmbH	Halle	56.000	
KFS-Biodiesel GmbH	Cloppenburg	30.000	
KL Biodiesel GmbH & Co. KG	Lülsdorf	120.000	
Louis Dreyfus commodities Wittenberg GmbH	Lutherstadt Wittenberg	200.000	●
MBF Mannheim Biofuel GmbH	Mannheim	100.000	●
NEW Natural Energie West GmbH	Neuss	260.000	●
Petrotec AG	Emden	100.000	
Petrotec AG	Südlohn	85.000	
PROKON Pflanzenöl GmbH Magdeburg	Magdeburg	64.000	
Rapsol GmbH	Lübz	6.000	
TECOSOL GmbH (formerly Campa)	Ochsenfurt	75.000	●
Ullrich Biodiesel GmbH/IFBI	Kaufungen	35.000	
Verbio Diesel Bitterfeld GmbH & Co. KG (MUW)	Greppin	190.000	●
Verbio Diesel Schwedt GmbH & Co. KG (NUW)	Schwedt	250.000	●
Vesta Biofuels Brunsbüttel GmbH & Co. KG	Brunsbüttel	150.000	
Vogtland Bio-Diesel GmbH	Großfriesen	2.000	
Total (without ADM)		**2.864.000**	

Note: ● = AGQM member;
Source: UFOP, FNR, VDB, AGQM/Names sometimes shortened
The DBV and UFOP recommend the biodiesel reference from the membership of the Working Group
As at: August 2015

Table 8: Development of fuel supply from renewable energies since 1990

Year	Biodiesel	Vegetable oil	Bioethanol	Total for renewable fuel production
				Stated in thousand 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	2.300	6	1.170	**3.540**

Source: BAFA

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