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# A sustainable bioenergy policy for the period after 2020

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## Introduction

EU Member States have agreed on a new policy framework for climate and energy, including EU-wide targets for the period between 2020 and 2030. The targets include reducing the Union's greenhouse gas (GHG) emissions by 40 % relative to emissions in 2005 and ensuring that at least 27 % of the EU's energy comes from renewable sources. They should help to make the EU's energy system more competitive, secure and sustainable, and help it meet its long-term (2050) GHG reductions target.

In January 2014, in its Communication on A policy framework for climate and energy in the period from 2020 to 2030,[1] the Commission stated that '[a]n improved biomass policy will also be necessary to maximise the resource-efficient use of biomass in order to deliver robust and verifiable greenhouse gas savings and to allow for fair competition between the various uses of biomass resources in the construction sector, paper and pulp industries and biochemical and energy production. This should also encompass the sustainable use of land, the sustainable management of forests in line with the EU's forest strategy and address indirect land-use effects as with biofuels'.

In 2015, in its Energy Union strategy,[2] the Commission announced that it would come forward with an updated bioenergy sustainability policy, as part of a renewable energy package for the period after 2020.

Bioenergy is the form of renewable energy used most in the EU and it is expected to continue to make up a significant part of the overall energy mix in the future. On the other hand, concerns have been raised about the sustainability impacts and competition for resources stemming from the increasing reliance on bioenergy production and use.

Currently, the Renewable Energy Directive[3] and the Fuel Quality Directive[4] provide an EU-level sustainability framework for biofuels[5] and bioliquids.[6] This includes harmonised sustainability criteria for biofuels and provisions aimed at limiting indirect land-use change,[7] which were introduced in 2015.[8]

In 2010, the Commission issued a Recommendation[9] that included non-binding sustainability criteria for solid and gaseous biomass used for electricity, heating and cooling (applicable to installations with a capacity of over 1 MW). Sustainability schemes have also been developed in a number of Member States.

The Commission is now reviewing the sustainability of all bioenergy sources and final uses for the period after 2020. Identified sustainability risks under examination include lifecycle greenhouse gas emissions from bioenergy production and use; impacts on the carbon stock of forests and other ecosystems; impacts on biodiversity, soil and water, and emissions to the air; indirect land use change impacts; as well as impacts on the competition for the use of biomass between different sectors (energy, industrial uses, food). The Commission has carried out a number of studies to examine these issues more in detail.

The development of bioenergy also needs to be seen in the wider context of a number of priorities for the Energy Union, including the ambition for the Union to become the world leader in renewable energy, to lead the fight against global warming, to ensure security of supply and integrated and efficient energy markets, as well as broader EU objectives such as reinforcing Europe's industrial base, stimulating research and innovation and promoting competitiveness and job creation, including in rural areas. The Commission also stated in its 2015 Communication on the circular economy[10] that it will 'promote synergies with the circular economy when examining the sustainability of bioenergy under the Energy Union'. Finally, the EU and its Member States have committed themselves to meeting the 2030 Sustainable Development Goals.

[1] COM(2014) 15.

[2] COM/2015/080 final.

[3] 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 and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16).

[4] 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 and amending Council Directive 93/12/EEC (OJ L 350, 28.12.1998, p. 58).

[5] Used for transport.

[6] Used for electricity, heating and cooling.

[7] Biomass production can take place on land that was previously used for other forms of agricultural production, such as growing food or feed. Since such production is still necessary, it may be (partly) displaced to land not previously used for crops, e.g. grassland and forests. This process is known as indirect land use change (ILUC); see <http://ec.europa.eu/energy/en/topics/renewable-energy/biofuels/land-use-change>.

[8] See more details on the existing sustainability framework for biofuels and bioliquids in section 5.

[9] COM/2010/0011 final.

[10] Closing the loop – an EU action plan for the circular economy (COM(2015) 614/2).

## 1. General information about respondents

\* 1.1. In what capacity are you completing this questionnaire?

- ☐ academic/research institution
- ☐ as an individual / private person
- ☐ civil society organisation
- ☐ international organisation
- ☐ other
- ☐ private enterprise
- ☒ professional organisation
- ☐ public authority
- ☐ public enterprise

\* 1.4. If you are a professional organisation, which sector(s) does your organisation represent?

- ☒ Agriculture
- ☐ Automotive
- ☒ Biotechnology
- ☒ Chemicals
- ☒ Energy
- ☐ Food
- ☐ Forestry
- ☐ Furniture
- ☐ Mechanical Engineering
- ☐ Other
- ☐ Printing
- ☐ Pulp and Paper
- ☐ Woodworking

1.5. If you are a professional organisation, where are your member companies located?

- ☒ Austria
- ☒ Belgium
- ☒ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☒ Czech Republic
- ☒ Denmark
- ☐ Estonia
- ☒ Finland
- ☒ France
- ☒ Germany
- ☐ Greece
- ☒ Hungary
- ☐ Ireland
- ☒ Italy
- ☐ Latvia
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Malta
- ☒ Netherlands
- ☒ Poland
- ☐ Portugal
- ☐ Romania
- ☒ Slovakia
- ☐ Slovenia
- ☒ Spain
- ☒ Sweden
- ☒ United Kingdom
- ☐ non-EU country(ies)

1.8. If replying as an individual/private person, please give your name; otherwise give the name of your organisation

200 character(s) maximum (195 characters left)

ePURE

1.9. If your organisation is registered in the Transparency Register, please give your Register ID number.

(If your organisation/institution responds without being registered, the Commission will consider its input as that of an individual and will publish it as such.)

200 character(s) maximum (186 characters left)

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## 1.10. Please give your country of residence/establishment

- ☐ Austria
- ☒ Belgium
- ☐ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Estonia
- ☐ Finland
- ☐ France
- ☐ Germany
- ☐ Greece
- ☐ Hungary
- ☐ Ireland
- ☐ Italy
- ☐ Latvia
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Malta
- ☐ Netherlands
- ☐ Poland
- ☐ Portugal
- ☐ Romania
- ☐ Slovakia
- ☐ Slovenia
- ☐ Spain
- ☐ Sweden
- ☐ United Kingdom
- ☐ Other non-EU European country
- ☐ Other non-EU Asian country
- ☐ Other non-EU African country
- ☐ Other non-EU American country

## \* 1.11. Please indicate your preference for the publication of your response on the Commission's website:

(Please note that regardless the option chosen, your contribution may be subject to a request for access to documents under [Regulation 1049/2001](#) on public access to European Parliament, Council and Commission documents. In this case the request will be assessed against the conditions set out in the Regulation and in accordance with applicable [data protection rules](#).)

- ☒ Under the name given: I consent to publication of all information in my contribution and I declare that none of it is subject to copyright restrictions that prevent publication.
- ☐ Anonymously: I consent to publication of all information in my contribution and I declare that none of it is subject to copyright restrictions that prevent publication.
- ☐ Please keep my contribution confidential. (it will not be published, but will be used internally within the Commission)

## Perceptions of bioenergy

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## 2.1. Role of bioenergy in the achievement of EU 2030 climate and energy objectives

Please indicate which of the statements below best corresponds to your perception of the role of bioenergy in the renewable energy mix, in particular in view of the EU's 2030 climate and energy objectives:

- ☒ Bioenergy should continue to play a dominant role in the renewable energy mix.
- ☐ Bioenergy should continue to play an important role in the renewable energy mix, but the share of other renewable energy sources (such as solar, wind, hydro and geothermal) should increase significantly.
- ☐ Bioenergy should not play an important role in the renewable energy mix: other renewable energy sources should become dominant.

## 2.2. Perception of different types of bioenergy

Please indicate, for each type of bioenergy described below, which statement best corresponds to your perception of the need for public (EU, national, regional) policy intervention (tick one option in each line):

|   | Should be further promoted | Should be further promoted, but within limits | Should be neither promoted nor discouraged | Should be discouraged | No opinion                       |
|---|----------------------------|---|--|-----------------------|----------------------------------|
| Biofuels from food crops  | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Biofuels from energy crops (grass, short rotation coppice, etc.)                | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Biofuels from waste (municipal solid waste, wood waste)                         | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Biofuels from agricultural and forest residues                                  | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Biofuels from algae   | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Biogas from manure  | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Biogas from food crops (e.g. maize)   | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Biogas from waste, sewage sludge, etc.  | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat and power from forest biomass (except forest residues)                     | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat and power from forest residues (tree tops, branches, etc.)                 | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat and power from agricultural biomass (energy crops, short rotation coppice) | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat and power from industrial residues (such as sawdust or black liquor)       | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat and power from waste   | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Large-scale electricity generation (50 MW or more) from solid biomass           | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Commercial heat generation from solid biomass                                   | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Large-scale combined heat and power generation from solid biomass               | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Small-scale combined heat and power generation from solid biomass               | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Heat generation from biomass in domestic (household) installations              | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input checked="" type="radio"/> |
| Bioenergy based on locally sourced feedstocks                                   | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Bioenergy based on feedstocks sourced in the EU                                 | <input type="radio"/>      | <input checked="" type="radio"/>              | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |
| Bioenergy based on feedstocks imported from non-EU countries                    | <input type="radio"/>      | <input type="radio"/>                         | <input checked="" type="radio"/>           | <input type="radio"/> | <input type="radio"/>            |
| Other   | <input type="radio"/>      | <input type="radio"/>                         | <input type="radio"/>                      | <input type="radio"/> | <input type="radio"/>            |

## 3. Benefits and opportunities from bioenergy

## 3.1. Benefits and opportunities from bioenergy

Bioenergy (biofuel for transport, biomass and biogas for heat and power) is currently promoted as it is considered to be contributing to the EU's renewable energy and climate objectives, and also having other potential benefits to the EU economy and society.

Please rate the contribution of bioenergy, as you see it, to the benefits listed below (one answer per line):

|   | of critical importance           | important                        | neutral                          | negative              | No opinion            |
|---|----------------------------------|----------------------------------|----------------------------------|-----------------------|-----------------------|
| Europe's energy security: safe, secure and affordable energy for European citizens  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Grid balancing including through storage of biomass (in an electricity system with a high proportion of electricity from intermittent renewables) | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Reduction of GHG emissions  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Environmental benefits (including biodiversity)   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Resource efficiency and waste management  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Boosting research and innovation in bio-based industries  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Competitiveness of European industry  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Growth and jobs, including in rural areas   | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| Sustainable development in developing countries   | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |

Please specify the "other" choice

200 character(s) maximum (45 characters left)

Promoting efficient and productive European agriculture by balancing out fluctuations in agricultural production concerning quantity as well as quality.

## 3.2. Any additional views on the benefits and opportunities from bioenergy? Please explain

2500 character(s) maximum (1 characters left)

Since 1990, EU transport emissions have increased by 36% and are now responsible for about 25% of EU's total GHG emissions, a situation that must be addressed if Europe is serious about its climate objectives.

- In the absence of decarbonisation targets, GHG emissions from the transport sector will increase. A study by E4Tech (Feb. 2016) found that in the absence of an EU wide binding framework for transport decarbonisation, part of the GHG savings triggered by biofuels would be lost, and the targeted reduction of 30% compared to 2005 would be hardly achievable.
- EU's dependence on imported oil is still increasing, in particular in the EU transport sector that is 94% dependent on oil, 88% of which is imported. Reliance on imported oil hampers Europe's current and long-term economic competitiveness

European renewable ethanol helps to address these challenges:

- European renewable ethanol saves up to 90% emissions compared to fossil fuel, and currently delivers certified savings of 60% on average. It is the most cost-effective means to reduce GHG emissions in transport. A study by E4Tech notes that with a binding policy framework on transport, the GHG savings triggered by renewable fuels could increase by 60%.
- Renewable fuels such as ethanol are the only option to reduce the carbon footprint of today's vehicle fleet. They are already available in significant volumes and can be used in the existing infrastructure.
- Renewable fuels improve Europe's energy security by diversifying energy sources with EU domestic production.

In addition,

- The EU ethanol industry has generated and sustained 50,000 jobs and EUR 8 billion investments since 2003, helping to keep money and jobs inside Europe.
- The production of ethanol within the EU provides valuable protein-rich co-products for the EU feed and food market, a solution to the EU's protein deficit, reducing imports by hundreds of millions of Euros every year and alleviating pressure on agricultural land in 3rd countries.
- The 2009 policies failed to bring to the market innovative advanced biofuels. While European companies are world leaders in advanced biofuels, their investments are now being made outside the EU. To avoid 'innovation leakage', the EU must urgently create the right policy conditions to move from R&D to commercial deployment.
- Growth in the renewable ethanol sector will benefit other industrial sectors by providing a renewable building block to make chemicals, polymers and biomaterials.

## 4. Risks from bioenergy production and use

A number of risks have been identified (e.g. by certain scientists, stakeholders and studies) in relation to bioenergy production and use. These may concern specific biomass resources (agriculture, forest, waste), their origin (sourced in the EU or imported) or their end-uses (heat, electricity, transport).

Please rate the relevance of each of these risks as you see it (one answer per line):

|   | critical              | significant                      | not very significant             | non-existent                     | No opinion                       |
|---|-----------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Change in carbon stock due to deforestation and other direct land-use change in the EU  | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            |
| Change in carbon stock due to deforestation and other direct land-use change in non-EU countries  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |
| Indirect land-use change impacts  | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |
| GHG emissions from the supply chain (e.g. cultivation, processing and transport)  | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| GHG emissions from combustion of biomass ('biogenic emissions')   | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| Impacts on air quality  | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            |
| Impacts on water and soil   | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| Impacts on biodiversity   | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| Varying degrees of efficiency of biomass conversion to energy   | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> |
| Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks and/or subsidies for specific uses | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            |
| Internal market impact of divergent national sustainability schemes   | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |
| Other   | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            |

4.2. Any additional views on the risks from bioenergy production and use? Please explain

2500 character(s) maximum (1 characters left)

One of the successes of the RED is that to comply with the targets, the biofuels sold in the EU have to comply with strict sustainability criteria, a system that is unique in the world and should be maintained. Yet, the biofuels debate has been contaminated by claims that the feedstocks demand for the production of biofuels had adverse effects that could outweigh the positives. These claims have been proven to be false:

- The claim that the EU biofuels policy was driving land grabbing in developing countries has proved to be false, and recognized as such by the Commission (renewable energy progress and biofuel sustainability, 2014).
- Food security is not altered by the production of European ethanol. This is confirmed by historical real world data that were not available in 2008 when this debate started, as well as the 2015 Renewable Energy Progress report. FAO data shows that the deflated Cereals Price Index in 2015 was as low as in 2006, while the production of ethanol globally doubled in the meantime. This clearly demonstrates that ethanol production and agricultural commodity prices are not linked; contrary to cereals and oil prices. Furthermore, the majority of crops used for the production of European ethanol allow for the co-production of animal feed. In 2014, ePURE members produced 3.3 million tonnes of animal feed, enough to feed 2.1 million dairy cows, 10% of the EU dairy herd. It also displaced nearly 10% of Europe's soybean and soybean meal import by volume. Reducing imports of animal feed improves Europe's environmental footprint and helps reduce land conversion and GHG emissions resulting from agricultural land use outside of Europe.
- ILUC: Concerns over the risk of land displacement for other production caused by the production of feedstocks for biofuels were expressed. The IFPRI and GLOBIOM reports have shown that the risk of ILUC displacement and corresponding emissions is low when it comes to ethanol produced from European feedstocks, which is 97% the case for European ethanol production. Mitigation can also reduce the risk of ILUC: a 2014 study by the University of Utrecht found that ILUC risks could be mitigated through agricultural yield increases, or when underutilized and unused land is brought into production. Low ILUC risk biofuels like European ethanol, identified as such by the best available science, or for which ILUC mitigation has taken place, should be entitled to contribute towards the 2030 targets without any restriction.

## 5. Effectiveness of existing EU sustainability scheme for biofuels and bioliquids

In 2009, the EU established a set of sustainability criteria for biofuels (used in transport) and bioliquids (used for electricity and heating). Only biofuels and bioliquids that comply with the criteria can receive government support or count towards national renewable energy targets. The main criteria are as follows:

- Biofuels produced in new installations must achieve GHG savings of at least 60 % in comparison with fossil fuels. In the case of installations that were in operation before 5 October 2015, biofuels must achieve a GHG emissions saving of at least 35 % until 31 December 2017 and at least 50 % from 1 January 2018. Lifecycle emissions taken into account when calculating GHG savings from biofuels include emissions from cultivation, processing, transport and direct land-use change;
- Biofuels cannot be grown in areas converted from land with previously (before 2008) high carbon stock, such as wetlands or forests;
- Biofuels cannot be produced from raw materials obtained from land with high biodiversity, such as primary forests or highly biodiverse grasslands.

In 2015, new rules<sup>[1]</sup> came into force that amend the EU legislation on biofuel sustainability (i.e. the Renewable Energy Directive and the Fuel Quality Directive) with a view to reducing the risk of indirect land-use change, preparing the transition to advanced biofuels and supporting renewable electricity in transport. The amendments:

- limit to 7 % the proportion of biofuels from food crops that can be counted towards the 2020 renewable energy targets;
- set an indicative 0.5 % target for advanced biofuels as a reference for national targets to be set by EU countries in 2017;
- maintain the double-counting of advanced biofuels towards the 2020 target of 10 % renewable energy in transport and lay down a harmonised EU list of eligible feedstocks; and
- introduce stronger incentives for the use of renewable electricity in transport (by counting it more towards the 2020 target of 10 % renewable energy use in transport).

[1] Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources (OJ L 239, 15.9.2015, p. 1).

#### 5.1. Effectiveness in addressing sustainability risks of biofuels and bioliquids

In your view, how effective has the existing EU sustainability scheme for biofuels and bioliquids been in addressing the risks listed below? (one answer per line)

|  | effective                        | partly effective                 | neutral               | counter-productive               | No opinion            |
|--|----------------------------------|----------------------------------|-----------------------|----------------------------------|-----------------------|
| GHG emissions from cultivation, processing and transport | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| GHG emissions from direct land-use change                | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| Indirect land-use change                                 | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| Impacts on biodiversity                                  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| Impact on soil, air and water                            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> |

Any additional comments?

2500 character(s) maximum (604 characters left)

-On ILUC, the political solution to set a cap on crop-based biofuel is a one size fits all reply to a concern that affect very differently the different biofuels production pathways. European ethanol is a low ILUC risk biofuels whose contribution to decarbonising transport is significant and should not be restricted. Capping its contribution only worsens climate change.

-As per answer on 4.2, a scheme needs to put in place that incentivises the mitigation of ILUC feedstock. The GLOBIOM report reveals ways how this can be achieved.

- o The report shows that global efforts to reduce deforestation and halt peatland drainage would reduce the LUC emissions associated to the European biofuels policy to just 4g CO<sub>2</sub>/MJ.
- o The same report reveals how the impact of these carbon-dense soils can be avoided: in the analysis for the production of energy crops (e.g. miscanthus and switchgrass), these are modeled to be grown principally on abandoned cropland and on a small amount of grassland, resulting in negative LUC emissions. It seems then feasible to convert high ILUC risk crops into low/no ILUC risk crops simply by requiring them to be cropped on this abandoned cropland. The report even identifies the huge scale of this abandoned cropland around Europe (and elsewhere) and finds it would be 'a good policy option'.
- o Other reports have explored other possible ILUC mitigation measures such as yield increases above baseline.

-In relation to the impact on 'soil, air and water', the answer is motivated by the fact the feedstocks produced in Europe and used in the production of biofuels have to comply with the so-called cross compliance rules under the Common Agricultural Policy. This only applies to domestically produced feedstocks though, and it is only at a reporting level that the European level considers the impact of its policy on soil, air and water in third countries.

#### 5.2. Effectiveness in promoting advanced biofuels

In your view, how effective has the sustainability framework for biofuels, including its provisions on indirect land-use change, been in driving the development of 'advanced' biofuels, in particular biofuels produced from ligno-cellulosic material (e.g. grass or straw) or from waste material (e.g. waste vegetable oils)?

- ☐ very effective
- ☐ effective
- ☐ neutral
- ☒ counter-productive
- ☐ no opinion

What additional measures could be taken to further improve the effectiveness in promoting advanced biofuels?

2500 character(s) maximum (1003 characters left)

Multipliers, for some biofuels and electricity, have not incentivised the deployment of innovative low carbon technologies such as advanced biofuels (Annex IX-A) but some already available pathways such as imported UCOME which has questionable sustainability and carbon footprint credentials. Instead, such accounting trick is of sole use of Member States that can reach their 10% target with less effort, with the perverse consequence that more fossil energy is used.

The primary support that lignocellulosic ethanol now needs is the market introduction of a higher ethanol blend in petrol, i.e. E20 or E25. This is crucial because the EU petrol market has shrunk to the point whereby during the next decade the conventional ethanol sector in Europe will be fully able to supply an E10 petrol market without imports. Without expansion of the market the window for investing in and paying back the investment in lignocellulosic ethanol is fast closing.

In addition, policies to encourage the deployment of advanced biofuels before 2020 should be improved by mandating their consumption within a bankable regulatory framework which would define a 2025 and 2030 target, set perspectives Post- 2030. In parallel, the EU should sharpen the definition of advanced biofuels, preclude grandfathering, define both waste and residues properly to avoid distortions of current market structures, and ensure that the use of waste to refine biofuels is considered as recycling in the waste hierarchy.

### 5.3. Effectiveness in minimising the administrative burden on operators

In your view, how effective has the EU biofuel sustainability policy been in reducing the administrative burden on operators placing biofuels on the internal market by harmonising sustainability requirements in the Member States (as compared with a situation where these matter would be regulated by national schemes for biofuel sustainability)?

- ☒ very effective
- ☐ effective
- ☐ not effective
- ☐ no opinion

What are the lessons to be learned from implementation of the EU sustainability criteria for biofuels? What additional measures could be taken to reduce the administrative burden further?

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The current sustainability criteria are working well with respect to EU supply chains, but nothing has been done to address risks of fraud. Any system that has no safeguards against fraud is a system that invites fraud. With respect to bioenergy, fraud is most likely regarding claims of imported biofuels traded by entities without actual assets who do not face reputation risks as they can open and close with no consequences.

This leaves EU investors at a competitive disadvantage, both because they face competition from fraudulent competitors and because any fraud will likely besmirch all biofuels. Going forward, the EU needs to police sustainability with meaningful audits and meaningful penalties meant to deter and prevent suspect practices. The bar needs to be raised on sustainability.

### 5.4. Deployment of innovative technologies

In your view, what is needed to facilitate faster development and deployment of innovative technologies in the area of bioenergy? What are the lessons to be learned from the existing support mechanisms for innovative low-carbon technologies relating to bioenergy?

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The EU has failed to capitalise on its R&D investments for innovative low carbon advanced biofuels technologies. While the EU excels at financing the initial phases of the Research and Development, up to the pilot and demonstration plants, it has so far failed to help innovative technologies bridge the innovation valley of death, unlike in other jurisdictions. FP7 funds have been dedicated to cellulosic ethanol to build first of its kind plants in the EU. While this kind of support is important, it is not enough, and there have even been cases of biorefineries shutting down and cancelling their projects due to the lack of policy uncertainty. The technology is being deployed on large scale elsewhere where framework conditions appear more favourable to investments decisions, e.g. the US.

## 6. Effectiveness of existing EU policies in addressing solid and gaseous biomass sustainability issues



6.1. In addition to the non-binding criteria proposed by the Commission in 2010, a number of other EU policies can contribute to the sustainability of solid and gaseous bioenergy in the EU. These include measures in the areas of energy, climate, environment and agriculture.

In your view, how effective are current EU policies in addressing the following risks of negative environmental impacts associated with solid and gaseous biomass used for heat and power? (one answer per line)

|  | effective             | partly effective      | neutral               | counter-productive    | No opinion                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|
| Change in carbon stock due to deforestation, forest degradation and other direct land-use change in the EU                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Change in carbon stock due to deforestation, forest degradation and other direct land-use change in non-EU countries             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Indirect land-use change impacts   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| GHG emissions from supply chain, e.g. cultivation, processing and transport  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| GHG emissions from combustion of biomass ('biogenic emissions')  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Air quality  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Water and soil quality   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Biodiversity impacts   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Varying degrees of efficiency of biomass conversion to energy  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Other  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>            |

6.2. Any additional views on the effectiveness of existing EU policies on solid and gaseous biomass? Please explain

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Needed is a level playing field between the uses of biomass, irrespective of the end use.

7. Policy objectives for a post-2020 bioenergy sustainability policy

7.1. In your view, what should be the key objectives of an improved EU bioenergy sustainability policy post-2020? Please rank the following objectives in order of importance: most important first; least important 9th/10th (you can rank fewer than 9/10 objectives):

|  | 1st                              | 2nd                              | 3rd                              | 4th                              | 5th                              | 6th                              | 7th                              | 8th                              | 9th                              | 10th                  |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------|
| Contribute to climate change objectives  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Avoid environmental impacts (biodiversity, air and water quality)                        | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Mitigate the impacts of indirect land-use change   | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Promote efficient use of the biomass resource, including efficient energy conversion     | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Promote free trade and competition in the EU among all end-users of the biomass resource | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| Ensure long-term legal certainty for operators   | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Minimise administrative burden for operators   | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| Promote energy security  | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Promote EU industrial competitiveness, growth and jobs                                   | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
| Other  | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |

7.2. Any other views? Please specify

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## 8. EU action on sustainability of bioenergy

8.1. In your view, is there a need for additional EU policy on bioenergy sustainability?

- ☐ No: the current policy framework (including the sustainability scheme for biofuels and bioliquids, and other EU and national policies covering solid and gaseous biomass) is sufficient.
- ☒ Yes: additional policy is needed for solid and gaseous biomass, but for biofuels and bioliquids the existing scheme is sufficient.
- ☐ Yes: additional policy is needed on biofuels and bioliquids, but for solid and gaseous biomass existing EU and national policies are sufficient.
- ☐ Yes: a new policy is needed covering all types of bioenergy.

8.2. In your view, and given your answers to the previous questions, what should the EU policy framework on the sustainability of bioenergy include? Please be specific

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As per the above response, the existing sustainability criteria and corresponding certification scheme for biofuels is sufficient to address concerns and ensure the sustainability of the biofuels placed on the EU market. What is needed is:  
-for the sustainability criteria to apply to biomass irrespective of the end use if demand is incentivized by the policy;  
-for the policy to further incentivise those forms of energy that deliver high greenhouse gas savings and have recognised low or no risk of ILUC.

## 9. Additional contribution

Do you have other specific views that could not be expressed in the context of your replies to the above questions?

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Q.2.1: Bioenergy should continue to play a significant role in this mix, yet ePURE believes it is highly inappropriate to ask what should be the bioenergy contribution by opposing it to other renewable energy sources and referring to dominant roles. All should have an increased and significant role.

Q. 2.2: ePURE has answered that biofuels and bioenergy should be further promoted but within limits. The limits being those of sustainability and traceability requirements defined by the legislation. These should apply equally to all renewable sources.

Q. 4.1: ILUC impacts- the question is too simplistic. What the best available science shows (GLOBIOM) is that some biofuels pathways have low, medium, high risks of ILUC. European ethanol has 'low/no risk of ILUC'. The science confirms that European ethanol makes a strong contribution to climate change mitigation and should therefore be entitled to contribute towards the EU 2030 targets without any restriction. Assessing the (I)ILUC impacts of the biofuels policy is done on the basis of a consequential lifecycle analysis, as explained by the Commission in 2012 (SWD(2012) 343 final): 'it is appropriate to compare overall emissions from biofuels to global marginal emissions from fossil fuels not being extracted as a consequence of using biofuel. These global marginal emissions from fossil fuels are expected to be higher than the average emissions of fossil fuels used in the EU. (...) As a consequence, the overall greenhouse gas emissions balance of the estimated biofuel mix compared to fossil fuels is expected to be positive.' In its analysis of the overall balance of biofuels emissions incl. LUC emissions, the Commission should continue to include the positive impact of biofuels that reduce the demand for marginal oil.

Q.4.1: air quality: Petrol blended with higher levels of ethanol has lower level of emissions than diesel and non-blended petrol. Adding ethanol has a positive impact on air quality: it contains more than one third oxygen, which, when added to petrol, leads to a more complete combustion of fuel in the engine, resulting in fewer toxic particulate emissions. Many additives commonly used in petrol to increase octane levels contain carcinogens, such as benzene, which are highly toxic and harmful to humans. Renewable ethanol is a high-octane fuel additive that improves engine efficiency and is a substitute for benzene, while also being virtually sulphur-free. With higher ethanol blends (min. E20), the air quality benefits and emissions gains would be maximized.

Q4.1: Competition between biomass uses. Please to consult the annexed booklet.

ePURE believes that the existing calculation methodology for actual values in the RED Annex IV and FQD Annex IV is sound and should be maintained. Nonetheless, some minor improvements could be sought to strengthen the methodology and its reliability even further.

1.A sound methodological framework for estimating actual values

- The calculation procedure for actual values is administratively uncomplicated.
- It provides the necessary flexibility for operators to use relevant cultivation data. Cultivation data can be provided at NUTS 2 level, rather than at farm level. Furthermore, N2O emission data can be provided at national, regional or farm level.

2.Minor improvements to further strengthen the existing methodology could be sought

2.1. Annex V – 19 (Fossil Fuel Comparator)

ePURE notes that the Fossil Fuel Comparator (FFC) for biofuels of point 19 is outdated. When Member States publish their reports on the FQD, the FFC should be updated accordingly and swiftly in accordance with the intent of the law.

2.2. Annex V – 7 and 8 (a) (Degraded land bonus)

The methodology provides for a bonus when the biomass for biofuels is obtained from restored degraded land in January 2008. This excludes more recently degraded and contaminated land. It would be appropriate to update the cut-off date.

2.3. Inputs with little or no effect

According to the Communication on the practical implementation of the EU biofuels scheme it "would not seem necessary to include in the calculation inputs which will have little or no effect on the result, such as chemicals used in low amounts in processing". Yet, the Commission note on the conducting and verifying of actual calculations of GHG emission savings suggests that "it is necessary to apply standard calculation values such as GHG intensities for chemicals and energy inputs which do not depend on the biofuel production process itself". Voluntary schemes should use the non-exhaustive list of standard calculation values published by the Commission.

In order to ensure that operators will not be required de facto to include trivial elements in their calculations it would appear sensible to define further the meaning of "little impact". This could be achieved for example through a criteria suggesting that emissions of up to 1g CO<sub>2</sub> e / MJ should not be included.

Finally, you may upload here any relevant documents, e.g. position papers, that you would like the European Commission to be aware of.

ePURE - How ethanol is produced sustainably.pdf

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