

**DIRECTIVE 2009/30/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL****of 23 April 2009****amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC****(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof and Article 175(1) thereof in relation to Article 1(5) and Article 2 of this Directive,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee <sup>(1)</sup>,

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty <sup>(2)</sup>,

Whereas:

- (1) Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels <sup>(3)</sup> establishes minimum specifications for petrol and diesel fuels for use in road and non-road mobile applications for health and environmental reasons.
- (2) One of the objectives laid down in the Sixth Community Environment Action Programme established by Decision No 1600/2002/EC <sup>(4)</sup> of 22 July 2002 is to achieve levels of air quality that do not give rise to significant negative impacts on, or risks to, human health and the environment. In its statement accompanying Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe <sup>(5)</sup> the Commission recognised the need to reduce emissions of harmful air pollutants if significant progress were to be made towards the objectives established in the Sixth Community Environment Action Programme and foresaw, in particular, new legislative proposals that would further reduce Member States' permitted national emissions of key pollutants, reduce emissions associated with refuelling of petrol cars at service stations and address the sulphur content of fuels, including marine fuels.

(3) The Community has committed itself under the Kyoto Protocol to greenhouse gas emission targets for the period 2008-2012. The Community has also committed itself by 2020 to a 30 % reduction in greenhouse gas emissions in the context of a global agreement and a 20 % reduction unilaterally. All sectors will need to contribute to these goals.

(4) One aspect of greenhouse gas emissions from transport has been tackled through the Community policy on CO<sub>2</sub> and cars. Transport fuel use makes a significant contribution to overall Community greenhouse gas emissions. Monitoring and reducing fuel life cycle greenhouse gas emissions can contribute to helping the Community meet its greenhouse gas reduction goals through the decarbonisation of transport fuel.

(5) The Community has adopted regulations limiting pollutant emissions from light and heavy duty road vehicles. The fuel specification is one of the factors that influence the ease with which such emission limits can be met.

(6) Derogations from the maximum summer petrol vapour pressure should be limited to those Member States with low ambient summer temperatures. It is therefore appropriate to clarify in which Member States a derogation should be permitted. These are, in principle, those Member States where the average temperature for a majority of their territory is below 12 °C for at least two of the three months of June, July and August.

(7) Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery <sup>(6)</sup>, sets emission limits for engines used in non-road mobile machinery. Fuel enabling the proper functioning of these engines needs to be provided for the operation of this machinery.

(8) The combustion of road transport fuel is responsible for around 20 % of Community greenhouse gas emissions. One approach to reducing these emissions is through reducing the life-cycle greenhouse gas emissions of these fuels. This can be done in a number of ways. In

<sup>(1)</sup> OJ C 44, 16.2.2008, p. 53.

<sup>(2)</sup> Opinion of the European Parliament of 17 December 2008 (not yet published in the Official Journal) and Council Decision of 6 April 2009.

<sup>(3)</sup> OJ L 350, 28.12.1998, p. 58.

<sup>(4)</sup> OJ L 242, 10.9.2002, p. 1.

<sup>(5)</sup> OJ L 152, 11.6.2008, p. 43.

<sup>(6)</sup> OJ L 59, 27.2.1998, p. 1.

view of the Community's ambition to further reduce greenhouse gas emissions and the significant contribution that road transport makes to those emissions, it is appropriate to establish a mechanism requiring fuel suppliers to report the life-cycle greenhouse gas emissions of the fuel that they supply and to reduce them from 2011 onwards. The methodology for the calculation of life-cycle greenhouse gas emissions from biofuels should be identical to that established for the purposes of the calculation of greenhouse gas impacts under Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources <sup>(1)</sup>.

(9) Suppliers should, by 31 December 2020, gradually reduce life cycle greenhouse gas emissions by up to 10 % per unit of energy from fuel and energy supplied. This reduction should amount to at least 6 % by 31 December 2020, compared to the EU-average level of life cycle greenhouse gas emissions per unit of energy from fossil fuels in 2010, obtained through the use of biofuels, alternative fuels and reductions in flaring and venting at production sites. Subject to a review, it should comprise a further 2 % reduction obtained through the use of environmentally friendly carbon capture and storage technologies and electric vehicles and an additional further 2 % reduction obtained through the purchase of credits under the Clean Development Mechanism of the Kyoto Protocol. These additional reductions should not be binding on Member States or fuel suppliers on entry into force of this Directive. The review should address their non-binding character.

(10) Biofuel production should be sustainable. Biofuels used for compliance with the greenhouse gas reduction targets laid down in this Directive should therefore be required to fulfil sustainability criteria. In order to ensure a coherent approach between energy and environment policies, and to avoid the additional costs to business and the environmental incoherence that would be associated with an inconsistent approach, it is essential to provide the same sustainability criteria for the use of biofuels for the purposes of this Directive on the one hand and Directive 2009/28/EC on the other. For the same reasons, double reporting should be avoided in this context. Furthermore, the Commission and competent national authorities should coordinate their activities within the framework of a committee specifically responsible for sustainability aspects.

(11) The increasing worldwide demand for biofuels, and the incentives for their use provided for in this Directive should not have the effect of encouraging the destruction of biodiverse lands. Those finite resources, recognised in various international instruments to be of value to all mankind, should be preserved. Consumers in the Community would, in addition, find it morally unacceptable that their increased use of biofuels could have the effect of destroying biodiverse lands. For these reasons, it is necessary to provide sustainability criteria ensuring that biofuels can qualify for the incentives only when it can be guaranteed that they do not originate in biodiverse areas or, in the case of areas designated for nature protection purposes or for the protection or rare, threatened or endangered ecosystems or species, the relevant competent authority demonstrates that the production of the raw material does not interfere with those purposes. The sustainability criteria should consider forest as biodiverse where it is a primary forest in accordance with the definition used by the Food and Agriculture Organisation of the United Nations (FAO) in its Global Forest Resource Assessment, which countries use worldwide to report on the extent of primary forest or where it is protected by national nature protection law. Areas where collection of non-wood forest products occurs should be included, provided the human impact is small. Other types of forests as defined by the FAO, such as modified natural forests, semi natural forests and plantations, should not be considered as primary forests. Having regard furthermore, to the highly biodiverse nature of certain grasslands, both temperate and tropical, including highly biodiverse savannahs, steppes, scrublands and prairies, biofuels made from raw materials originating in such lands should not qualify for the incentives provided for by this Directive. The Commission should establish appropriate criteria and geographical ranges to define such highly biodiverse grasslands in accordance with the best available scientific evidence and relevant international standards.

(12) In calculating the impact of greenhouse gas emissions of land conversion, economic operators should be able to use actual values for the carbon stocks associated with the reference land use and the land use after conversion. They should also be able to use standard values. The work of the Intergovernmental Panel on Climate Change is the appropriate basis for such standard values. That work is not currently expressed in a form that is immediately applicable by economic operators. The Commission should therefore produce guidance drawing on that work to serve as the basis for the calculation of carbon stock changes for the purposes of this Directive, including such changes to forested areas with a canopy cover of between 10 % and 30 %, savannahs, scrublands and prairies.

<sup>(1)</sup> See page 16 of this Official Journal.

- (13) It is appropriate for the Commission to develop methodologies with a view to assessing the impact of the drainage of peatlands on greenhouse gas emissions.
- (14) Land should not be converted for the production of biofuels if its carbon stock loss upon conversion could not, within a reasonable period, taking into account the urgency of tackling climate change, be compensated by the greenhouse gas savings resulting from the production of biofuels. This would prevent unnecessarily burdensome research by economic operators and the conversion of high carbon stock land that would prove to be ineligible for producing raw materials for biofuels. Inventories of worldwide carbon stocks indicate that wetlands and continuously forested areas with canopy cover of more than 30 % should be included in that category. Forested areas with a canopy cover of between 10 % and 30 % should also be included, unless there is evidence demonstrating that their carbon stock is sufficiently low to justify their conversion in accordance with the rules laid down in this Directive. The reference to wetlands should take into account the definition laid down in the Convention on Wetlands of International Importance, especially as Waterfowl Habitat, adopted on 2 February 1971 in Ramsar.
- (15) The incentives provided for in this Directive will encourage increased production of biofuels worldwide. Where biofuels are made from raw material produced within the Community, they should also comply with Community environmental requirements for agriculture, including requirements for the protection of the quality of groundwater and surface water, and with social requirements. However, there is a concern that production of biofuels in certain third countries might not respect minimum environmental or social requirements. It is therefore appropriate to encourage the development of multilateral and bilateral agreements and voluntary international or national schemes that cover key environmental and social considerations, in order to promote the production of biofuels worldwide in a sustainable manner. In the absence of such agreements or schemes, Member States should require economic operators to report on those issues.
- (16) Sustainability criteria will be effective only if they lead to changes in the behaviour of market actors. Those changes will occur only if biofuels meeting those criteria command a price premium compared to those that do not. According to the mass balance method of verifying compliance, there is a physical link between the production of biofuels meeting the sustainability criteria and the consumption of biofuels in the Community, providing an appropriate balance between supply and demand and ensuring a price premium that is greater than in systems where there is no such link. To ensure that biofuels meeting the sustainability criteria can be sold at a higher price, the mass balance method should therefore be used to verify compliance. This should maintain the integrity of the system while at the same time avoiding the imposition of an unreasonable burden on industry. Other verification methods should, however, be reviewed.
- (17) Where appropriate, the Commission should take due account of the Millennium Ecosystem Assessment which contains useful data for the conservation of at least those areas that provide, in critical situations, basic ecosystem services such as watershed protection and erosion control.
- (18) Co-products from the production and use of fuels should be taken into account in the calculation of greenhouse gas emissions. The substitution method is appropriate for the purposes of policy analysis but not for the regulation of individual economic operators and individual consignments of transport fuels. In these cases the energy allocation method is the most appropriate method, as it is easy to apply, is predictable over time, minimises counter-productive incentives and produces results that are generally comparable with those produced by the substitution method. For the purposes of policy analysis the Commission should also, in its reporting, present results using the substitution method.
- (19) In order to avoid a disproportionate administrative burden, a list of default values should be laid down for common biofuel production pathways and that list should be updated and expanded when further reliable data is available. Economic operators should always be entitled to claim the level of greenhouse gas savings for biofuels established by that list. Where the default value for greenhouse gas savings from a production pathway lies below the required minimum level of greenhouse gas savings, producers wishing to demonstrate their compliance with this minimum level should be required to show that actual emissions from their production process are lower than those that were assumed in the calculation of the default values.
- (20) It is appropriate for the data used in the calculation of the default values to be obtained from independent, scientifically expert sources and to be updated as appropriate as those sources progress their work. The Commission should encourage those sources to address, when they update their work, emissions from cultivation, the effect of regional and climatological conditions, the effects of cultivation using sustainable agricultural and organic farming methods, and the scientific contribution of producers, within the Community and in third countries, and civil society.

- (21) In order to avoid encouraging the cultivation of raw materials for biofuels in places where this would lead to high greenhouse gas emissions, the use of default values for cultivation should be limited to regions where such an effect can reliably be excluded. However, to avoid a disproportionate administrative burden, it is appropriate for Member States to establish national or regional averages for emissions from cultivation, including from fertiliser use.
- (22) Global demand for agricultural commodities is growing. Part of this increased demand will be met through an increase in the amount of land devoted to agriculture. The restoration of land that has been severely degraded or heavily contaminated and therefore cannot be used, in its present state, for agricultural purposes is a way of increasing the amount of land available for cultivation. The sustainability scheme should promote the use of restored degraded land, because the promotion of biofuels will contribute to the growth in demand for agricultural commodities. Even if biofuels themselves are made using raw materials from land already in arable use, the net increase in demand for crops caused by the promotion of biofuels could lead to a net increase in the cropped area. This could affect high carbon stock land, which would result in damaging carbon stock losses. To alleviate this risk, it is appropriate to introduce accompanying measures to encourage an increased rate of productivity on land already used for crops, the use of degraded land, and the adoption of sustainability requirements, comparable to those laid down in this Directive for Community biofuel consumption, in other biofuel-consuming countries. The Commission should develop a concrete methodology to minimise greenhouse gas emissions caused by indirect land use changes. To this end, the Commission should analyse, on the basis of best available scientific evidence, in particular, the inclusion of a factor for indirect land use changes in the calculation of greenhouse gas emissions, and the need to incentivise sustainable biofuels which minimise the impact of land use change and improve biofuel sustainability with respect to indirect land use change. In developing this methodology, the Commission should address, *inter alia*, the potential indirect land use changes resulting from biofuels produced from non-food cellulosic material and from ligno-cellulosic material.
- (23) Since the measures provided for in Articles 7b to 7e of Directive 98/70/EC also promote the functioning of the internal market, by harmonising sustainability criteria for biofuels for target accounting purposes under that Directive, and thus facilitate, in accordance with Article 7b(8) of that Directive, trade between Member States in biofuels which comply with these conditions, they are based on Article 95 of the Treaty.
- (24) Continuing technical progress in the fields of automotive and fuel technology coupled with the continuing desire to ensure that the level of environmental and health protection is optimised necessitate periodic review of the fuel specifications based upon further studies and analyses of the impact of additives and biofuel components on pollutant emissions. Therefore, the possibility of facilitating the decarbonisation of transport fuels should be regularly reported upon.
- (25) Detergent use can contribute to the maintenance of clean engines and therefore the reduction of pollutant emissions. At present there is no satisfactory way of testing fuel samples for their detergency properties. Therefore the responsibility for informing their customers of the benefits of detergents and their use rests with suppliers of fuel and vehicles. Nevertheless, the Commission should review whether further developments would result in a more effective approach to optimising the use of and benefits from detergents.
- (26) Provisions concerning the blending of ethanol into petrol should be reviewed on the basis of experience gained from the application of Directive 98/70/EC. The review should examine in particular the provisions concerning limits on vapour pressure and possible alternatives for ensuring that ethanol blends do not exceed acceptable vapour pressure limits.
- (27) Blending ethanol into petrol increases the vapour pressure of the resulting fuel. Moreover petrol vapour pressure should be controlled to limit air pollutant emissions.
- (28) Blending ethanol into petrol results in a non-linear change of the vapour pressure of the resulting fuel mixture. It is appropriate to provide for the possibility of a derogation from the maximum summer vapour pressure for such mixtures after an appropriate assessment by the Commission. A derogation should be conditional on compliance with Community legislation on air quality and air pollution. Such a derogation should correspond to the actual increase in vapour pressure that results from adding a given percentage of ethanol to petrol.
- (29) In order to encourage the use of low-carbon fuels while respecting air pollution targets, petrol refiners should, where possible, make available low vapour pressure petrol in the volumes required. As this is not the case at present, the vapour pressure limit for ethanol blends should be increased, subject to certain conditions, in order to allow the biofuels market to develop.



- (30) Some older vehicles are not warranted to use petrol with a high biofuel content. These vehicles may travel from one Member State to another. It is therefore appropriate to ensure for a transitional period, the continued supply of petrol suitable for these older vehicles. Member States should in consultation with stakeholders, ensure an appropriate geographical coverage reflecting the demand for such petrol. The marking of petrol, for example as E5 or E10, should be consistent with the relevant standard drawn up by the European Committee for Standardisation (CEN).
- (31) It is appropriate to adapt Annex IV to Directive 98/70/EC to enable the placing on the market of diesel fuels with a higher biofuel content (B7) than envisaged in standard EN 590:2004 (B5). This standard should be updated accordingly and should establish limits for technical parameters not included in that Annex, such as oxidation stability, flash point, carbon residue, ash content, water content, total contamination, copper strip corrosion, lubricity, kinematic viscosity, cloud point, cold filter plugging point, phosphorous content, acid index, peroxides, acid index variation, injector fouling and addition of additives for stability.
- (32) In order to facilitate the effective marketing of biofuels, CEN is encouraged to continue working rapidly on a standard allowing the blending of higher levels of biofuel components into diesel and, in particular, to develop a standard for 'B10'.
- (33) A limit for the fatty acid methyl ester (FAME) content of diesel is required for technical reasons. However, such a limit is not required for other biofuel components, such as pure diesel-like hydrocarbons made from biomass using the Fischer-Tropsch process or hydro-treated vegetable oil.
- (34) Member States and the Commission should take appropriate steps to facilitate the placing on the market of gasoil containing 10 ppm sulphur earlier than 1 January 2011.
- (35) The use of specific metallic additives, and in particular the use of methylcyclopentadienyl manganese tricarbonyl (MMT), might raise the risk of damage to human health and might cause damage to vehicle engines and emission control equipment. Many vehicle manufacturers advise against the use of fuel containing metallic additives and the use of such fuel may invalidate vehicle warranties. It is therefore appropriate to keep under constant review the effects of the use of the MMT in fuel in consultation with all relevant stakeholders. Pending further review it is necessary to take steps to limit the severity of any damage that may be caused. It is therefore appropriate to set an upper limit on the use of MMT in fuel, based upon currently available scientific knowledge. This limit should be revised upwards only if the use of higher dosage rates can be demonstrated not to cause adverse effects. To avoid consumers unknowingly invalidating their vehicles' warranties, it is also necessary to require the labelling of any fuel that contains metallic additives.
- (36) In accordance with point 34 of the Interinstitutional agreement on better law making <sup>(1)</sup>, Member States are encouraged to draw up, for themselves and in the interests of the Community, their own tables, which will, as far as possible, illustrate the correlation between this Directive and the transposition measures and to make those tables public.
- (37) The measures necessary for the implementation of Directive 98/70/EC should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission <sup>(2)</sup>.
- (38) In particular, the Commission should be empowered to adopt implementing measures concerning the mechanism to monitor and reduce greenhouse gas emissions, to adapt the methodological principles and values necessary for assessing whether sustainability criteria have been fulfilled in relation to biofuels, to establish criteria and geographic ranges for highly biodiverse grassland, to revise the limit for the MMT content of fuel and to adapt to technical and scientific progress the methodology for the calculation of lifecycle greenhouse gas emissions, the permitted analytical methods related to the fuel specifications and the vapour pressure waiver permitted for petrol containing bioethanol. Since those measures are of general scope and are designed to amend non-essential elements of this Directive by the adaptation of the methodological principles and values, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.
- (39) Directive 98/70/EC provides for a number of fuel specifications some of which are now redundant. In addition, it contains a number of derogations that have expired. For reasons of clarity it is therefore appropriate to delete these provisions.
- (40) Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels <sup>(3)</sup> lays down some aspects of fuel use in inland waterway transport. The delimitation between that Directive and Directive 98/70/EC requires clarification. Both Directives establish limits for the maximum sulphur content of gas-oil used in inland waterway vessels. In the interest of clarity and legal certainty, it is therefore, appropriate to adjust those Directives, so that only one act lays down this limit.
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- <sup>(1)</sup> OJ C 321, 31.12.2003, p. 1.  
<sup>(2)</sup> OJ L 184, 17.7.1999, p. 23.  
<sup>(3)</sup> OJ L 121, 11.5.1999, p. 13.

- (41) New, cleaner engine technologies have been developed for inland waterway vessels. These engines can only be fuelled with very low-sulphur fuel. The sulphur content of inland waterway vessel fuels should be reduced as soon as possible.
- (42) Directive 98/70/EC and Directive 1999/32/EC should therefore be amended accordingly.
- (43) Council Directive 93/12/EEC of 23 March 1993 relating to the sulphur content of certain liquid fuels <sup>(1)</sup> has been extensively amended over time and as a result no longer retains any elements of substance. It should therefore be repealed.
- (44) Since the objectives of this Directive, namely ensuring a single market for fuel for road transport and non-road mobile machinery and ensuring respect for minimum levels of environmental protection from use of this fuel cannot be sufficiently achieved by the Member States and can therefore, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives,

HAVE ADOPTED THIS DIRECTIVE:

#### Article 1

#### Amendments to Directive 98/70/EC

Directive 98/70/EC is hereby amended as follows:

1. Article 1 shall be replaced by the following:

##### *'Article 1*

##### **Scope**

This Directive sets, in respect of road vehicles, and non-road mobile machinery (including inland waterway vessels when not at sea), agricultural and forestry tractors, and recreational craft when not at sea:

- (a) technical specifications on health and environmental grounds for fuels to be used with positive ignition and compression-ignition engines, taking account of the technical requirements of those engines; and
- (b) a target for the reduction of life cycle greenhouse gas emissions.;

<sup>(1)</sup> OJ L 74, 27.3.1993, p. 81.

2. Article 2 shall be amended as follows:

- (a) in the first paragraph:

- (i) point 3 shall be replaced by the following:

'3. "gas oils intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors, and recreational craft" means any petroleum-derived liquid, falling within CN codes 2710 19 41 and 2710 19 45 (\*), intended for use in compression ignition engines referred to in Directives 94/25/EC (\*\*), 97/68/EC (\*\*\*) and 2000/25/EC (\*\*\*\*);

(\*) The numbering of these CN codes as specified in the Common Customs Tariff (OJ L 256, 7.6.1987, p. 1).

(\*\*) OJ L 164, 30.6.1994, p. 15.

(\*\*\*) OJ L 59, 27.2.1998, p. 1.

(\*\*\*\*) OJ L 173, 12.7.2000, p. 1.;

- (ii) the following points shall be added:

'5. "Member States with low ambient summer temperatures" means Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Sweden and the United Kingdom;

6. "life cycle greenhouse gas emissions" means all net emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O that can be assigned to the fuel (including any blended components) or energy supplied. This includes all relevant stages from extraction or cultivation, including land-use changes, transport and distribution, processing and combustion, irrespective of where those emissions occur;

7. "greenhouse gas emissions per unit of energy" means the total mass of CO<sub>2</sub> equivalent greenhouse gas emissions associated with the fuel or energy supplied, divided by the total energy content of the fuel or energy supplied (for fuel, expressed as its low heating value);

8. "supplier" means the entity responsible for passing fuel or energy through an excise duty point or, if no excise is due, any other relevant entity designated by a Member State;

9. "biofuels" has the same meaning as in Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (\*).

(\*) OJ L 140, 5.6.2009, p. 16.;

- (b) the second paragraph shall be deleted;

3. Article 3 shall be amended as follows:

(a) paragraphs 2 to 6 shall be replaced by the following:

‘2. Member States shall ensure that petrol may be placed on the market within their territory only if it complies with the environmental specifications set out in Annex I.

However, Member States may, for the outermost regions, make specific provisions for the introduction of petrol with a maximum sulphur content of 10 mg/kg. Member States making use of this provision shall inform the Commission accordingly.

3. Member States shall require suppliers to ensure the placing on the market of petrol with a maximum oxygen content of 2,7 % and a maximum ethanol content of 5 % until 2013 and may require the placing on the market of such petrol for a longer period if they consider it necessary. They shall ensure the provision of appropriate information to consumers concerning the biofuel content of petrol and, in particular, on the appropriate use of different blends of petrol.

4. Member States with low ambient summer temperatures may, subject to paragraph 5, permit the placing on the market during the summer period of petrol with a maximum vapour pressure of 70 kPa.

Member States in which the derogation referred to in the first subparagraph is not applied may, subject to paragraph 5, permit the placing on the market during the summer period of petrol containing ethanol with a maximum vapour pressure of 60 kPa and in addition the permitted vapour pressure waiver specified in Annex III, on condition that the ethanol used is a biofuel.

5. Where Member States wish to apply either of the derogations provided for in paragraph 4, they shall notify the Commission and provide all relevant information. The Commission shall assess the desirability and duration of the derogation, taking account of both:

- (a) the avoidance of socioeconomic problems resulting from higher vapour pressure, including time-limited technical adaptation needs; and
- (b) the environmental or health consequences of the higher vapour pressure and, in particular, the impact on compliance with Community legislation on air quality, both in the Member State concerned and in other Member States.

If the Commission's assessment shows that the derogation will result in a lack of compliance with Community legislation on air quality or air pollution, including the

relevant limit values and emissions ceilings, the application shall be rejected. The Commission should also take account of relevant target values.

Where the Commission has raised no objections within six months of receipt of all relevant information, the Member State concerned may apply the requested derogation.

6. Notwithstanding paragraph 1, Member States may continue to permit the marketing of small quantities of leaded petrol, with a lead content not exceeding 0,15 g/l, to a maximum of 0,03 % of total sales, to be used by old vehicles of a characteristic nature and to be distributed through special interest groups.’

(b) paragraph 7 shall be deleted;

4. Article 4 shall be replaced by the following:

*‘Article 4*

**Diesel fuel**

1. Member States shall ensure that diesel fuel may be placed on the market in their territory only if it complies with the specifications set out in Annex II.

Notwithstanding the requirements of Annex II, Member States may permit the placing on the market of diesel with a fatty acid methyl ester (FAME) content greater than 7 %.

Member States shall ensure the provision of appropriate information to consumers concerning the biofuel, in particular FAME, content of diesel fuel.

2. Member States shall ensure that, no later than from 1 January 2008, gas oils intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors and recreational craft may be placed on the market within their territory only if the sulphur content of those gas oils does not exceed 1 000 mg/kg. From 1 January 2011, the maximum permissible sulphur content of those gas oils shall be 10 mg/kg. Member States shall ensure that liquid fuels other than those gas oils may be used in inland waterway vessels and recreational craft only if the sulphur content of those liquid fuels does not exceed the maximum permissible content of those gas oils.

However, in order to accommodate minor contamination in the supply chain, Member States may, from 1 January 2011, permit gas oil intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors and recreational craft to contain up to 20 mg/kg of sulphur at the point of final distribution to end users. Member States may also permit the continued placing on the market until 31 December 2011 of gas oil containing up to 1 000 mg/kg sulphur for rail vehicles and agricultural and forestry tractors, provided that they can ensure that the proper functioning of emissions control systems will not be compromised.

3. Member States may, for the outermost regions, make specific provision for the introduction of diesel fuel and gas oils with a maximum sulphur content of 10 mg/kg. Member States making use of this provision shall inform the Commission accordingly.

4. For Member States with severe winter weather, the maximum distillation point of 65 % at 250 °C for diesel fuels and gas oils may be replaced by a maximum distillation point of 10 % (vol/vol) at 180 °C.;

5. the following Article shall be inserted:

*'Article 7a*

### **Greenhouse gas emission reductions**

1. Member States shall designate the supplier or suppliers responsible for monitoring and reporting life cycle greenhouse gas emissions per unit of energy from fuel and energy supplied. In the case of providers of electricity for use in road vehicles, Member States shall ensure that such providers may choose to become a contributor to the reduction obligation laid down in paragraph 2 if they can demonstrate that they can adequately measure and monitor electricity supplied for use in those vehicles.

With effect from 1 January 2011, suppliers shall report annually, to the authority designated by the Member State, on the greenhouse gas intensity of fuel and energy supplied within each Member State by providing, as a minimum, the following information:

- (a) the total volume of each type of fuel or energy supplied, indicating where purchased and its origin; and
- (b) life cycle greenhouse gas emissions per unit of energy.

Member States shall ensure that reports are subject to verification.

The Commission shall, where appropriate, establish guidelines for the implementation of this paragraph.

2. Member States shall require suppliers to reduce as gradually as possible life cycle greenhouse gas emissions per unit of energy from fuel and energy supplied by up to 10 % by 31 December 2020, compared with the fuel baseline standard referred to in paragraph 5(b). This reduction shall consist of:

- (a) 6 % by 31 December 2020. Member States may require suppliers, for this reduction, to comply with the following intermediate targets: 2 % by 31 December 2014 and 4 % by 31 December 2017;

(b) an indicative additional target of 2 % by 31 December 2020, subject to Article 9(1)(h), to be achieved through one or both of the following methods:

- (i) the supply of energy for transport supplied for use in any type of road vehicle, non-road mobile machinery (including inland waterway vessels), agricultural or forestry tractor or recreational craft;
- (ii) the use of any technology (including carbon capture and storage) capable of reducing life cycle greenhouse gas emissions per unit of energy from fuel or energy supplied;

(c) an indicative additional target of 2 % by 31 December 2020, subject to Article 9(1)(i), to be achieved through the use of credits purchased through the Clean Development Mechanism of the Kyoto Protocol, under the conditions set out in Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community (\*), for reductions in the fuel supply sector.

3. Life cycle greenhouse gas emissions from biofuels shall be calculated in accordance with Article 7d. Lifecycle greenhouse gas emissions from other fuels and energy shall be calculated using a methodology laid down in accordance with paragraph 5 of this Article.

4. Member States shall ensure that a group of suppliers may choose to meet the reduction obligations pursuant to paragraph 2 jointly. In such case they shall be considered as a single supplier for the purposes of paragraph 2.

5. Measures necessary for the implementation of this Article, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4). Such measures include, in particular:

- (a) the methodology for the calculation of life cycle greenhouse gas emissions from fuels other than biofuels and from energy;
- (b) the methodology specifying, before 1 January 2011, the fuel baseline standard based on the life cycle greenhouse gas emissions per unit of energy from fossil fuels in 2010 for the purposes of paragraph 2;
- (c) any necessary rules to give effect to paragraph 4;
- (d) the methodology to calculate the contribution of electric road vehicles, which shall be compatible with Article 3(4) of Directive 2009/28/EC.

(\*) OJ L 275, 25.10.2003, p. 32.;



6. the following Articles shall be inserted:

*'Article 7b*

**Sustainability criteria for biofuels**

1. Irrespective of whether the raw materials were cultivated inside or outside the territory of the Community, energy from biofuels shall be taken into account for the purposes of Article 7a only if they fulfil the sustainability criteria set out in paragraphs 2 to 6 of this Article.

However, biofuels produced from waste and residues, other than agricultural, aquaculture, fisheries and forestry residues, need only fulfil the sustainability criteria set out in paragraph 2 of this Article in order to be taken into account for the purposes referred to in Article 7a.

2. The greenhouse gas emission saving from the use of biofuels taken into account for the purposes referred to in paragraph 1 shall be at least 35 %.

With effect from 1 January 2017, the greenhouse gas emission saving from the use of biofuels taken into account for the purposes referred to in paragraph 1 shall be at least 50 %. From 1 January 2018 that greenhouse gas emissions saving shall be at least 60 % for biofuels produced in installations in which production has started on or after 1 January 2017.

The greenhouse gas emission saving from the use of biofuels shall be calculated in accordance with Article 7d(1).

In the case of biofuels produced by installations that were in operation on 23 January 2008, the first subparagraph shall apply from 1 April 2013.

3. Biofuels taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land with high biodiversity value, namely, land that had one of the following statuses in or after January 2008, whether or not the land continues to have such a status:

(a) primary forest and other wooded land, that is forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed;

(b) areas designated:

(i) by law or by the relevant competent authority for nature protection purposes; or

(ii) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by inter-governmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 7c(4);

unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

(c) highly biodiverse grassland that is:

(i) natural, namely, grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or

(ii) non-natural, namely, grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.

The Commission shall establish the criteria and geographic ranges to determine which grassland shall be covered by point (c) of the first subparagraph. Those measures, designed to amend non-essential elements of this Directive, by supplementing it shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).

4. Biofuels taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land with high carbon stock, namely, land that had one of the following statuses in January 2008 and no longer has that status:

(a) wetlands, namely, land that is covered with or saturated by water permanently or for a significant part of the year;

(b) continuously forested areas, namely, land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds *in situ*;

(c) land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds *in situ*, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in Part C of Annex IV is applied, the conditions laid down in paragraph 2 of this Article would be fulfilled.

The provisions of this paragraph shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008.

5. Biofuels taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.

6. Agricultural raw materials cultivated in the Community and used for the production of biofuels taken into account for the purposes referred to in Article 7a shall be obtained in accordance with the requirements and standards under the provisions referred to under the heading "Environment" in Part A and in point 9 of Annex II to Council Regulation (EC) No 73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers (\*) and in accordance with the minimum requirements for good agricultural and environmental condition defined pursuant to Article 6(1) of that Regulation.

7. The Commission shall, every two years, report to the European Parliament and the Council, in respect of both third countries and Member States that are a significant source of biofuels or of raw material for biofuels consumed within the Community, on national measures taken to respect the sustainability criteria set out in paragraphs 2 to 5 and for soil, water and air protection. The first report shall be submitted in 2012.

The Commission shall, every two years, report to the European Parliament and the Council on the impact on social sustainability in the Community and in third countries of increased demand for biofuel, on the impact of Community biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and on wider development issues. Reports shall address the respect of land use rights. They shall state, both for third countries and Member States that are a significant source of raw material for biofuel consumed within the Community, whether the country has ratified and implemented each of the following Conventions of the International Labour Organisation:

- Convention concerning Forced or Compulsory Labour (No 29),
- Convention concerning Freedom of Association and Protection of the Right to Organise (No 87),
- Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively (No 98),
- Convention concerning Equal Remuneration of Men and Women Workers for Work of Equal Value (No 100),
- Convention concerning the Abolition of Forced Labour (No 105),

- Convention concerning Discrimination in Respect of Employment and Occupation (No 111),
- Convention concerning Minimum Age for Admission to Employment (No 138),
- Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (No 182).

Those reports shall state, both for third countries and Member States that are a significant source of raw material for biofuel consumed within the Community, whether the country has ratified and implemented:

- the Cartagena Protocol on biosafety,
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The first report shall be submitted in 2012. The Commission shall, if appropriate, propose corrective action, in particular if evidence shows that biofuel production has a significant impact on food prices.

8. For the purposes referred to in paragraph 1, Member States shall not refuse to take into account, on other sustainability grounds, biofuels obtained in compliance with this Article.

#### Article 7c

#### **Verification of compliance with the sustainability criteria for biofuels**

1. Where biofuels are to be taken into account for the purposes of Article 7a, Member States shall require economic operators to show that the sustainability criteria set out in Article 7b(2) to (5) have been fulfilled. For that purpose they shall require economic operators to use a mass balance system which:

- (a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed;
- (b) requires information about the sustainability characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and
- (c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.

2. The Commission shall report to the European Parliament and the Council in 2010 and 2012 on the operation of the mass balance verification method described in paragraph 1 and on the potential for allowing for other verification methods in relation to some or all types of raw material or biofuels. In its assessment the Commission shall consider those verification methods in which information about sustainability characteristics need not remain physically assigned to particular consignments or mixtures. The assessment shall take into account the need to maintain the integrity and effectiveness of the verification system while avoiding the imposition of an unreasonable burden on industry. The report shall be accompanied, where appropriate, by proposals to the European Parliament and the Council, concerning the use of other verification methods.

3. Member States shall take measures to ensure that economic operators submit reliable information and make available to the Member State, on request, the data that were used to develop the information. Member States shall require economic operators to arrange for an adequate standard of independent auditing of the information submitted, and to provide evidence that this has been done. The auditing shall verify that the systems used by economic operators are accurate, reliable and protected against fraud. It shall evaluate the frequency and methodology of sampling and the robustness of the data.

The information referred to in the first subparagraph shall include in particular information on compliance with the sustainability criteria set out in Article 7b(2) to (5), appropriate and relevant information on measures taken for soil, water and air protection, the restoration of degraded land, the avoidance of excessive water consumption in areas where water is scarce, and appropriate and relevant information concerning measures taken in order to take into account the issues referred to in the second subparagraph of Article 7b(7).

The Commission shall, in accordance with the advisory procedure referred to in Article 11(3), establish the list of appropriate and relevant information referred to in the first two subparagraphs. It shall ensure, in particular, that the provision of that information does not represent an excessive administrative burden for operators in general or for small-holder farmers, producer organisations and cooperatives in particular.

The obligations laid down in this paragraph shall apply whether the biofuels are produced within the Community or imported.

Member States shall submit to the Commission in aggregated form, the information referred to in the first subparagraph. The Commission shall publish that information on the transparency platform referred to in Article 24 of Directive 2009/28/EC in summary form preserving the confidentiality of commercially sensitive information.

4. The Community shall endeavour to conclude bilateral or multilateral agreements with third countries containing provisions on sustainability criteria that correspond to those in this Directive. Where the Community has concluded agreements containing provisions relating to matters covered by the sustainability criteria set out in Article 7b(2) to (5), the Commission may decide that those agreements demonstrate that biofuels produced from raw materials cultivated in those countries comply with the sustainability criteria in question. When those agreements are concluded, due consideration shall be given to measures taken for the conservation of areas that provide, in critical situations, basic ecosystem services (such as watershed protection and erosion control), for soil, water and air protection, indirect land-use changes, the restoration of degraded land, the avoidance of excessive water consumption in areas where water is scarce and to the issues referred to in the second subparagraph of Article 7b(7).

The Commission may decide that voluntary national or international schemes setting standards for the production of biomass products contain accurate data for the purposes of Article 7b(2) or demonstrate that consignments of biofuel comply with the sustainability criteria set out in Article 7b(3) to (5). The Commission may decide that those schemes contain accurate data for the purposes of information on measures taken for the conservation of areas that provide, in critical situations, basic ecosystem services (such as watershed protection and erosion control), for soil, water and air protection, the restoration of degraded land, the avoidance of excessive water consumption in areas where water is scarce and on the issues referred to in the second subparagraph of Article 7b(7). The Commission may also recognise areas for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature for the purposes of Article 7b(3)(b)(ii).

The Commission may decide that voluntary national or international schemes to measure greenhouse gas savings contain accurate data for the purposes of Article 7b(2).

The Commission may decide that land that falls within the scope of a national or regional recovery programme aimed at improving severely degraded or heavily contaminated land fulfils the criteria referred to in point 9 of Part C of Annex IV.

5. The Commission shall adopt decisions under paragraph 4 only if the agreement or scheme in question meets adequate standards of reliability, transparency and independent auditing. Schemes to measure greenhouse gas savings shall also comply with the methodological requirements in Annex IV. Lists of areas of high biodiversity value as referred

to in Article 7b(3)(b)(ii) shall meet adequate standards of objectivity and coherence with internationally recognised standards and provide for appropriate appeal procedures.

6. Decisions under paragraph 4 shall be adopted in accordance with the advisory procedure referred to in Article 11(3). Such decisions shall be valid for a period of no more than five years.

7. When an economic operator provides proof or data obtained in accordance with an agreement or scheme that has been the subject of a decision under paragraph 4, to the extent covered by that decision, a Member State shall not require the supplier to provide further evidence of compliance with the sustainability criteria set out in Article 7b(2) to (5) nor information on measures referred to in the second subparagraph of paragraph 3 of this Article.

8. At the request of a Member State or on its own initiative the Commission shall examine the application of Article 7b in relation to a source of biofuel and, within six months of receipt of a request and in accordance with the advisory procedure referred to in Article 11(3), decide whether the Member State concerned may take biofuel from that source into account for the purposes of Article 7a.

9. By 31 December 2012, the Commission shall report to the European Parliament and to the Council on:

- (a) the effectiveness of the system in place for the provision of information on sustainability criteria; and
- (b) whether it is feasible and appropriate to introduce mandatory requirements in relation to air, soil or water protection, taking into account the latest scientific evidence and the Community's international obligations.

The Commission shall, if appropriate, propose corrective action.

#### Article 7d

#### Calculation of life cycle greenhouse gas emissions from biofuels

1. For the purposes of Article 7a and Article 7b(2), life cycle greenhouse gas emissions from biofuels shall be calculated as follows:

- (a) where a default value for greenhouse gas emission savings for the biofuel production pathway is laid down in Part A or B of Annex IV and where the  $e_f$  value for those biofuels calculated in accordance with point 7 of Part C of Annex IV is equal to or less than zero, by using that default value;
- (b) by using an actual value calculated in accordance with the methodology laid down in Part C of Annex IV; or

- (c) by using a value calculated as the sum of the factors of the formula referred to in point 1 of Part C of Annex IV, where disaggregated default values in Part D or E of Annex IV may be used for some factors, and actual values, calculated in accordance with the methodology laid down in Part C of Annex IV, for all other factors.

2. By 31 March 2010, Member States shall submit to the Commission a report, including a list of those areas on their territory classified as level 2 in the nomenclature of territorial units for statistics (NUTS) or as a more disaggregated NUTS level in accordance with Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS) (\*\*), where the typical greenhouse gas emissions from cultivation of agricultural raw materials can be expected to be lower than or equal to the emissions reported under the heading "Disaggregated default values for cultivation" in Part D of Annex IV to this Directive, accompanied by a description of the method and data used to establish that list. That method shall take into account soil characteristics, climate and expected raw material yields.

3. The default values in Part A of Annex IV, and the disaggregated default values for cultivation in Part D of Annex IV, may be used only when their raw materials are:

- (a) cultivated outside the Community;
- (b) cultivated in the Community in areas included in the lists referred to in paragraph 2; or
- (c) waste or residues other than agricultural, aquaculture and fisheries residues.

For biofuels not falling under points (a), (b) or (c), actual values for cultivation shall be used.

4. By 31 March 2010, the Commission shall submit a report to the European Parliament and to the Council on the feasibility of drawing up lists of areas in third countries where the typical greenhouse gas emissions from cultivation of agricultural raw materials can be expected to be lower than or equal to the emissions reported under the heading "cultivation" in Part D of Annex IV, accompanied if possible by such lists and a description of the method and data used to establish them. The report shall, if appropriate, be accompanied by relevant proposals.

5. The Commission shall report by 31 December 2012 at the latest, and every two years thereafter, on the estimated typical and default values in Parts B and E of Annex IV, paying special attention to emissions from transport and processing and may, where necessary, decide to correct the values. Those measures, designed to amend non-essential elements of this Directive shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).



6. The Commission shall, by 31 December 2010, submit a report to the European Parliament and to the Council reviewing the impact of indirect land use change on greenhouse gas emissions and addressing ways to minimise that impact. The report shall, if appropriate, be accompanied by a proposal, based on the best available scientific evidence, containing a concrete methodology for emissions from carbon stock changes caused by indirect land use changes, ensuring compliance with this Directive, in particular Article 7b(2).

Such a proposal shall include the necessary safeguards to provide certainty for investment, undertaken before that methodology is applied. With respect to installations that produced biofuels before the end of 2013, the application of the measures referred to in the first subparagraph shall not, until 31 December 2017, lead to biofuels produced by these installations being deemed to have failed to comply with the sustainability requirements of this Directive if they would otherwise have done so, provided that those biofuels achieve a greenhouse gas saving of at least 45 %. This shall apply to the capacities of the installations of biofuels at the end of 2012.

The European Parliament and the Council shall endeavour to decide by 31 December 2012 on any such proposals submitted by the Commission.

7. Annex IV may be adapted to technical and scientific progress, including by the addition of values for further biofuel production pathways for the same or for other raw materials and by modifying the methodology laid down in Part C. Those measures, designed to amend non-essential elements of this Directive, *inter alia*, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).

Regarding the default values and methodology laid down in Annex IV, particular consideration shall be paid to:

- the method of accounting for wastes and residues,
- the method of accounting for co-products,
- the method of accounting for cogeneration, and,
- the status given to agricultural crop residues as co-products.

The default values for waste vegetable or animal oil biodiesel shall be reviewed as soon as possible.

Any adaptation of or addition to the list of default values in Annex IV shall comply with the following:

- (a) where the contribution of a factor to overall emissions is small, or where there is limited variation, or where the cost or difficulty of establishing actual values is high, default values must be typical of normal production processes;

- (b) in all other cases default values must be conservative compared to normal production processes.

8. Detailed definitions, including technical specifications required for the categories set out in point 9 of Part C of Annex IV shall be established. Those measures, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).

#### Article 7e

#### Implementing measures and reports concerning the sustainability of biofuels

1. The implementing measures referred to in the second subparagraph of Article 7b(3), the third subparagraph of Article 7c(3), Article 7c(6), Article 7c(8), Article 7d(5), the first subparagraph of Article 7d(7) and Article 7d(8) shall also take full account of the purposes of Directive 2009/28/EC.

2. The reports by the Commission to the European Parliament and to the Council referred to in Article 7b(7), Article 7c(2), Article 7c(9), Article 7d(4) and (5) and the first subparagraph of Article 7d(6), as well as the reports and information submitted pursuant to in the first and fifth subparagraphs of Article 7c(3) and Article 7d(2), shall be prepared and transmitted for the purposes of both Directive 2009/28/EC and this Directive.

(\*) OJ L 30, 31.1.2009, p. 16.

(\*\*) OJ L 154, 21.6.2003, p. 1.;

- 7. in Article 8, paragraph 1 shall be replaced by the following:

‘1. Member States shall monitor compliance with the requirements of Articles 3 and 4, in respect of petrol and diesel fuels, on the basis of the analytical methods referred to in European standards EN 228:2004 and EN 590:2004 respectively.’;

- 8. the following Article shall be inserted:

#### Article 8a

#### Metallic additives

1. The Commission shall conduct an assessment of the risks for health and the environment from the use of metallic additives in fuel and, for this purpose, develop a test methodology. It shall report its conclusions to the European Parliament and to the Council by 31 December 2012.

2. Pending the development of the test methodology referred to in paragraph 1, the presence of the metallic additive methylcyclopentadienyl manganese tricarbonyl (MMT) in fuel shall be limited to 6 mg of manganese per litre from 1 January 2011. The limit shall be 2 mg of manganese per litre from 1 January 2014.

3. The limit for the MMT content of fuel specified in paragraph 2 shall be revised on the basis of the results of the assessment carried out using the test methodology referred to in paragraph 1. It may be reduced to zero where justified by the risk assessment. It cannot be increased unless justified by the risk assessment. Such a measure, designed to amend non-essential elements of this Directive shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).

4. Member States shall ensure that a label concerning the metallic additive content of fuel is displayed at any point where a fuel with metallic additives is made available to consumers.

5. The label shall contain the following text: "Contains metallic additives".

6. The label shall be attached to the place where information indicating the type of fuel is displayed, in a clearly visible position. The label shall be of a size and font that is clearly visible and easily legible.;

9. Article 9 shall be replaced by the following:

*'Article 9*

#### **Reporting**

1. The Commission shall submit by 31 December 2012, and every three years thereafter, a report to the European Parliament and the Council accompanied, where appropriate, by a proposal for amendments to this Directive. That report shall in particular take account of the following:

- (a) the use and evolution of automotive technology and, in particular, the feasibility of increasing the maximum permitted biofuel content of petrol and diesel and the need to review the date referred to in Article 3(3);
- (b) Community policy on CO<sub>2</sub> emissions from road transport vehicles;
- (c) the possibility of applying the requirements of Annex II, and in particular the limit value for polycyclic aromatic hydrocarbons, to non-road mobile machinery (including inland waterways vessels), agricultural and forestry tractors and recreational craft;
- (d) the increase in the use of detergents in fuels;
- (e) the use of metallic additives other than MMT in fuels;

(f) the total volume of components used in petrol and diesel having regard to Community environmental legislation, including the objectives of Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (\*) and its daughter directives;

(g) the consequences of the greenhouse gas reduction target set in Article 7a(2) for the emissions trading scheme;

(h) the potential need for adjustments to Articles 2(6), 2(7) and 7a(2)(b) in order to assess possible contributions for reaching a greenhouse gas reduction target of up to 10 % by 2020. These considerations shall be based on the potential for life cycle greenhouse gas emission reductions from fuels and energy within the Community, taking into account in particular any developments in environmentally safe carbon capture and storage technologies and in electric road vehicles, and the cost effectiveness of means of reducing those emissions, as referred to in Article 7a(2)(b);

(i) the possibility of introducing additional measures for suppliers to reduce by 2 % life cycle greenhouse gas emissions per unit of energy, in comparison with the fuel baseline standard referred to in Article 7a(5)(b), through the use of credits purchased through the Clean Development Mechanism of the Kyoto Protocol under the conditions set out in Directive 2003/87/EC, in order to assess further possible contributions for reaching a greenhouse gas reduction target of up to 10 % by 2020, as referred to in Article 7a(2)(c) of this Directive;

(j) an updated cost-benefit and impact analysis of a reduction in the maximum permitted vapour pressure for petrol for the summer period below 60 kPa.

2. At the latest in 2014, the Commission shall submit a report to the European Parliament and the Council relating to the achievement of the greenhouse gas emission target for 2020 referred to in Article 7a, taking into account the need for consistency between this target and the target referred to in Article 3(3) of Directive 2009/28/EC, concerning the share of energy from renewable sources in transport, in the light of the reports referred to in Articles 23(8) and 23(9) of that Directive.

The Commission shall, if appropriate, accompany its report by a proposal for modification of the target.

(\*) OJ L 327, 22.12.2000, p. 1.;

10. in Article 10, paragraph 1 shall be replaced by the following:

‘1. If the adaptation of the permitted analytical methods referred to in Annex I or II to technical progress is necessary, amendments, designed to amend non-essential elements of this Directive, may be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4). Annex III may also be adapted to technical and scientific progress. That measure, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(4).’;

11. Article 11 shall be replaced by the following:

‘Article 11

#### **Committee Procedure**

1. Except in the cases referred to in paragraph 2, the Commission shall be assisted by the Committee on Fuel Quality.

2. For matters relating to the sustainability of biofuels under Articles 7b, 7c and 7d, the Commission shall be assisted by the Committee on the Sustainability of Biofuels and Bioliquids referred to in Article 25(2) of Directive 2009/28/EC.

3. Where reference is made to this paragraph, Articles 3 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

4. Where reference is made to this paragraph, Articles 5a(1) to (4), and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.’;

12. Article 14 shall be deleted;

13. Annexes I, II, III and IV shall be replaced by the text appearing in the Annex to this Directive.

#### *Article 2*

#### **Amendments to Directive 1999/32/EC**

Directive 1999/32/EC is hereby amended as follows:

1. Article 2 shall be amended as follows:

(a) point 3 shall be replaced by the following:

‘3. marine fuel means any petroleum-derived liquid fuel intended for use or in use on board a vessel, including those fuels defined in ISO 8217. It includes any petroleum-derived liquid fuel in use on board inland waterway vessels or recreational craft, as defined in Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission

of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (\*) and Directive 94/25/EC of the European Parliament and of the Council of 16 June 1994 on the approximation of the laws, regulations and administrative provisions of the Member States relating to recreational craft (\*\*), when such vessels are at sea;

(\*) OJ L 59, 27.2.1998, p. 1.

(\*\*) OJ L 164, 30.6.1994, p. 15.’;

(b) point 3j shall be deleted;

2. Article 4b shall be amended as follows:

(a) the title shall be replaced by the following: ‘Maximum sulphur content of marine fuels used by ships at berth in Community ports’;

(b) in paragraph 1, point (a) shall be deleted;

(c) in paragraph 2, point (b) shall be deleted;

3. in Article 6, paragraph 1a, the third subparagraph shall be replaced by the following:

‘Sampling shall commence on the date on which the relevant limit for maximum sulphur content in the fuel comes into force. It shall be carried out with sufficient frequency, in sufficient quantities, and in such a way that the samples are representative of the fuel examined, and of the fuel being used by vessels while in relevant sea areas and ports.’.

#### *Article 3*

#### **Repeal**

Directive 93/12/EEC shall be repealed.

#### *Article 4*

#### **Transposition**

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 2010 at the latest.

They shall forthwith communicate to the Commission the text of those measures.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. The methods of making such reference shall be laid down by the Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

#### *Article 5*

#### **Entry into force**

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

*Article 6***Addressees**

This Directive is addressed to the Member States.

Done at Strasbourg, 23 April 2009.

*For the European Parliament*  
*The President*  
H.-G. PÖTTERING

*For the Council*  
*The President*  
P. NEČAS

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## ANNEX

## ‘ANNEX I

## ENVIRONMENTAL SPECIFICATIONS FOR MARKET FUELS TO BE USED FOR VEHICLES EQUIPPED WITH POSITIVE-IGNITION ENGINES

Type: **Petrol**

Parameter <sup>(1)</sup>	Unit	Limits <sup>(2)</sup>	
		Minimum	Maximum
Research octane number		95 <sup>(3)</sup>	—
Motor octane number		85	—
Vapour pressure, summer period <sup>(4)</sup>	kPa	—	60,0 <sup>(5)</sup>
Distillation:			
— percentage evaporated at 100 °C	% v/v	46,0	—
— percentage evaporated at 150 °C	% v/v	75,0	—
Hydrocarbon analysis:			
— olefins	% v/v	—	18,0
— aromatics	% v/v	—	35,0
— benzene	% v/v	—	1,0
Oxygen content	% m/m		3,7
Oxygenates			
— Methanol	% v/v		3,0
— Ethanol (stabilising agents may be necessary)	% v/v		10,0
— Iso-propyl alcohol	% v/v	—	12,0
— Tert-butyl alcohol	% v/v	—	15,0
— Iso-butyl alcohol	% v/v	—	15,0
— Ethers containing five or more carbon atoms per molecule	% v/v	—	22,0
— Other oxygenates <sup>(6)</sup>	% v/v	—	15,0
Sulphur content	mg/kg	—	10,0
Lead content	g/l	—	0,005

<sup>(1)</sup> Test methods shall be those specified in EN 228:2004. Member States may adopt the analytical method specified in replacement EN 228:2004 standard if it can be shown to give at least the same accuracy and at least the same level of precision as the analytical method it replaces.

<sup>(2)</sup> The values quoted in the specification are ‘true values’. In the establishment of their limit values, the terms of EN ISO 4259:2006 ‘Petroleum products — Determination and application of precision data in relation to methods of test’ have been applied and in fixing a minimum value, a minimum difference of 2R above zero has been taken into account (R = reproducibility). The results of individual measurements shall be interpreted on the basis of the criteria described in EN ISO 4259:2006.

<sup>(3)</sup> Member States may decide to continue to permit the placing on the market of unleaded regular grade petrol with a minimum motor octane number (MON) of 81 and a minimum research octane number (RON) of 91.

<sup>(4)</sup> The summer period shall begin no later than 1 May and shall not end before 30 September. For Member States with low ambient summer temperatures the summer period shall begin no later than 1 June and shall not end before 31 August.

<sup>(5)</sup> In the case of Member States with low ambient summer temperatures and for which a derogation is in effect in accordance with Article 3(4) and (5), the maximum vapour pressure shall be 70 kPa. In the case of Member States for which a derogation is in effect in accordance with Article 3(4) and (5) for petrol containing ethanol, the maximum vapour pressure shall be 60 kPa plus the vapour pressure waiver specified in Annex III.

<sup>(6)</sup> Other mono-alcohols and ethers with a final boiling point no higher than that stated in EN 228:2004.

## ANNEX II

**ENVIRONMENTAL SPECIFICATIONS FOR MARKET FUELS TO BE USED FOR VEHICLES EQUIPPED WITH  
COMPRESSION IGNITION ENGINES**

Type: **Diesel**

Parameter <sup>(1)</sup>	Unit	Limits <sup>(2)</sup>	
		Minimum	Maximum
Cetane number		51,0	—
Density at 15 °C	kg/m <sup>(3)</sup>	—	845,0
Distillation:			
— 95 % v/v recovered at:	°C	—	360,0
Polycyclic aromatic hydrocarbons	% m/m	—	8,0
Sulphur content	mg/kg	—	10,0
FAME content — EN 14078	% v/v	—	7,0 <sup>(3)</sup>

<sup>(1)</sup> Test methods shall be those specified in EN 590:2004. Member States may adopt the analytical method specified in replacement EN 590:2004 standard if it can be shown to give at least the same accuracy and at least the same level of precision as the analytical method it replaces.

<sup>(2)</sup> The values quoted in the specification are 'true values'. In the establishment of their limit values, the terms of EN ISO 4259:2006 'Petroleum products — Determination and application of precision data in relation to methods of test' have been applied and in fixing a minimum value, a minimum difference of 2R above zero has been taken into account (R = reproducibility). The results of individual measurements shall be interpreted on the basis of the criteria described in EN ISO 4259:2006.

<sup>(3)</sup> FAME shall comply with EN 14214.

## ANNEX III

**VAPOUR PRESSURE WAIVER PERMITTED FOR PETROL CONTAINING BIOETHANOL**

Bioethanol content (% v/v)	Vapour pressure waiver permitted (kPa)
0	0
1	3,65
2	5,95
3	7,20
4	7,80
5	8,0
6	8,0
7	7,94
8	7,88
9	7,82
10	7,76

The permitted vapour pressure waiver for intermediate bioethanol content between the values listed shall be determined by a straight line interpolation between the bioethanol content immediately above and that immediately below the intermediate value.

## ANNEX IV

## RULES FOR CALCULATING LIFE CYCLE GREENHOUSE EMISSIONS FROM BIOFUELS

## A. Typical and default values for biofuels if produced with no net carbon emissions from land use change

Biofuel production pathway	Typical greenhouse gas emission saving	Default greenhouse gas emission saving
Sugar beet ethanol	61 %	52 %
Wheat ethanol (process fuel not specified)	32 %	16 %
Wheat ethanol (lignite as process fuel in CHP plant)	32 %	16 %
Wheat ethanol (natural gas as process fuel in conventional boiler)	45 %	34 %
Wheat ethanol (natural gas as process fuel in CHP plant)	53 %	47 %
Wheat ethanol (straw as process fuel in CHP plant)	69 %	69 %
Corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	56 %	49 %
Sugar cane ethanol	71 %	71 %
The part from renewable sources of ethyl-Tertio-butyl-ether (ETBE)	Equal to that of the ethanol production Pathway used	
The part from renewable sources of tertiary-amyl-ethyl-ether (TAE)	Equal to that of the ethanol production pathway used	
Rape seed biodiesel	45 %	38 %
Sunflower biodiesel	58 %	51 %
Soybean biodiesel	40 %	31 %
Palm oil biodiesel (process not specified)	36 %	19 %
Palm oil biodiesel (process with methane capture at oil mill)	62 %	56 %
Waste vegetable or animal (*) oil biodiesel	88 %	83 %
Hydrotreated vegetable oil from rape seed	51 %	47 %
Hydrotreated vegetable oil from sunflower	65 %	62 %
Hydrotreated vegetable oil from palm oil (process not specified)	40 %	26 %
Hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	68 %	65 %
Pure vegetable oil from rape seed	58 %	57 %
Biogas from municipal organic waste as compressed natural gas	80 %	73 %
Biogas from wet manure as compressed natural gas	84 %	81 %
Biogas from dry manure as compressed natural gas	86 %	82 %

(\*) Not including animal oil produced from animal by-products classified as category 3 material in accordance with Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption <sup>(1)</sup>.

<sup>(1)</sup> OJ L 273, 10.10.2002, p. 1.

**B. Estimated typical and default values for future biofuels that were not on the market or were on the market only in negligible quantities in January 2008, if produced with no net carbon emissions from land use change**

Biofuel production pathway	Typical greenhouse gas emission saving	Default greenhouse gas emission saving
Wheat straw ethanol	87 %	85 %
Waste wood ethanol	80 %	74 %
Farmed wood ethanol	76 %	70 %
Waste wood Fischer-Tropsch diesel	95 %	95 %
Farmed wood Fischer-Tropsch diesel	93 %	93 %
Waste wood dimethylether (DME)	95 %	95 %
Farmed wood DME	92 %	92 %
Waste wood methanol	94 %	94 %
Farmed wood methanol	91 %	91 %
The part from renewable sources of methyl-tertio-butyl-ether (MTBE)	Equal to that of the methanol production pathway used	

**C. Methodology**

1. Greenhouse gas emissions from the production and use of biofuels shall be calculated as:

$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr} - e_{ee}$$

where

- $E$  = total emissions from the use of the fuel;  
 $e_{ec}$  = emissions from the extraction or cultivation of raw materials;  
 $e_l$  = annualised emissions from carbon stock changes caused by land use change;  
 $e_p$  = emissions from processing;  
 $e_{td}$  = emissions from transport and distribution;  
 $e_u$  = emissions from the fuel in use;  
 $e_{sca}$  = emission savings from soil carbon accumulation via improved agricultural management;  
 $e_{ccs}$  = emission savings from carbon capture and geological storage;  
 $e_{ccr}$  = emission savings from carbon capture and replacement; and  
 $e_{ee}$  = emission savings from excess electricity from cogeneration.

Emissions from the manufacture of machinery and equipment shall not be taken into account.

2. Greenhouse gas emissions from fuels,  $E$ , shall be expressed in terms of grams of CO<sub>2</sub> equivalent per MJ of fuel, gCO<sub>2eq</sub>/MJ.
3. By derogation from point 2, values calculated in terms of gCO<sub>2eq</sub>/MJ may be adjusted to take into account differences between fuels in useful work done, expressed in terms of km/MJ. Such adjustments shall only be made where evidence of the differences in useful work done is provided.
4. Greenhouse gas emission savings from biofuels shall be calculated as:

$$SAVING = (E_F - E_B)/E_F$$

where

- $E_B$  = total emissions from the biofuel; and  
 $E_F$  = total emissions from the fossil fuel comparator.



5. The greenhouse gases taken into account for the purposes of point 1 shall be CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub>. For the purpose of calculating CO<sub>2</sub> equivalence, those gases shall be valued as follows:

CO<sub>2</sub>: 1

N<sub>2</sub>O: 296

CH<sub>4</sub>: 23

6. Emissions from the extraction or cultivation of raw materials,  $e_{ec}$ , shall include emissions from the extraction or cultivation process itself; from the collection of raw materials; from waste and leakages; and from the production of chemicals or products used in extraction or cultivation. Capture of CO<sub>2</sub> in the cultivation of raw materials shall be excluded. Certified reductions of greenhouse gas emissions from flaring at oil production sites anywhere in the world shall be deducted. Estimates of emissions from cultivation may be derived from the use of averages calculated for smaller geographical areas than those used in the calculation of the default values, as an alternative to using actual values.
7. Annualised emissions from carbon stock changes caused by land use change,  $e_l$ , shall be calculated by dividing total emissions equally over 20 years. For the calculation of those emissions the following rule shall be applied:

$$e_l = (CS_R - CS_A) \times 3,664 \times 1/20 \times 1/P - e_B \text{ } ^{(1)},$$

where

$e_l$  = annualised greenhouse gas emissions from carbon stock change due to land use change (measured as mass of CO<sub>2</sub>-equivalent per unit biofuel energy);

$CS_R$  = the carbon stock per unit area associated with the reference land use (measured as mass of carbon per unit area, including both soil and vegetation). The reference land use shall be the land use in January 2008 or 20 years before the raw material was obtained, whichever was the later;

$CS_A$  = the carbon stock per unit area associated with the actual land use (measured as mass of carbon per unit area, including both soil and vegetation). In cases where the carbon stock accumulates over more than one year, the value attributed to  $CS_A$  shall be the estimated stock per unit area after 20 years or when the crop reaches maturity, whichever is the earlier;

$P$  = the productivity of the crop (measured as biofuel energy per unit area per year); and

$e_B$  = bonus of 29 gCO<sub>2eq</sub>/MJ biofuel if biomass is obtained from restored degraded land under the conditions provided for in point 8.

8. The bonus of 29 gCO<sub>2eq</sub>/MJ shall be attributed if evidence is provided that the land:

(a) was not in use for agriculture or any other activity in January 2008; and

(b) falls into one of the following categories:

(i) severely degraded land, including such land that was formerly in agricultural use;

(ii) heavily contaminated land.

The bonus of 29 gCO<sub>2eq</sub>/MJ shall apply for a period of up to 10 years from the date of conversion of the land to agricultural use, provided that a steady increase in carbon stocks as well as a sizable reduction in erosion phenomena for land falling under (i) are ensured and that soil contamination for land falling under (ii) is reduced.

9. The categories mentioned in point 8(b) are defined as follows:

(a) 'severely degraded land' means land that, for a significant period of time, has either been significantly salinated or presented significantly low organic matter content and been severely eroded;

(b) 'heavily contaminated land' means land that is unfit for the cultivation of food and feed due to soil contamination.

Such land shall include land that has been the subject of a Commission decision in accordance with the fourth subparagraph of Article 7c(3).

<sup>(1)</sup> The quotient obtained by dividing the molecular weight of CO<sub>2</sub> (44,010 g/mol) by the molecular weight of carbon (12,011 g/mol) is equal to 3,664.

10. The guide adopted pursuant to point 10 of Part C of Annex V to Directive 2009/28/EC shall serve as the basis of the calculation of land carbon stocks for the purposes of this Directive.
11. Emissions from processing,  $e_p$ , shall include emissions from the processing itself; from waste and leakages; and from the production of chemicals or products used in processing.

In accounting for the consumption of electricity not produced within the fuel production plant, the greenhouse gas emission intensity of the production and distribution of that electricity shall be assumed to be equal to the average emission intensity of the production and distribution of electricity in a defined region. As an exception to this rule producers may use an average value for an individual electricity production plant for electricity produced by that plant, if that plant is not connected to the electricity grid.

12. Emissions from transport and distribution,  $e_{td}$ , shall include emissions from the transport and storage of raw and semi-finished materials and from the storage and distribution of finished materials. Emissions from transport and distribution to be taken into account under point 6 shall not be covered by this point.
13. Emissions from the fuel in use,  $e_u$ , shall be taken to be zero for biofuels.
14. Emission savings from carbon capture and geological storage  $e_{ccs}$ , that have not already been accounted for in  $e_p$ , shall be limited to emissions avoided through the capture and sequestration of emitted CO<sub>2</sub> directly related to the extraction, transport, processing and distribution of fuel.
15. Emission savings from carbon capture and replacement,  $e_{ccr}$ , shall be limited to emissions avoided through the capture of CO<sub>2</sub> of which the carbon originates from biomass and which is used to replace fossil-derived CO<sub>2</sub> used in commercial products and services.
16. Emission savings from excess electricity from cogeneration,  $e_{ec}$ , shall be taken into account in relation to the excess electricity produced by fuel production systems that use cogeneration except where the fuel used for the cogeneration is a co-product other than an agricultural crop residue. In accounting for that excess electricity, the size of the cogeneration unit shall be assumed to be the minimum necessary for the cogeneration unit to supply the heat that is needed to produce the fuel. The greenhouse gas emission savings associated with that excess electricity shall be taken to be equal to the amount of greenhouse gas that would be emitted when an equal amount of electricity was generated in a power plant using the same fuel as the cogeneration unit.
17. Where a fuel production process produces, in combination, the fuel for which emissions are being calculated and one or more other products (co-products), greenhouse gas emissions shall be divided between the fuel or its intermediate product and the co-products in proportion to their energy content (determined by lower heating value in the case of co-products other than electricity).
18. For the purposes of the calculation referred to in point 17, the emissions to be divided shall be  $e_{ec} + e_i$  + those fractions of  $e_p$ ,  $e_{td}$  and  $e_{ee}$  that take place up to and including the process step at which a co-product is produced. If any allocation to co-products has taken place at an earlier process step in the life-cycle, the fraction of those emissions assigned in the last such process step to the intermediate fuel product shall be used for this purpose instead of the total of those emissions.

All co-products, including electricity that does not fall under the scope of point 16, shall be taken into account for the purposes of that calculation, except for agricultural crop residues, including straw, bagasse, husks, cobs and nut shells. Co-products that have a negative energy content shall be considered to have an energy content of zero for the purpose of the calculation.

Wastes, agricultural crop residues, including straw, bagasse, husks, cobs and nut shells, and residues from processing, including crude glycerine (glycerine that is not refined), shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials.

In the case of fuels produced in refineries, the unit of analysis for the purposes of the calculation referred to in point 17 shall be the refinery.

19. For the purposes of the calculation referred to in point 4, the fossil fuel comparator  $E_F$  shall be the latest available actual average emissions from the fossil part of petrol and diesel consumed in the Community as reported under this Directive. If no such data are available, the value used shall be 83,8 gCO<sub>2eq</sub>/MJ.

**D. Disaggregated default values for biofuels**

Disaggregated default values for cultivation: 'e<sub>cc</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Sugar beet ethanol	12	12
Wheat ethanol	23	23
Corn (maize) ethanol, Community produced	20	20
Sugar cane ethanol	14	14
The part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
The part from renewable sources of TAEE	Equal to that of the ethanol production pathway used	
Rape seed biodiesel	29	29
Sunflower biodiesel	18	18
Soybean biodiesel	19	19
Palm oil biodiesel	14	14
Waste vegetable or animal (*) oil biodiesel	0	0
Hydrotreated vegetable oil from rape seed	30	30
Hydrotreated vegetable oil from sunflower	18	18
Hydrotreated vegetable oil from palm oil	15	15
Pure vegetable oil from rape seed	30	30
Biogas from municipal organic waste as compressed natural gas	0	0
Biogas from wet manure as compressed natural gas	0	0
Biogas from dry manure as compressed natural gas	0	0

(\*) Not including animal oil produced from animal by-products classified as category 3 material in accordance with Regulation (EC) No 1774/2002.

Disaggregated default values for processing (including excess electricity): 'e<sub>p</sub> - e<sub>ee</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Sugar beet ethanol	19	26
Wheat ethanol (process fuel not specified)	32	45
Wheat ethanol (lignite as process fuel in CHP plant)	32	45
Wheat ethanol (natural gas as process fuel in conventional boiler)	21	30
Wheat ethanol (natural gas as process fuel in CHP plant)	14	19
Wheat ethanol (straw as process fuel in CHP plant)	1	1
Corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	15	21
Sugar cane ethanol	1	1

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
The part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
The part from renewable sources of TAAE	Equal to that of the ethanol production pathway used	
Rape seed biodiesel	16	22
Sunflower biodiesel	16	22
Soybean biodiesel	18	26
Palm oil biodiesel (process not specified)	35	49
Palm oil biodiesel (process with methane capture at oil mill)	13	18
Waste vegetable or animal oil biodiesel	9	13
Hydrotreated vegetable oil from rape seed	10	13
Hydrotreated vegetable oil from sunflower	10	13
Hydrotreated vegetable oil from palm oil (process not specified)	30	42
Hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	7	9
Pure vegetable oil from rape seed	4	5
Biogas from municipal organic waste as compressed natural gas	14	20
Biogas from wet manure as compressed natural gas	8	11
Biogas from dry manure as compressed natural gas	8	11

Disaggregated default values for transport and distribution: 'e<sub>td</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Sugar beet ethanol	2	2
Wheat ethanol	2	2
Corn (maize) ethanol, Community produced	2	2
Sugar cane ethanol	9	9
The part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
The part from renewable sources of TAAE	Equal to that of the ethanol production pathway used	
Rape seed biodiesel	1	1
Sunflower biodiesel	1	1
Soybean biodiesel	13	13
Palm oil biodiesel	5	5
Waste vegetable or animal oil biodiesel	1	1
Hydrotreated vegetable oil from rape seed	1	1
Hydrotreated vegetable oil from sunflower	1	1
Hydrotreated vegetable oil from palm oil	5	5
Pure vegetable oil from rape seed	1	1
Biogas from municipal organic waste as compressed natural gas	3	3
Biogas from wet manure as compressed natural gas	5	5
Biogas from dry manure as compressed natural gas	4	4



## Total for cultivation, processing, transport and distribution

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Sugar beet ethanol	33	40
Wheat ethanol (process fuel not specified)	57	70
Wheat ethanol (lignite as process fuel in CHP plant)	57	70
Wheat ethanol (natural gas as process fuel in conventional boiler)	46	55
Wheat ethanol (natural gas as process fuel in CHP plant)	39	44
Wheat ethanol (straw as process fuel in CHP plant)	26	26
Corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	37	43
Sugar cane ethanol	24	24
The part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
The part from renewable sources of TAAE	Equal to that of the ethanol production pathway used	
Rape seed biodiesel	46	52
Sunflower biodiesel	35	41
Soybean biodiesel	50	58
Palm oil biodiesel (process not specified)	54	68
Palm oil biodiesel (process with methane capture at oil mill)	32	37
Waste vegetable or animal oil biodiesel	10	14
Hydrotreated vegetable oil from rape seed	41	44
Hydrotreated vegetable oil from sunflower	29	32
Hydrotreated vegetable oil from palm oil (process not specified)	50	62
Hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	27	29
Pure vegetable oil from rape seed	35	36
Biogas from municipal organic waste as compressed natural gas	17	23
Biogas from wet manure as compressed natural gas	13	16
Biogas from dry manure as compressed natural gas	12	15

E. **Estimated disaggregated default values for future biofuels that were not on the market or were only on the market in negligible quantities in January 2008**

Disaggregated values for cultivation: 'e<sub>cc</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Wheat straw ethanol	3	3
Waste wood ethanol	1	1
Farmed wood ethanol	6	6
Waste wood Fischer-Tropsch diesel	1	1
Farmed wood Fischer-Tropsch diesel	4	4
Waste wood DME	1	1
Farmed wood DME	5	5
Waste wood methanol	1	1
Farmed wood methanol	5	5
The part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated values for processing (including excess electricity): 'e<sub>p</sub> - e<sub>ec</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Wheat straw ethanol	5	7
Wood ethanol	12	17
Wood Fischer-Tropsch diesel	0	0
Wood DME	0	0
Wood methanol	0	0
The part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated values for transport and distribution: 'e<sub>td</sub>' as defined in Part C of this Annex

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Wheat straw ethanol	2	2
Waste wood ethanol	4	4
Farmed wood ethanol	2	2
Waste wood Fischer-Tropsch diesel	3	3
Farmed wood Fischer-Tropsch diesel	2	2
Waste wood DME	4	4
Farmed wood DME	2	2
Waste wood methanol	4	4
Farmed wood methanol	2	2
The part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Total for cultivation, processing, transport and distribution

Biofuel production pathway	Typical greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)	Default greenhouse gas emissions (gCO <sub>2eq</sub> /MJ)
Wheat straw ethanol	11	13
Waste wood ethanol	17	22
Farmed wood ethanol	20	25
Waste wood Fischer-Tropsch diesel	4	4
Farmed wood Fischer-Tropsch diesel	6	6
Waste wood DME	5	5
Farmed wood DME	7	7
Waste wood methanol	5	5
Farmed wood methanol	7	7
The part from renewable sources of MTBE	Equal to that of the methanol production pathway used	