



Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit



Bundesministerium für
Ernährung, Landwirtschaft
und Verbraucherschutz

VDA

MWV



Roadmap for Biofuels

Joint Strategy of BMU/BMELV, VDA, MWV, IG, VDB and DBV

At the round table meetings on biofuels on 17th January and 5th July 2007, a roadmap was agreed for the further promotion of biofuels between the automotive industry, the mineral oil industry, medium-sized mineral oil traders, agriculture and BMU/BMELV. The roadmap contains the measures necessary in the intermediate term to increase the share of biofuels within Germany and the EU.

The central points are:

- Increase in the use of biogenic fuel ratios and mixing of biodiesel with diesel as well as bioethanol and bio-ETBE with petrol
- Increase in the biofuel targets
- Assurance of the long-term availability of biofuels and successive increase in greenhouse gas efficiency
- Promotion of biofuels of the second generation

Increase in the admixture limits

According to the fuel directives and the applicable fuel standards, the admixture of bioethanol to petrol and biodiesel to diesel fuel must not currently exceed 5% by volume. A limit of 15% applies for ETBE. Correspondingly, fuels with more than 5% admixture of biodiesel by volume or more than 15% ETBE must not be marketed as standard-compliant diesel or petrol fuel. The upper limit of 5% by volume represents 3.3% of the energy content for bioethanol in petrol and 4.4% for biodiesel in diesel.

In order to make the fulfilment of the declared targets possible and cost-efficient (of 6.25 % in the year 2009 and 6.75 % in the year 2010, as well as the EU targets of 8 % by the year 2015 and 10 % by the year 2020 in relation to the energy content), the admixture limits for biodiesel to diesel and bioethanol to petrol are to be increased within the technical possibilities. These fuels with a higher proportion of biogenic components are to be suitable for use in both old and new vehicles.

For petrol, an increase in the admixture from 5 to 10% by volume is largely unproblematic. The necessary standards for this will be produced without delay at national and European levels. The automotive industry assures that it will approve the use of E10 shortly. This will occur before the EU standards are issued.

Old vehicles not capable of using E10 can be filled with a premium variety Super Plus with a maximum admixture of 5% of bioethanol by volume or 15% ETBE (representing 7% ethanol by volume). This variety is to be available at at least 1,000 special petrol pumps until the year 2016. The pumps will be provided according to the market shares by the mineral oil industry and by medium-sized dealers.

For diesel fuel, the automotive industry will shortly approve all private vehicles for B7. The necessary standards for this are being produced at national and European levels without delay with the objective of a uniform European procedure. In addition, ordinances will be quickly issued to include vegetable oils hydrolysed together with mineral oil in the quota to achieve a total of 10% biofuel admixture from 7% of biodiesel and max. 3% of hydrolysed vegetable oils in the refining process.

For the approval of biofuels, it is necessary to ensure the advantages for the environment in the CO₂ balance and to provide evidence of sustainable cultivation of the biomass in the course of a certification process.

The technical requirements of engines for higher levels of admixture have already been fulfilled in the field of heavy utility vehicles in applications under certain conditions. Beyond this, the automotive industry will continue to approve heavy utility vehicle models for use with B100 (RME) if requested by customers, taking account of the changed conditions regarding fuels, and will increasingly offer FFV car models which can be operated with up to 85 % of ethanol (E85).

Increase in the biofuel targets

The biofuel directive demands of the member states that so-called indicative targets of the share of biofuels in total sales are to be achieved: 2 % 2005 and 5.75 % 2010, each in relation to the energy content.

In the course of the publication of the energy package of the EU Commission on 10th January 2007, it was announced that a mandatory target for the use of biofuels of 10 % should be recommended for the year 2020. Following this, the European Council also demanded a mandatory target of 10% in the year 2020 for all member states on 9th March 2007. This is expressly approved. The mandatory character of this target is coupled with assurance of the long-term production of biofuels, that biofuels of the second generation are commercially available and the directive for fuel quality is correspondingly amended so that suitable mixing ratios become possible.

The recommendation of the Commission to amend the fuel directive also includes a decarbonisation strategy which provides for an annual reduction in greenhouse gases of 1% from the year 2011 until the year 2020. It is certainly appropriate in the future to assess biofuels by their reduction in greenhouse gases. The preparatory work of the member states is to be taken into account in this relation.

The results of studies on behalf of the German government lead to the conclusion that an increase in the use of biofuels to 17 % in terms of energy is ambitious but possible.

For petrol, higher rates of admixture and E85 are notable. Synthetic biofuels are also conceivable.

In order to achieve an increase in the proportion of biofuel in diesel fuel to 20% by volume by 2020 and to define the details of the still lacking 10% proportion of biogenic fuel in diesel more closely in a technically open context, the German government will produce a joint strategy and a time corridor after speaking with the affected organisations.

The automotive industry will continue in its endeavours to further reduce fuel consumption as a contribution to the preservation of resources. The combination of reduced consumption and an increasing share of biofuels in fuel supplies is the key to achieving the political climate protection and energy supply targets.

Long-term cultivation of biomass and high potential for the reduction of greenhouse gases

The German government intends to make use of the powers conferred by the Biofuel Quota Act as soon as possible, by which biofuels are only included in the fulfilment of mandatory quotas and are only exempted from taxation if certain requirements on the long-term management of agricultural areas for the production of the employed biomass are complied with or certain requirements on the protection of natural habitats are fulfilled or if the energy product demonstrates a certain potential for the reduction of greenhouse gases. This also includes rulings on cultivation standards and rulings to prevent natural habitats worthy of protection from being destroyed or impaired for the production of biomass. To ensure that such minimum requirements are complied with, national, EC or international certification systems yet to be created can be employed. The German government is currently working swiftly on the draft of a corresponding ordinance.

The German government will also take action in the course of bilateral co-operation with partner countries to ensure that the cultivation of biomass is conducted on a long-term basis and without competition with the cultivation of foodstuffs. The reduction of greenhouse gas emissions in the transport sector can only be achieved by an integrated concept.

Promotion of biofuels of the second generation

Biofuels of the second generation promise great advantages in the fields of environmental conservation and secure supplies. Many more raw materials (e.g. wood cuttings and straw) are suitable for their production than in the first generation. It is also prognosed that the energy yield per unit area will be more than double and the greenhouse gas balance substantially better than for biofuels of the first generation. With biofuels of the second generation, it is anticipated that a further substantial increase in biofuel production from indigenous raw materials is possible.

Tax exemption for biofuels of the second generation and simultaneous inclusion in mandatory quotas by the year 2015 is an important incentive for investments in research and development and also in plant construction.

The statutory definition currently encompasses the following biofuels:

- synthetic hydrocarbons or synthetic hydrocarbon mixtures gained by thermochemical conversion of biomass
- alcohols gained by biotechnical processes to break down cellulose
- energy products with a bioethanol content of 70 to 90 percent.

Currently, a pilot plant for the production of BtL fuels is under construction in Freiberg (Saxony) which, according to the constructors, is to commence operation within the year 2007. If the operation of the pilot plant is successful, the company has stated that concrete steps will be taken towards large-scale production. The issues of economy, the ecological balance and possible technical risks must be quickly clarified. At the same time, one company is investigating the construction of a plant in Germany for the production of bioethanol by the enzymatic break-down of lignocellulose.

The implementation of a large-scale plant for the production of biofuels of the second generation currently remains open. The further procedures will be oriented mainly to the experience gained in the first stage. The mineral oil industry supports the further development of biofuels of the second generation, particularly in the field of R&D. However, no statement can be made regarding the implementation of a large-scale plant at the current state of development. Particular concerns exist regarding the planning and investment risks for the period after the expiry of tax exemption in the year 2015, as BtL is not marketable without promotion beyond that time.

To create additional investment incentives and a long-term perspective for the period after 2015, it should therefore be regulated by ordinances that biofuels will be assessed in the course of implementation of the decarbonisation strategy by their reduction in greenhouse gases, with the consequence that biofuels with a good greenhouse gas balance receive a higher inclusion factor within the quota rulings and are thereby favoured over other biofuels.