



*European Economic and Social Committee*

**TEN/502**  
**Indirect land-use change**  
**(ILUC)/Biofuels**

Brussels, 17 April 2013

**OPINION**

of the  
European Economic and Social Committee  
on the

**Proposal for a Directive of the European Parliament and of the Council amending  
Directive 98/70/EC concerning the quality of petrol and diesel fuels and amending  
Directive 2009/28/EC concerning the promotion of the use of energy from renewable sources**  
COM(2012) 595 final – 2012/0288 (COD)

---

Rapporteur: **Mr Ribbe**

---

On 19 November 2012, the European Parliament and the Council decided to consult the European Economic and Social Committee, under Article 114 of the Treaty on the Functioning of the European Union, on the

*Proposal for a Directive of the European Parliament and of the Council amending Directive 98/70/EC concerning the quality of petrol and diesel fuels and amending Directive 2009/28/EC concerning the promotion of the use of energy from renewable sources*

COM(2012) 595 final – 2012/0288 (COD).

The Section for Transport, Energy, Infrastructure and the Information Society, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 3 April 2013.

At its 489th plenary session, held on 17 and 18 April 2013 (meeting of 17 April), the European Economic and Social Committee adopted the following opinion by 146 votes to 26 with 23 abstentions.

\*

\* \*

## 1. **Conclusions and recommendations**

- 1.1 The EESC has always advocated greater use of renewable energy, including in the form of bioenergy, but it already expressed reservations about the introduction of agrofuels in transport in its opinion on the Renewable Energy Directive; it therefore welcomes the Commission's proposal to now limit "conventional biofuels" to a share of 5%.
- 1.2 The Commission wants to promote greater use of residual products, by-products and waste products in fuel production. The EESC welcomes this in principle, but special care needs to be taken to achieve a consistent policy and avoid creating new problems. It is precisely here that the EESC sees risks in the Commission proposal.
- 1.3 While biomass is renewable, the land needed to cultivate it is limited, which is why it makes sense to consider indirect land-use change (ILUC) – insofar as this refers to competition for land – when shaping policy. It should be noted that such change or competition only occurs where bioenergy or other crops replace food or feed crops, and not where crops are simply redistributed between regions.
- 1.4 The Commission's ILUC approach is part of a comparative assessment of fossil-based and biogenic energy sources that looks exclusively at greenhouse gas emissions. Issues such as

security of supply or the finite nature of fossil resources do not fit into this mathematical equation and are ignored. As a result, ILUC does not measure up as a policy of sustainability.

- 1.5 Another reason why the ILUC approach adopted by the Commission is questionable is that it is intended to apply to liquid fuel sources, but not gaseous or solid ones. The EESC does not agree with this.
- 1.6 This proposal calls into question European protein production and with it the use of untreated plant oils for energy, which in certain sectors is perfectly reasonable, in that plant oils are given an ILUC rating, which means they are to be restricted. This does not make sense. Plant oils are not "primary products" but rather by-products that accrue from the desirable cultivation of protein plants in Europe. Cultivation of oil plants in Europe, which produce both protein feed *and* plant oil (and are therefore a substitute for imported soya), should be promoted as part of sustainable agriculture, not restricted.
- 1.7 In the case of what the Commission calls "advanced" biofuels, which it now wants to promote, the EESC is concerned that valuable potential carbon sinks (such as wood, straw and leaves) will be used to produce fuels, which would increase CO<sub>2</sub> levels in the atmosphere (see point 4).
- 1.8 The EESC does not consider this proposed amendment to the Renewable Energy Directive to be a promising foundation for a strategy to really minimise use of fossil fuels, reinforce Europe's security of supply and help protect the climate.
- 1.9 Biofuels of any sort are not a lasting solution for widespread over-consumption of energy. Limited availability, alone, means they cannot replace fossil fuels. What is at stake here is no more than a temporary solution – especially in the case of passenger cars, where alternatives to liquid fuels are in sight – that may entail significant undesirable side-effects and must not distract attention from the unavoidable need to reduce the amount of energy we consume, regardless of where that energy comes from.
- 1.10 The EESC understands that, in some areas of transport and in agriculture and forestry, there are currently no viable alternatives to liquid fuels. Pure plant oil can be a workable alternative here, but its production, too, is limited, which means that it has to be deployed strategically.
- 1.11 The Commission Communication on Clean Power for Transport: A European alternative fuels strategy<sup>1</sup>, which is strategically linked to the policy on biofuels, also fails to offer any adequate solutions<sup>2</sup>.

---

<sup>1</sup> COM(2013) 17 final.

<sup>2</sup> See EESC Opinion TEN/506 (not yet adopted).

1.12 Overall, the EESC sees a serious lack of consistency between different Commission policies that urgently needs to be addressed. The Committee calls on the Commission to generally rethink its bioenergy policy, especially insofar as it applies to the transport sector. In doing so, it should consider the finite nature of land (and thus biomass), the energy performance and efficiency of each form of bioenergy (and thus the varying potential for greenhouse gas reductions), and economic efficiency. Much more attention should be paid to energy loss in conversion processes, alternatives to the combustion engine in the transport sector should be developed and promoted (including electromobility and hydrogen technology), and a separate strategy should be developed for sustainable European production and use of protein and plant oils.

## 2. **Introduction: policy context and presentation of the Commission's proposals**

2.1 Directive 2009/28/EC (the Renewable Energy Directive) set binding targets for the development of renewable energy (henceforth referred to as RE), which is to account for 20% of all energy consumption by 2020. Member States were given a high degree of flexibility in implementation, in that they are free to decide which sector (electricity, heating/cooling or transport) they wish to focus on.

2.2 This flexibility was qualified when it came to the transport sector, however: here the directive required a minimum share of 10% of energy consumption. Initially the plan was to stipulate this share in the form of biofuels<sup>3</sup>, but following criticism from the EESC and the EP it was agreed that other types of renewable energy (such as electricity from renewable sources used in cars and trains; biogas; etc.) would be allowed.

2.3 The amendments now proposed are the result of a 2010 report from the Commission "on indirect land-use change related to biofuels and bioliquids"<sup>4</sup>, which acknowledged "that it is important to tackle indirect land-use change for biofuels".

2.4 The Commission has generally stuck to its approach of using plant-based fuels in the transport sector, which was criticised by the EESC, but it now intends to restrict "conventional agrofuels" and effect a transition to "advanced biofuels", which supposedly do not pose a risk of indirect land-use change. Biofuels defined as "advanced" by the Commission are liquid fuels, including those manufactured from biogenic rubbish/waste or algae. The Commission believes that their production should be supported because they are not currently commercially available in large quantities. Incentives are to be provided by increasing the weighting of advanced biofuels towards the 10% target for transport set in Directive 2009/28/EC compared to conventional agrofuels.

---

<sup>3</sup> The draft directive uses the term "biofuels". In various opinions, however, the EESC has drawn attention to a number of environmental problems caused by these "bio" fuels. The prefix "bio" suggests an environment-friendly product, and in this opinion the EESC therefore uses the term "agrofuel" instead.

<sup>4</sup> COM(2010) 811 final, 22.12.2010.

2.5 In a nutshell, the Commission's proposals target the following objectives:

- limit the contribution of conventional biofuels to the targets set by the Renewable Energy Directive to no more than 5% of energy use in transport, or no more than half the 10% target;
- encourage "advanced biofuels" (with no or low indirect land-use change), not least by weighting them in calculations so that they contribute more to the targets in the Renewable Energy Directive than conventional agrofuels;
- improve the greenhouse gas performance of biofuel production processes (reduce emissions) by increasing the emission savings achieved with new facilities;
- improve reporting of greenhouse gas emissions by obliging Member States and fuel suppliers to report emissions linked to indirect land-use change caused by biofuels.

### 3. General comments

3.1 In its opinion<sup>5</sup> on the then-draft Renewable Energy Directive, the EESC welcomed and supported the directive's general priorities, but it criticised the use of bioenergy in transport.

3.2 Europe needs to systematically expand renewable energy, but it also needs to achieve comprehensive energy savings, greater energy efficiency across the board and structural changes in various sectors (such as transport).

3.3 However, the EESC rejected the special treatment of transport and the focus on agrofuels there, not least given that "the strategic requirement for the partial substitution of diesel or petrol by agrofuels is one of the least effective and most expensive climate protection measures, and that it represents an extreme misallocation of financial resources. The EESC cannot understand why the most expensive measures are being promoted politically with the greatest intensity, particularly as a huge number of environmental and social questions, let alone economic ones, remain completely unanswered (...) It therefore opposes the separate 10% target for agrofuels<sup>6</sup>." The Committee's view on this matter has not changed.

3.4 In any case, the Commission should not be aiming for a policy target of 10%. Its objective should be a consistent policy aimed at replacing as much as 100% of the fossil fuels currently used over the long term.

3.5 At current traffic volumes, agrofuels will only be able to play a very limited role in achieving this target. The FAO has calculated that in order to meet the present energy needs of the

---

<sup>5</sup> [OJ C 77, 31.3.2009, p. 43.](#)

<sup>6</sup> [OJ C 77, 31.3.2009, p. 43.](#)

transport sector worldwide, 2/3 of the farmland now available worldwide would have to be given over to agrofuel production.

- 3.6 The impact of such a policy in terms of indirect land-use change is obvious.
- 3.7 Biofuels of any sort are therefore not a lasting solution for widespread over-consumption of energy. Limited availability, alone, means they can only replace fossil fuels to a very restricted degree. What is at stake here is no more than a temporary solution – especially in the case of passenger cars, where alternatives to liquid fuels are in sight – that may entail significant undesirable side-effects and must not distract attention from the unavoidable need to reduce the amount of energy we consume, regardless of where that energy comes from.
- 3.8 One reason for the EESC's critical view of the Commission proposal in 2008 was the issue of indirect land-use change. The Committee therefore welcomes the present initiative aimed at limiting use of conventional agrofuels.

### **The ILUC approach is understandable but has serious shortcomings**

- 3.9 The Commission's theoretical approach to ILUC is understandable: whenever food or feed crops are replaced with crops for other uses (such as agrofuels, but also plant-based material, etc.) on farmland, the former have to be cultivated elsewhere, where they may have adverse environmental or social effects.
- 3.10 It therefore makes sense to consider indirect land-use change when shaping policy.
- 3.11 A study on behalf of the Commission estimated that an EU-wide proportional increase in agrofuels from the less than 5% they make up today to 10% would cause 1.4 million ha worth of indirect land-use change.
- 3.12 The Committee draws the attention of the Commission, the EP and the Council to the fact that indirect land-use change is not only caused by use of liquid fuels. Rather, it is inherent in the use of any biomass that is not waste material.
- 3.13 This means that, in order to be consistent, a similar approach to that now taken for liquid fuels would have to be used for gaseous and solid fuels. In Germany, for example, alongside the 1.2 million ha of farmland used to cultivate conventional agrofuel crops in 2011, around 1 million ha was already used to cultivate crops (primarily maize) for biogas. Plants turned into fuel are given an ILUC factor, but those converted into electricity are not. This is illogical and inconsistent.
- 3.14 The EESC believes that it only makes sense to use energy sources in transport such as biomass that require separate land if there is no practical alternative. While biomass is renewable, the land it requires means that it is not available in unlimited quantities.

- 3.15 Alternatives are often available or can be developed, as is the case with electromobility, where wind and solar can produce energy that is much less surface-intensive: generating 10 GWh/year of electricity requires 400 ha of land for maize cultivation, for example, but only 8 ha of roof surface (covered with photovoltaic devices), or 0.3 ha (if wind turbines are used). In other words: where electromobility, for instance, is feasible and economically viable and practicable, it should be further developed and deployed so as to avoid or minimise competition for land as much as possible.
- 3.16 The EESC fails to see in the Commission's proposal any consistent overall strategy for bioenergy, however, nor for addressing the challenges in transport that it repeatedly cites, i.e.
- (a) the very high dependency on energy imports, and
  - (b) the failure to control greenhouse gas emissions.

**The new approach will do little to protect the climate and strengthen security of supply**

- 3.17 The Commission is aware that advanced biofuels manufactured from waste or algae will be much more expensive than conventional agrofuels made from food crops. Since the Commission assumes that advanced fuels will be needed to meet the 10% goal, it resorts to a gimmick when calculating how this objective can be met. Every litre of advanced fuel manufactured from feedstocks listed in Annex IX, Part A of the draft directive (i.e. algae, straw, animal manure, sewage sludge, nut shells, bark, cutter shavings, saw dust, leaves, etc.) is to be multiplied by a factor of four, that is to say weighted so that it is worth four litres of conventional agrofuel. Fuels manufactured from such feedstocks as used cooking oil, animal fats or non-food cellulosic material (Annex IX, Part B) are to be multiplied by a factor of two.
- 3.18 This means that the 10% goal can be seen to be met with a 2.5% share of advanced fuels multiplied by a factor of four. Assuming that such advanced fuels produce 60% fewer greenhouse gas emissions than fossil fuels, emissions in the transport sector stand to fall by about 1.5%. Since emissions from transport amount to approximately 25% of the EU's total emissions, this would translate into an overall reduction of emissions in the EU of **less than half a percent**.
- 3.19 Regardless of whether the 10% target is met using a 2.5% share of modern biofuels, or with a mix of no more than 5% conventional biofuels and 1.25% advanced biofuels, for instance – it cannot be seen as a substantial contribution to greater security of supply in the EU nor to efforts to tackle climate change.
- 3.20 In the long term, renewable energy will need to make up a much larger share of the energy mix in transport than the present target of 10%. The Commission aims to cut greenhouse gas

emissions in the transport sector by as much as 67% by 2050. This proposal is no foundation for a successful strategy to meet this objective.

### **The Commission's approach runs counter to a European protein strategy**

- 3.21 The EESC stresses that an ILUC approach only makes sense for new uses of land, not regional redistribution of existing ones. It is precisely here that the Commission's proposal contains a critical mistake.
- 3.22 The Commission's ILUC calculations show that production of plant oils produces what is known as oil or protein cake as a by-product, the "value" of which is assessed exclusively in terms of climate policy by factoring solely its combustion value into comparative analyses of greenhouse gas emissions.
- 3.23 No one in Europe would think of burning oil cake, however. Moreover, the fact is that cultivating oil plants in Europe makes a lot of sense. Rape, for example, was developed through breeding in recent decades to encourage its cultivation for feed, so as to boost Europe's meagre supply of protein. The EESC has repeatedly said that this is urgently needed, because around 75% of Europe's protein feed is currently imported. Cultivating protein cultures in Europe can reduce imports of protein plants such as soya, and with them the adverse environmental and social effects linked in part to industrial soya cultivation overseas.
- 3.24 Plant oil is thus not the primary objective of cultivating oil plants: around 2/3 of the yield consists of protein cake, while only 1/3 is pressed oil. Oil, therefore, like straw, which accumulates during production<sup>7</sup>, is the by-product or waste product.
- 3.25 The Commission claims that it wants to promote by-products and waste products, but its proposal casts doubt on European protein production and with it the perfectly sensible use of untreated plant oils. This is far from consistent as a policy.

### **ILUC is just one criterion; bioenergy is more than just a question of land use and greenhouse gas emissions.**

- 3.26 The Commission's proposals reduce the debate about bioenergy to a comparative analysis of greenhouse gas emissions from fossil fuels and renewable energy sources. Its approach is to only allow for biogenic fuels in the RE Directive if they reduce greenhouse gas emissions by a certain amount.
- 3.27 The EESC emphasises that such a policy falls short because it ignores other important issues such as security of supply (including development of regional supply structures). Equally, no

---

<sup>7</sup>

In the case of rape this amounts to around nine tonnes per hectare; curiously, the energy value of this straw is not factored into the greenhouse gas calculation.



attention is paid to the issue of finite fossil fuels/feedstock, to social issues like displacement of small farmers and indigenous groups on overseas arable land, or to price trends on food commodity markets, because – unlike ILUC – they cannot be converted into "CO<sub>2</sub>-equivalent" values and entered into a mathematical grid.

- 3.28 Moreover, the comparative greenhouse gas figures do not distinguish strictly enough between petroleum (the basis of petrol, diesel and kerosene), a finite fossil fuel, and such renewable fuels as plant oil (as a waste product of a European protein strategy). If greenhouse gas figures are to make sense they need to account for this distinction between fossils and renewables, which means that petroleum derivatives should be given a heavy negative weighting according to their specific impact. In addition, new, more damaging (for the climate) mining methods (such as those used to extract shale and tar sand oil) need to be factored into the equation for fossil fuels. This is something the Commission needs to correct.
- 3.29 It should also be noted that there are considerable differences between biogenic fuels. Greenhouse gas emissions from biofuels are a result of (a) the way the plants are cultivated and (b) the cost incurred in producing the biofuel, including transportation of the feedstock and end product.
- 3.30 Consequently, biofuels produced using crops cultivated in a way that conserves nature and resources (such as organic farming) have to be distinguished from those produced using agrochemicals (which weakens their greenhouse gas performance), while locally produced fuels have to be distinguished from those produced at centralised, large-scale plants, and so forth. The Commission does not draw this distinction.
- 3.31 Instead, curiously, even "advanced" fuels produced at high cost in terms of energy and transportation are given a better rating using the Commission's methods than are natural raw materials with practically no emissions (such as pure plant oil); see point 4. The EESC considers this unacceptable.

#### 4. **Specific comments**

- 4.1 The Commission suggests that advanced biofuels pose no risk of indirect land-use change. The EESC wants to make clear that this certainly does not mean that they pose no threat to the climate. Below the Committee wishes to stress its critical view of the approach now planned by way of reference to four specific examples from the list of "waste products" proposed by the Commission.

#### 4.2 **Glycerine**

- 4.2.1 The Commission has now focused on glycerine, among others, as an advanced biofuel in place of the conventional biodiesel, which it intends to restrict. However, it is precisely European biodiesel producers who have become the largest suppliers of glycerine in recent

years – 80% of European glycerine production is derived from biodiesel production<sup>8</sup>. The EESC wonders where the feedstock glycerine, which is to be deployed on a larger scale, will be found in future given that production of the corresponding raw material (biodiesel) is to be restricted. This does not add up.

4.2.2 The Commission itself has made clear that it would make more sense in terms of climate policy and energy to use plant oils untreated rather than esterifying them into biodiesel (see Annex V, Part A of Directive 2009/28/EC). This approach, sensible in terms of climate policy, would lead to no glycerine being produced at all. The Commission's current proposal will significantly and disastrously distort "competition" when ranking products according to their greenhouse gas emissions. The industrial residual product glycerine, which is derived from an energy-intensive production process (transesterification of plant oil into biodiesel), is multiplied by a factor of four and thereby given a sham superior greenhouse gas rating to that of the plant oil used to produce it. A nominal emission saving is achieved on paper with no basis in fact (see point 4.4.3).

#### 4.3 **Wood (biomass to liquid)**

4.3.1 Without a doubt, it is technically possible to convert biomass into liquid (BtL), as proposed by the Commission in the case of wood, for example. The Fischer-Tropsch process used to achieve this has been around for decades; it involves completely breaking up the wood's lignin molecules and synthesising the remaining carbon monoxide into hydrocarbon molecules, typically with injected hydrogen.

4.3.2 The process cannot be applied to wood waste or bark, but requires wood of the highest quality (which creates competition with furniture and veneering), because foreign molecules which are specifically present in wood waste and bark impede the process.

4.3.3 This process is extremely energy-intensive. 1 000 kg of the finest quality logs (60 wt% organic material) can be turned into 135 kg of diesel fuel. More than 85% of the energy introduced in the form of wood is lost in this process; no more than 15% becomes "advanced biofuel". This means that from a forest of 1 000 trees, 850 are used up as processing energy to obtain fuel from fewer than 150 trees. With subsequent combustion of the BtL fuel in car engines, the entirety of the CO<sub>2</sub> captured by all 1 000 trees through photosynthesis is released.

4.3.4 This is an unacceptably low level of energy efficiency, and far from that repeatedly called for by the Commission. Energy-efficiency objectives require investment in processes which can achieve an impact that is acceptable in terms of energy use.

---

<sup>8</sup>

See the 2009 annual report (in German) of ADM Hamburg Aktiengesellschaft:  
[http://www.oelag.de/images\\_beitraege/downloads/ADM%20GB%202009%20final.pdf](http://www.oelag.de/images_beitraege/downloads/ADM%20GB%202009%20final.pdf).

- 4.3.5 Nevertheless, this process is presented in EU renewable energy policy as largely CO<sub>2</sub>-neutral, precisely because it involves using wood as processing energy. At the same time, the EU plans to build carbon capture and storage infrastructure. What advantage does this offer in comparison to transforming CO<sub>2</sub> into wood and storing it there long term, rather than releasing it anew by burning it to produce "advanced biofuels", for example?
- 4.3.6 Naturally, the EESC accepts that wood from sustainably managed forests can and should also be used for energy purposes to replace fossil fuels such as oil and coal. However, it has already made clear<sup>9</sup> that the recommendations of the Joint Research Centre should be followed and that measures that are most economically sensible and most effective in terms of climate policy should be given priority. This is true above all of wood used to produce heat (such as in district heating systems, ideally as part of combined heat and power plants), and not of energy-intensive chemical conversion of wood into liquid fuel for transport<sup>10</sup>.

#### 4.4 **Straw**

- 4.4.1 From an environmental and climate policy point of view, it is highly problematic for the Commission to define straw as a mere feedstock (in the sense of useless waste). For centuries, straw has been the principal material recycled on farms. On a single hectare of farmland, there are 10 tonnes of creatures that need to be fed. It is important to understand that humus has been created by soil life precisely from straw, leaves and decayed grass, etc. over several centuries. Humus means soil quality, fertility and CO<sub>2</sub> sinks.
- 4.4.2 It is not obvious to the EESC what the Commission actually wants: to build and expand CO<sub>2</sub> sinks, or to remove one of the key sources of potential sinks by prioritising the use of straw in fuel production?
- 4.4.3 The EU is encouraging the latter by designating straw as waste and processing it – at great energy cost – into an advanced fuel that will count towards transport sector climate change goals by a factor of four. The corresponding loss of CO<sub>2</sub> sinks is not taken into account.
- 4.4.4 Another consequence that has not been thought through is that when straw is removed from the soil ecosystem, this does not just create problems for the soil structure and microorganisms. The nutrients derived from it have to be replaced with mineral fertiliser, which costs both money and considerable energy to produce.
- 4.4.5 If policy makers make straw a commodity for which farmers are paid, the latter stand to profit. They receive nothing, however, for creation of humus and carbon capture in soil, or for energy savings from recycling straw on the farm. This creates clear false incentives.

---

<sup>9</sup> [OJ C 77, 31.3.2009, p. 43.](#)

<sup>10</sup> Joint Research Centre of the European Commission: "Biofuels in the European Context: Facts, Uncertainties and Recommendations", 2008, [http://ec.europa.eu/dgs/jrc/downloads/jrc\\_biofuels\\_report.pdf](http://ec.europa.eu/dgs/jrc/downloads/jrc_biofuels_report.pdf).

4.4.6 The Committee points to its opinion of 19 September 2012 on the *Proposal for a Decision of the European Parliament and of the Council on accounting rules and action plans on greenhouse gas emissions and removals resulting from activities related to land use, land use change and forestry*<sup>11</sup>. There it argued that the proposed action plans for the creation of carbon pools in agriculture "must at all costs be flanked by other policy measures, or combined with existing ones, so that framework conditions can be created that enable landowners and land managers to implement effective LULUCF measures in a way that makes economic sense and not only at their own cost." It is unfortunate that less than two months after the Committee articulated this principle the Commission has come out with its present proposal to turn straw into an advanced fuel, moving in completely the opposite direction.

#### 4.5 **Leaves**

4.5.1 Classifying leaves as undifferentiated "waste" or feedstock for production of advanced biofuels is unacceptable for environmental reasons. Leaves have important functions, not least in the ecosystem of forests and in the generosity of their yield. The removal of leaves from some European forests in the Middle Ages, for example, had a lasting negative impact on their health. Under the Commission's current proposals, it is conceivable that leaves from the forest will be given priority as a material for producing fuel, something that was finally stopped with great difficulty a few decades ago in a bid to improve the health of forests. At the moment, financial reasons alone may make it difficult to carry out the Commission's proposals.

#### 5. **EESC proposals**

5.1 The EESC calls on the Commission to completely rethink its bioenergy policy, especially when it comes to biofuels. In doing so, it should consider the finite nature of land (and thus biomass), the energy performance and efficiency of each form of bioenergy (and therefore the varying potential for greenhouse gas reductions), and economic efficiency. The Commission is called on to heed both the main observations of the Joint Research Centre and the key arguments of the study<sup>12</sup> by the German Federal Environment Agency (Umweltbundesamt) presented at an EESC side event in connection with the climate conference in Durban.

5.2 Much more attention needs to be paid to the energy used in the conversion process, which is often underestimated. In many areas (such as pharmaceuticals), intervention in the molecular structure of raw materials is unavoidable, but not necessarily in the energy sector. There the aim has to be maximum energy efficiency – after all, the point is to save energy. Therefore,

---

11 [OJ C 351, 15.11.2012, p. 85.](#)

12 Globale Landflächen und Biomasse nachhaltig und ressourcenschonend nutzen ["Sustainable and resource-efficient use of global land surfaces and biomass"], German Federal Environment Agency, 2012; <http://www.umweltbundesamt.de/uba-info-medien/4321.html>.

all energy products that undergo chemical conversion should be called into question where alternatives exist.

- 5.3 Instead of converting wood at great energy cost and then burning it in cars, it should either be used to capture carbon or burned in its natural state to replace fossil fuels in heating.
- 5.4 The Commission should develop a strategy that links energy supply needs with natural agricultural and forestry processes in an energy-efficient way, as in the case of the planned European protein strategy. This means that cultivation of oil plants in Europe, which produce both protein feed and plant oil (and are therefore a substitute for imported soya), should be promoted as part of sustainable agriculture, not restricted.
- 5.5 The Commission should strategically guide deployment of biofuels, the opportunities for the use of which are limited, towards areas where – unlike passenger cars – feasible and promising alternatives to fossil fuels are yet to be found. Such areas include aviation and shipping, but also off-road areas such as agriculture and forestry.
- 5.6 However, it should also take its own principle seriously, namely that bioenergy should be introduced where it can have the greatest energy and climate policy impact at the least expense. This is clearly true of heat utilisation, not liquid fuels.
- 5.7 The EESC has already expressed its views on renewable energy in agriculture on a number of occasions, one of which was that pure plant oils offer interesting alternatives there. Austria, for example, is capitalising on results showing this from a project supported by the Commission under FP7 using pure plant oils that have not been chemically altered, and will deploy them in agriculture on a larger scale. It is unfortunate that the Commission has failed to remark on this anywhere or to respond with its own initiatives.
- 5.8 In future the EESC would like to play an even more active part in the debate on issues like land use and land competition and in the increasing issue of soil sealing.

Brussels, 17 April 2013.

The President  
of the  
European Economic and Social Committee

Henri Malosse

**N.B.:** See appendix overleaf.

## APPENDIX TO THE OPINION

of the European Economic and Social Committee

The following amendments, which received at least a quarter of the votes cast, were rejected during the discussion:

### Point 3.16 (Amendment 8)

Amend as follows:

*The EESC fails to see in the Commission's proposal any consistent overall strategy for bioenergy, however, nor for addressing the challenges in transport that it repeatedly cites, i.e.*

*(a) the very high dependency on energy imports, and*

*(b) the failure to control greenhouse gas emissions.*

*Moreover, it should be noted that, at a practical and technical level, the reporting obligation for greenhouse gas emissions arising from land-use changes is hardly feasible and would at any event mean considerable extra efforts for both the administration and the companies concerned.*

### Reason

To be given orally.

### Voting:

For	63
Against	79
Abstentions	34

### Point 4.3.1 (Amendment 11)

Amend as follows:

~~*Without a doubt, it is technically possible to convert biomass into liquid (BtL), as proposed by the Commission in the case of wood, for example. The Fischer-Tropsch process used to achieve this has been around for decades; it involves completely breaking up the wood's lignin molecules and synthesising the remaining carbon monoxide into hydrocarbon*~~

molecules, typically with injected hydrogen. It is technically possible to convert biomass into liquid fuel (BtL), as proposed by the Commission in the case of wood, using a number of different methods. The Fischer-Tropsch process (which involves completely breaking down the wood's lignin molecules and synthesising the remaining carbon monoxide into hydrocarbon molecules, typically with injected hydrogen), for example, has been around for decades. New methods have been developed in addition to this.

**Reason**

Although the Fischer-Tropsch process is well known, it is misleading to use just one method as an example.

**Voting:**

For	53
Against	89
Abstentions	30

**Point 4.3.2 (Amendment 12)**

Amend as follows:

~~*The process cannot be applied to wood waste or bark, but requires wood of the highest quality (which creates competition with furniture and veneering), because foreign molecules which are specifically present in wood waste and bark impede the process.*~~

*In line with the principle of resource efficiency, these processes can be applied to logging residue, industrial by-product streams, and thinnings collected in the process of forest management. This makes for more efficient use of wood, and does not result in high-quality logs being used to produce energy.*

**Reason**

The original text was inaccurate. The processes enable more efficient use of wood.

**Voting:**

For	54
Against	96
Abstentions	27

**Point 4.3.3 (Amendment 13)**

Amend as follows:

*This process is extremely energy intensive. 1 000 kg of the finest quality logs (60 wt% organic material) can be turned into 135 kg of diesel fuel. More than 85% of the energy introduced in the form of wood is lost in this process; no more than 15% becomes "advanced biofuel". This means that from a forest of 1 000 trees, 850 are used up as processing energy to obtain fuel from fewer than 150 trees. With subsequent combustion of the BtL fuel in car engines, the entirety of the CO<sub>2</sub> captured by all 1 000 trees through photosynthesis is released. When properly conducted, this process is extremely energy- and resource-efficient. The best quality logs are still used to produce sawn timber and other products, and by-products such as bark, sawdust and forest scraps are processed to make transport fuels, electricity and heating. 526 kg of methanol and 205 kg of FT diesel can be produced from 1000 kg of dry wood. This means that about 60% of the energy content of wood can be converted to methanol or some 50% to diesel fuel using technologies that are already industrially proven. Processes are being developed with which it will be possible to improve efficiency by a further 5%. If fuel production is integrated into the forestry industry or other industries that consume heat, it will be possible to harness the heat produced as a by-product of the process, bringing the total efficiency of wood use to a level of 70-80%.*

**Reason**

The statement is not correct and gives a completely wrong impression of current biofuel production.

**Voting:**

For	66
Against	99
Abstentions	24

**Point 4.3.5 (Amendment 15)**

Amend as follows:

*Nevertheless, this process is presented in EU renewable energy policy as largely CO<sub>2</sub>-neutral, precisely because it involves using wood as processing energy. At the same time, the EU plans to build carbon capture and storage infrastructure. What advantage does this offer in comparison to transforming CO<sub>2</sub> into wood and storing it there long term, rather than releasing it anew by burning it to produce "advanced biofuels", for example? Wood is considered to be a proven carbon-neutral energy source in view of the time it takes for trees to grow. Use of biomass has been shown to have positive climate effects by improving forest*



growing capacity and increasing carbon sequestration, and because it replaces the use of fossil fuels and other non-renewable materials.

**Reason**

Sustainable forestry and increased use of wood demonstrably increase the carbon-binding capacity of wood and function as a substitute for non-renewable materials. It is misleading to say that forests would work as a more efficient carbon sink if they were excluded from use.

**Voting:**

For	60
Against	96
Abstentions	25

**Point 1.5** (Amendment 1)

Amend as follows:

~~Another reason why the ILUC approach adopted by the Commission is questionable is that it is intended to apply to liquid fuel sources, but not gaseous or solid ones. The EESC does not agree with this.~~

**Reason**

Given that the ILUC approach appears to be problematic as a whole, it does not make sense to argue for it to be applied to other energy sources as well. Separate sustainability criteria are currently being developed for gaseous and solid fuel sources. The reservations expressed in this opinion should be addressed before the ILUC approach is recommended elsewhere.

**Voting:**

For	56
Against	93
Abstentions	36

**Point 1.7** (Amendment 9)

Amend as follows:

~~In the case of what the Commission calls "advanced" biofuels, which it now wants to promote, the EESC is concerned that valuable potential carbon sinks (such as wood, straw and leaves)~~

~~will be used to produce fuels, which would increase CO<sub>2</sub> levels in the atmosphere (see point 4).~~

**Reason**

The idea is not to use Europe's deciduous or coniferous forests to produce advanced biofuels, just thinnings and wood scraps. With current techniques, biofuels are more efficient than the original text suggests; see the amendment to point 4.3.3.

**Voting:**

For	47
Against	121
Abstentions	18

---