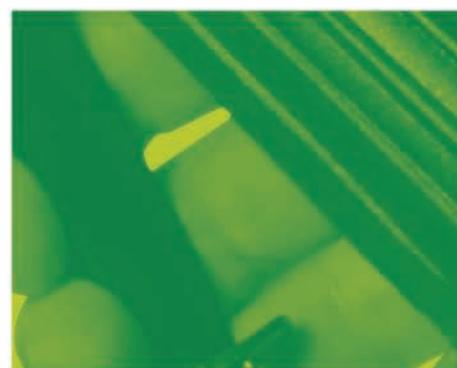


# UFOP-INFORMATION

## GERMANY'S BIODIESEL SECTOR HAS NOW TO DOCUMENT ITS SUSTAINABILITY





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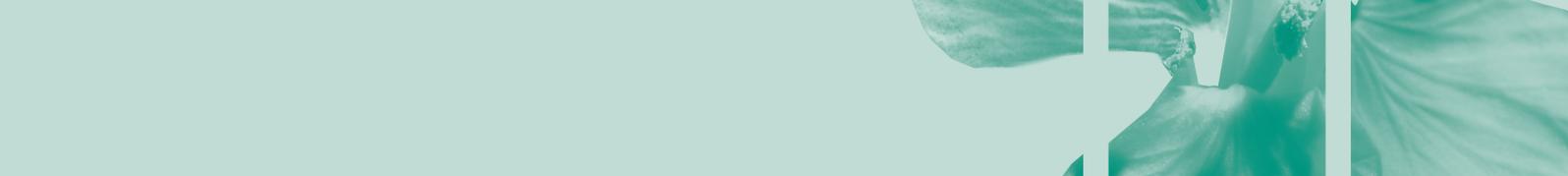
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UFOP



## **GERMANY'S BIODIESEL SECTOR HAS NOW TO DOCUMENT ITS SUSTAINABILITY**

The German Federal Government with the sustainability decree for biofuels (Biokraftstoff-Nachhaltigkeitsverordnung - BiokraftNachV) decided in September 2009 going its own way considering the implementation of the European Union's Renewable Energy Directive 2009/28/ EC (RED) into national law. The criteria from the decree are more severe than the existing cross compliance rules. The EU-Commission has not yet issued its guidelines on the implementation of the sustainability orders stipulated in the RED which are to ensure an environmentally compatible biofuels usage in the member states by 2020. The Commission announced the publication of the guidelines for the end of March 2010.

The German sustainability decree does not only increase administrative costs for the biofuels sector nor is it a simple amendment to the sustainability decree on electricity generation from biomass (BiomassestromNachhaltigkeitsverordnung - BioSt-NachV)). First, it re-defines market access to one of the top EU biofuel markets, also for non-EU market participants, from mid-2010. Second, the decree determines feedstock sourcing for biofuels producers. Finally, it may act as an example for the yet to be issued EU guidelines.

Besides the new requirements from the government's decree, the biofuels consumption pattern is to change in the years to 2015, while discussions on the implementation of a greenhouse gas (GHG)-based biofuels legislation have already started.

## **THE GERMAN BIOFUELS SUSTAINABILITY DECREE – MORE THAN A BUREAUCRATIC BURDEN**

The key requirements of the sustainability decree for biofuels approved by the Federal Cabinet on September 30, 2009 is set forth in paragraphs 4 to 8, which specifically concern verification obligations and limits concerning biomass origin requirements:

1. No utilization of biomasses grown in areas deemed worthy of high-level nature conservation. These include: primeval forests and natural areas containing domestic tree species or areas in which no clearly visible signs of human activity are evident; and areas that are already conservation areas or are conserved within the scope of international agreements.

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2. Grassland encompassing significant biological diversity.
  3. Carbon-rich areas, e.g., moors, wetlands, or permanently wooded areas.
  4. No utilization of biomasses grown in areas that were deemed turf moors on January 1, 2008 (reference date).
  5. Biomass cultivation must be carried out according to good professional practice, i.e. cross compliance.

The Federal Office for Agriculture and Nutrition (BLE) is responsible for the implementation of the sustainability decree. However, the BLE is exclusively focusing on "monitoring the monitoring systems." Introduction and implementation of the corresponding certification systems at the single stages in the supply chain (i.e. agricultural traders like cooperatives (first stage of collecting the raw material like oil seeds or cereals), oil mills, biodiesel manufacturers, ...) are incumbent upon the relevant business sector, whereas the BLE merely approves the certification systems and monitoring posts.

Implementation of this ordinance has now generated discussions in the agricultural trade regarding its practicality and bureaucratic excessiveness. The agricultural trade demands that verification should be effected with as little bureaucratic involvement as possible and by way of requirements that go beyond cross compliance. The background of the debate lies in the requirements of the RED that stipulates the verification of sustainable biomass production via corresponding certification systems. Continuous proof of maintenance of these sustainability requirements has to be provided along the supply chain in mass balances. Mass balances are a bookkeeping system to track the processing of biomass along the whole supply chain. The volume/weight of the biomass purchased is already gathered at the feedstock wholesaler level.

Presently, the German farmer's association, DBV, the trader association of the agricultural cooperatives, DRV, the oilseed growers association, UFOP or the association of the German bioethanol producers, BDBe, are cooperating on a certification body for domestic energy crop growers, oil mills and biodiesel producers.

The foundation and implementation of this certification system – "RED-cert" – is projected and it is also envisaged to provide this certification system internationally to licenses in other EU-member states.



Feedstock and biofuel importers will have the opportunity to receive a sustainability certificate from the International Sustainability and Carbon Certification (ISCC) project set up by Cologne-based consultancy Meó Corporate Development GmbH and supported by the German Federal Agriculture Ministry. The pilot phase of the ISCC project has ended in early 2010. The ISCC System has been approved interim by the German Authority BLE as first Certification System for sustainable Biomass and Bioenergies following the German Biofuel Sustainability Ordinance “Biokraftstoff-Nachhaltigkeitsverordnung” (Biokraft-NachV). ([http://www.iscc-project.org/www.iscc-system.org/content/index\\_eng.html](http://www.iscc-project.org/www.iscc-system.org/content/index_eng.html))

Pressure from the relevant trade associations was nonetheless successful in ensuring that the new regulations would not apply retroactively to the 2009 harvest. As such, the ordinance stipulates that biomasses can be used for energy purposes without verification until June 30, 2010. In Germany this relates to 1 mln hectares of rapeseed crops, equating to around 4 mln tonnes of rapeseed, as well as the domestically grown grain for ethanol production. From July 1, 2010, onward, either proof of origin from the 2009 harvest or a sustainability certification will have to be presented. Thus, the requirements stipulated in the decree only apply in full for the 2010 harvest. At first affected is the palm oil and the soy oil (southern hemisphere) production

The decree will present all participants in the production and trade chain with enormous challenges. Moreover, there is much debate regarding the enforcement of these requirements in terms of third-party countries. Yet it is notable that practically all the agricultural nations involved (which are also the most internationally significant biofuel manufacturers)—the United States, Brazil, Argentina, Malaysia, and Indonesia—are intensively debating the national introduction of certification systems and also due to the fact that the EU is the biggest market in the world for biodiesel and palm oil for cogeneration and the introduction of E10. It is apparent that as a consequence of the implementation of the requirements of the RED in “third countries” a level playing field is being created in the form of practically equivalent, international regulations for biomass cultivation and documentation obligations.



## THE RENEWABLE ENERGY DIRECTIVE WILL CHALLENGE THE BIODIESEL SECTOR IN THE COMING DECADE

The sustainability decree for biofuels is a first national trial to implement EU legislation. The cornerstone of the EU biofuels policy to 2020, the energy and climate protection package, was agreed in March 2007 within the scope of the German Council presidency. This envisaged an average minimum 20% reduction of EU Green-House- Gas (GHG) emissions by 2020, a 20% increase in energy efficiency, and a 20% proportion of renewable energies within the energy mix. A subordinate obligatory goal for all member states was a renewable energy share of at least 10% for the transport sector from 2020. The RED proposal of the EU-Commission and Council resolution was approved by the European Parliament in late 2008 and published in the EU's Official Journal in June 2009. Heated debate in the European Parliament had previously led to the compromise that verifiable sustainability criteria would be established as additional requirements, particularly regarding the use of vegetable oils for generating electricity and heat as well as for biofuel production.

A prerequisite for national funding was the provision of evidence that biofuels reduce GHG emissions by at least 35% in comparison to the emissions from fossil diesel fuel. This requirement rises to a minimum of 50% from January 1, 2017, and to at least 60% for new plants which will go on stream after 31st December 2016. Grandfathering rights are granted for plants which were operational before 23th January 2008 making the 35% threshold compulsory from April 1, 2013.

A “CO<sub>2</sub> reduction gap” exists in relation to biodiesel made from rapeseed, soy beans or palm oil, the key feedstock in the bloc, regarding the required GHG-reduction level of 50% (fig.1). However, to achieve the 2017 50% target, the GHG-emissions along the value chain have to be reduced in coming years. Noteworthy is the fact that “mixing” biofuels in relation to the balancing out of GHG emissions is only possible when all biodiesel produced or the respective raw material achieve the minimum reduction in GHG. Consequently biodiesel made from soy oil has to run out of the EU-market in latest at the end of 2010.

Consequently, to give biodiesel made from rape seed or soy bean oil a mid-term perspective as a raw material for biodiesel production or as a fuel for heat and power gene-

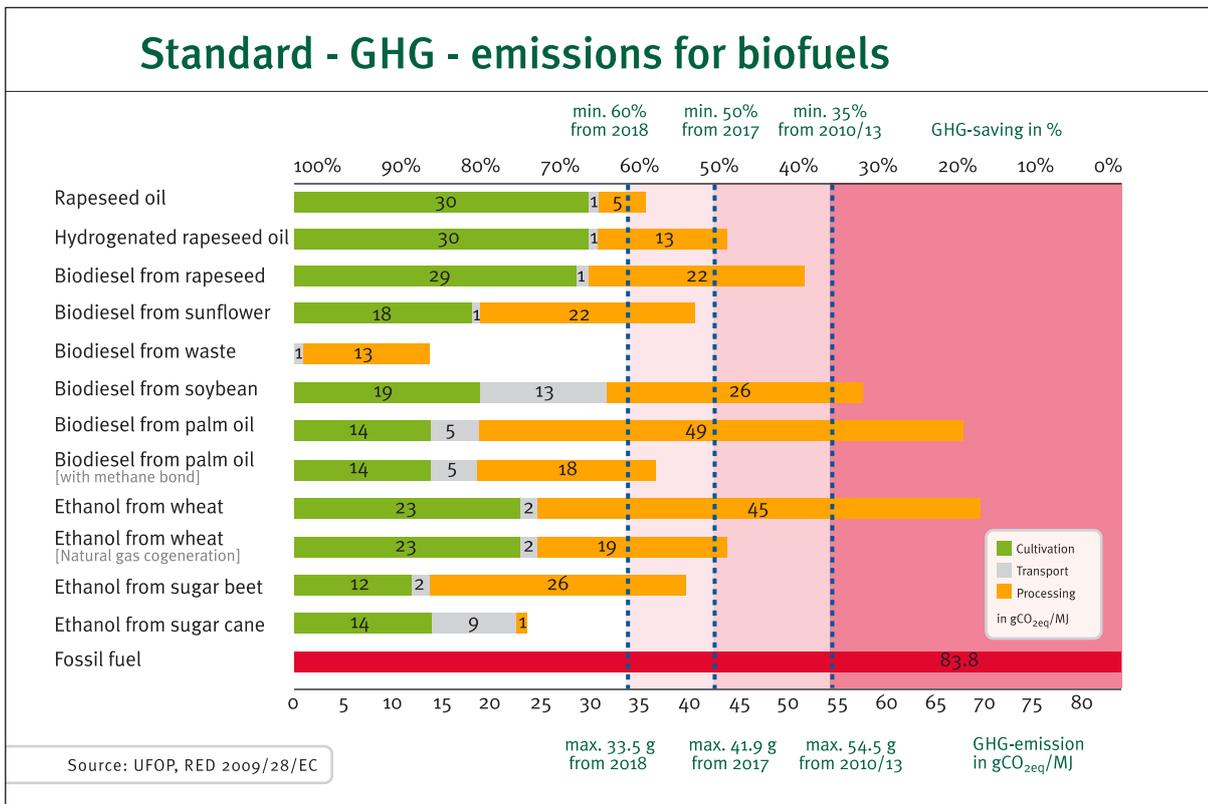


fig.1

ration, additional efforts to close this gap are needed throughout the life cycle, beginning with cultivation of energy crops and then through the processing stage to biodiesel production. Commensurate with this objective, UFOP commissioned the German Biomass Research Centre DBFZ with a relevant project: *Optimization of the greenhouse gas balance of biodiesel*, which will be finalized in spring 2010. The aim of this project is to analyse all possibilities to reduce respectively to optimize the GHG-balance based on the modular “structure” of the annex V of the RED and the so called default values, which are of course the same in the German sustainability decree. The final aim was – in the best case - to suggest amendments concerning the default values so that there is no demand for an individual certification especially on the crop production level.

The grandfathering rights are a key issue for future biodiesel importers, i.e. the manufacturers in Southeast Asia and Argentina. These have to prove that their facility was already operational and producing before 23th January 2008. Otherwise, the biofuel producer has to certify the product chain by a GHG calculation, which confirms the fulfilling of the 35% threshold. But nevertheless from the point of view of UFOP still clarification is necessary concerning the question, whether the grandfathering rights include the different biomass sources. E.g. with soy oil the corresponding biodiesel does not fulfil the 35% GHG threshold.

## A DARK OUTLOOK FOR PURE BIOFUELS

The sustainability decree is not the only change the German biofuels sector has to face in the coming decade. A sharp decline of pure biofuels consumption is expected and quotas from 2015 will be GHG-based.

Although the Bundesrat, the upper house of the parliament, campaigned to adjust tax concessions in favour of biodiesel and pure plant oil (PPO) — to once more provide a perspective for the regional marketing of pure fuel and subsequently the small- and medium-sized plant operators — the Federal Government ultimately pushed in June 2009 through its Draft Law on the Amendment of the Promotion of Biofuels by way of the Bundestag resolution. As such, the mediating committee was overruled. Although the 2009 energy tax increase on biodiesel of EUR0.03 per litre to EUR0.18 was first reduced retroactively to January 1, 2009, and then under the Growth Acceleration Act approved in late 2009 for the years 2010-12 (fig. 2), this is not sufficient to assure the competitiveness given the price developments on the crude oil markets. The coalition pointed in its agreement paper out, that from 2013 on further tax exemptions are bounded to a minimum of GHG reduction. But the paper does not contain any concrete regulation.

Energy Tax on pure Biofuels in Cent/Liter		
Year	Biodiesel (B100)	Vegetable oil
2008	14,9	9,9
2009	18,3	18,2
2010	18,6	18,5
2011	18,6	18,5
2012	18,6	18,5
from 2013	*)	*)

\*) currently under discussion:  
 - reduction of the energy tax until 2010  
 - in combination with the reduction of GHG from 2013



fig.2



In its report on tax concessions, UFOP established that pure biodiesel was under-compensated by EUR0.15 per litre. Moreover, in the case of the decentralized manufacturers of rapeseed-based fuel, UFOP calculations show an under-compensation of EUR0.26 per litre. The refusal to completely exempt public transport and rail traffic from tax has robbed pure fuel of a further future sales perspective.

In addition, UFOP has reinforced its position that tax concessions from suppliers of petroleum products should specifically benefit the transport sector. UFOP has also called for the promotion of climate protection by reducing street charges for fleet operators that verifiably use biodiesel or PPO. Such a move would primarily boost regional sales for small- and medium-sized facilities, thereby providing a perspective for decentralized bio-fuel manufacturers.

Declining pure biofuel sales result in a reduction in the number of public filling stations offering biodiesel. Whereas around 1,900 stations did so at the start of 2007 according to biodiesel industry research body AGQM (Arbeitsgemeinschaft Qualitätsmanagement Biodiesel) survey, this figure had fallen to around 250 by the end of 2008 and presently, less than 50 filling stations may offer the remaining B-100 supplies.

Notable from the perspective of the biodiesel and PPO business sectors is the fact that — measured against overall diesel fuel consumption — B-100 and PPO replaced 12.7% of the fossil diesel requirement in 2007 and 10.2% in 2008. As a consequence, the two fuels contributed to a CO<sub>2</sub> reduction within the transport sector of around 10 mln tonnes in 2007 and 7.1 mln tonnes in 2008. The Federal Government's national decarbonisation strategy envisages a targeted reduction within the transport sector of 30 mln tonnes of CO<sub>2</sub> per year after 2020.

## **A NEW LEGISLATION IS EMERGING - GHG-BASED BIOFUEL QUOTAS**

The German parliament (Bundestag) in 2009 also decided to reduce the total biofuel quota from 6.25% by energy content to 5.25% retroactively to January 1, 2009. This will increase to 6.25% for the period 2010 to 2014 (fig.3). Significant for meeting quota mandates is that a certain quantity buffer in the form of pure fuel is available for generating tradable quotas; otherwise a punitive penalty of around EUR0.60 per litre may be impo-

sed on incomplete quotas. However, the biofuels quota can also be met with higher ethanol or biodiesel blends and possibly in 2010 also with hydrotreated vegoils (HVO), which reduces the market potential of pure biofuels significantly.

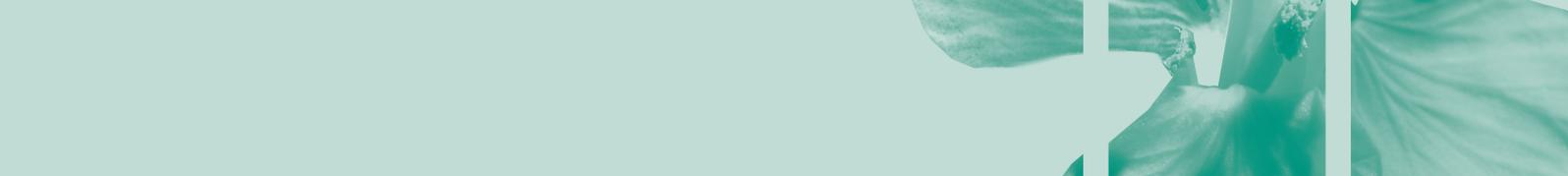
From 2015 the latest, Germany will be the first EU member state to introduce a CO<sub>2</sub> reduction quota. How this mandate is to be implemented and monitored remains, however, unclear. What is clear is that the CO<sub>2</sub> efficiency will be a determining criterion as regards the competitiveness of biofuel providers. As such, biofuel manufacturers should react as quickly as possible and calculate the CO<sub>2</sub> balance of individual plants to establish the reduction potential. There are proposals to introduce the GHG-based biofuels quota already from 2013. However, there was yet no concrete plan from the Federal Agriculture Ministry announced and further discussions are expected for 2010. A GHG-based biofuels legislation would definitely boost advanced biofuels such as cellulosic ethanol and Fischer-Tropsch-Diesel or biodiesel from waste. These have significantly more GHG-reduction potential as shown in the European Commission's calculations published in the RED.

<b>Biofuels and Greenhouse Gas (GHG) Quota</b>				
	<b>Biofuel Quota till 2014</b>	<b>GHG-quota from 2015</b>	<b>GHG-Saving*</b>	<b>Biofuels in Blends**</b>
<b>Year</b>	<b>cal. %</b>	<b>%</b>	<b>%</b>	<b>cal. %</b>
2009	5,25			
2010 till 2014	6,25			
2015		3,0	50	6,00
2017		4,5	60	7,50
2020		7,0	70	10,00

\*) Assumption for the GHG-Saving of biofuels compared with fossil fuel (reference)  
 \*\*) GHG-quota/GHG-saving



fig.3: \*)



## HVO EXTENDS THE BIOFUEL PORTFOLIO

A yet pending issue is the reform of the 37th Emissions Control Act (37. BImSchV) which includes the usage of hydro treated vegoils (HVO). The act yet has to be approved by the Cabinet and requires notification from the European Union. A Cabinet decision before spring 2010 is unlikely.

Under the proposal, up to 3% vol. of HVO can be blended with diesel from July 1, 2010 if the fuel supplier has met a B-7 (vol.) blending obligation. This volume can be used for the biofuels quota. However, there are technical problems in proving the exact biofuel share in HVO-diesel-blends due to the similar molecules. Additionally, it is difficult to examine the feedstock of the HVO, which determines its sustainability retroactively. Both issues may be solved with mass balances, which means that the HVO producer has to keep records how much vegoil he has purchased.

HVO can reduce fuel alcohol demand apart from the existing blending obligation in the short term. For biodiesel, the threat is less severe due to the included B-7 obligation. In the mid-term, HVO and biodiesel usage cannot be expanded endlessly considering the 2020 target, even when ignoring the technical difficulties of higher biodiesel blends: the availability of biodiesel and HVO feedstock is limited since the EU is already a huge vegoil importer and waste feedstocks are difficult to source on an industrial scale. Ethanol from cane or cellulosic material offers a more expandable feedstock basis. As the government plans to raise biofuels usage, ethanol is in the mid-to-long term an option with much bigger growth potential. In this context the current investment activities in the bioethanol sector in Brazil of big petrol companies like SHELL should be taken into account. It is obvious that it is much cheaper for the petrol companies to fulfil the quota commitment with bioethanol instead of biodiesel or HVO. The possibility of the introduction of E 10 – probably already in autumn - in Germany will answer this question. E10 could become the most important competitor in the EU market due to the implementation of the fuel quality directive due to the comparable low national biofuel aims in the member states.



## THE COMING DECADE BRIEFLY

The German biofuels sector in the coming decade has to face several challenges. First, the Federal Cabinet's sustainability decree will definitely impact the market. The German biofuels sector but also exporters in South America or Southeast Asia will have to cope with the sustainability criteria set by the Federal Government. Pure biofuels such as B-100 or PPO are continuously being replaced with blends. The planned HVO usage may mainly reduce ethanol demand – but only in the short term. By 2015, GHG-based biofuel quotas should have replaced the present system. In the light of the GHG-impact and 10% target, fuel ethanol has a larger potential than biodiesel as the feedstocks supply is much larger. The increasing ecological requirements from the RED also mean that the rapeseed-based biodiesel sector has to reduce its GHG emissions along the whole supply chain to comply with the 2017 and 2018 GHG reduction requirements.

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