

A sustainable bioenergy policy for the period after 2020

Fields marked with * are mandatory.

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

* 1.2. If you are a private or public enterprise, could you please indicate your principal business sector?

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

* 1.3. If you are a private or public enterprise, could you please indicate the size of your company?

(Medium-sized enterprise: an enterprise that employs fewer than 250 persons and whose annual turnover does not exceed EUR 50 million or whose annual balance-sheet total does not exceed EUR 43 million.

Small enterprise: an enterprise that employs fewer than 50 persons and whose annual turnover and/or annual balance-sheet total does not exceed EUR 10 million.

Micro-enterprise: an enterprise that employs fewer than 10 persons and whose annual turnover and/or annual balance-sheet total does not exceed EUR 2 million.)

- large enterprise
- medium-sized enterprise
- small enterprise
- micro-enterprise
- I don't know

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

200 character(s) maximum

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

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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

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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Biofuels from waste (municipal solid waste, wood waste)	<input checked="" type="radio"/>	<input 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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from manure	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from food crops (e.g. maize)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from waste, sewage sludge, etc.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from forest biomass (except forest residues)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from forest residues (tree tops, branches, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from agricultural biomass (energy crops, short rotation coppice)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from industrial residues (such as sawdust or black liquor)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from waste	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Large-scale electricity generation (50 MW or more) from solid biomass	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commercial heat generation from solid biomass	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Large-scale combined heat and power generation from solid biomass	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Small-scale combined heat and power generation from solid biomass	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat generation from biomass in domestic (household) installations	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 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 checked="" type="radio"/>

Please specify the "other" choice

200 character(s) maximum

Comment on 2.2.: Biomass sustainability criteria must be suitably robust and consistent across the energy sectors.

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 type="radio"/>	<input checked="" 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 type="radio"/>	<input checked="" 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 checked="" type="radio"/>	<input 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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable development in developing countries	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Please specify the "other" choice

200 character(s) maximum

Promoting good and sustainable agricultural practice and carbon accounting of products will improve performance of other agricultural sectors both in Europe and globally.

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

2500 character(s) maximum

Transport will remain predominately tied to liquid fuels to 2030 (see EC Study "EU Energy, Transport, and GHG Emissions to 2050") given their high energy density, relative compatibility with existing vehicles and infrastructure, and the limited alternatives that are at commercial readiness. Sustainable biofuels with low carbon intensities that meet the RED sustainability criteria represent the most realistic commercial solution to reduce CO2 emissions in the road (especially heavy duty), aviation and marine transport sectors over the next few decades. Further, sustainable biofuels represent the least cost option of decarbonisation in this sector. Biofuels could be the final low carbon fuels for heavy duty vehicles, marine and aviation and also can act as a transition fuel for light duty transport while other low-carbon fuels and vehicles are developed to commercial readiness. Biofuels will also help diversify the transport fuel pool and improve energy security with economic and rural development opportunities. The rural development opportunities may be particularly important as European food production becomes more efficient and less land is needed for food production.

Additional benefits of biomass:

- Energy crops provide alternative sources of income for the agricultural sector. Increased capital investment in these crops, for example to modernise and improve farms and bring them to higher standards with known technology, can help increase incomes in this sector.
- Energy crops provide the opportunity for farmers to use their land more effectively by improving their overall resource use efficiency. The net effect of energy crops therefore may result in a 'virtuous circle' where more efficient and improved yields will increase total production, including food crops. circle.
- Managed forests provide better total carbon budgets (within the forest + product half lives and substitutions) than unmanaged forests and provide a driver for forestation.
- Conventional bioenergy crops provide the opportunity for crops to move between markets (eg sugarcane in Brazil) so stabilising the farming sector).
- The bioenergy sector is raising the profile of the food, feed, fibre and other sectors in terms of their carbon contributions and overall responsible agricultural practises.

Bioenergy managed by the CAP benefits the sustainable economy. Ecosystem functions are improved by perennial energy crops, allowing effective land use, financial stability, and resilience

4. Risks from bioenergy production and use

4.1. Identification of risks

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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Change in carbon stock due to deforestation and other direct land-use change in non-EU countries	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indirect land-use change impacts	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GHG emissions from the supply chain (e.g. cultivation, processing and transport)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GHG emissions from combustion of biomass ('biogenic emissions')	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Impacts on air quality	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify the "other" choice

200 character(s) maximum

Perceived competition

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

2500 character(s) maximum

Comment on 4.1: With RED sustainability criteria and consistent CO2 accounting across sectors, these risks can be mitigated. Mitigation is dependent on a substantial sustainable biomass supply chain for all sectors.

Answer to 4.2: Biomass sustainability criteria and CO2 accounting rules should be consistent across all sectors to create a level playing field. If these criteria are more stringent for one end use over another, this is likely to competitively disadvantage that end use by making it more difficult and expensive to comply. Different CO2 accounting rules for different sectors may lead to inaccurate accounting of the CO2 benefits of the various biomass applications. In the power sector specifically these different rules incentivise suboptimal behaviours that will extend the life of inefficient coal firing power stations.

As sectors increasingly compete for the same limited bioenergy resources, policies must be designed to support the optimal allocation of biomass. For example, biomass co-firing subsidies effectively prolong the life of inefficient coal-fired power stations. Rather than incentivise switching to low-carbon options, such subsidies may result in the sub-optimal allocation of biomass, potentially increasing costs and lowering CO2 abatement potential. Policy makers should take steps to ensure the availability of scarce resources to those sectors, such as transport, that have limited cost-effective

alternatives available to reduce GHG emissions.

Policies must also ensure limited administrative burden in order to make the use of sustainable, renewable fuels a cost effective abatement option. A single, consistent and harmonised system will help to drive costs down, eliminate burden, combat fraud and improve efficiency and accuracy.

Furthermore, compliance with robust sustainability criteria should be required for renewable energy to count towards established targets. The same sustainability criteria should be applied, regardless of a material's country of origin.

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^[1] 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 type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on soil, air and water	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments?

2500 character(s) maximum

To be fully effective in addressing sustainability risk, any sustainability criteria should be applied to all uses of biomass, including for electricity generation, and not just on biofuels in transport as is currently the case.

The sustainability criteria developed in 2009 encouraged the development and use of biofuels with better and better GHG emissions savings. Similarly, the use of double counting for advanced feedstocks has allowed biofuels from such feedstocks to be used preferentially in Europe for compliance with RED targets.

However, the implementation of the cap on conventional biofuels that came into force via the review of the Renewable Energy Directive in 2015 will mean that, by the 2017 transposition deadline, all conventional biofuels will be treated the same regardless of their GHG savings potential. Recent EC/GLOBIOM reports have shown that some conventional biofuels have very low ILUC risks and thus high GHG saving potential; these biofuels should be encouraged, rather than limited, simply based on their feedstock.

Sustainable biofuels from biomass require sustainable agriculture. Otherwise we risk displacing a regulated activity with one that is not. Substantial volumes of sustainable biomass supply are necessary, and these must be managed at all levels of the supply chain to secure overall GHG reduction and avoidance of iLUC.

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

Shell supports the development of advanced biofuels, i.e. biofuels from feedstock other than food crops and that meet sustainability criteria and are beneficial in terms of lifecycle greenhouse gas emission.

Within Europe the development and uptake of advanced biofuels has been very slow due to the lack of a coherent policy framework that properly addresses the investment risks associated with advanced biofuel. The key risks that policy needs to address are:

- Technologies are not widely tested at commercial scale; and
- High capital costs of first industrial scale demonstration plant.

High technology risk and high capital costs for new, unproven technologies require direct financial support to encourage investments in commercial-scale first plants. Product from these first plants will be more expensive than both fossil-derived fuels and conventional biofuels that are currently on the market. Support can be in the form of capital grants for plant construction and/or price support for the advanced biofuel. Where price support mechanisms are used, they must be guaranteed for a long enough period, e.g. 10 years, to ensure adequate return on investments.

In any post 2020 framework, country or even project-level assessments should be included as a critical element of policy to identify critical sustainability criteria. These assessments could then be used to identify conventional biofuels that perform at a higher level of GHG reduction and sustainability. If it can be shown that biofuels with higher levels of

sustainability and lower carbon intensity exist (through the appropriate land use, planning, analysis, and stakeholder acceptance), then the feedstock should be deemed sustainable and should not count towards the current 7% cap, regardless of feedstock type.

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?

2500 character(s) maximum

Comment on 5.2: Our answer is "Partially effective"
Answer to 5.3: Having a consistent, minimum sustainability requirement administered via the EC certification systems across Europe has been effective in terms of identifying whether a bio component is able to qualify under European MS mandates. The situation would be highly complex if each EU MS had separate sustainability criteria/certification systems. The current system has, however, introduced some administrative burden and inefficiencies through the use of separate, EC-approved systems and processes in each MS. Shell supports the introduction of a centralized EU database for acceptance of sustainability criteria. Under such a scheme, every EU MS would participate, the producer would enter their sustainability data once, and every Proof of Sustainability (PoS) movement that takes place within EU would occur within this database. This uniform reporting would significantly reduce the risk of fraud, alleviate the administrative burden by minimising the paper flow, and improve efficiency and accuracy of the sustainability data as it is input only once and then verified by each entity as it moves along the chain of custody.

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?

2500 character(s) maximum

Within Europe the development and uptake of advanced biofuels has been very slow due to the lack of a coherent policy framework that properly addresses

the investment risks. The key risks that policy needs to address are:

- The technologies are not widely tested at commercial scale; and
- High capital costs of the first industrial scale demonstration plants.

We believe advanced biofuels will require different support mechanisms during the different phases in the product development cycle.

Demonstration phase - proving the technology in first plants. High technology risk and high capital costs for new, unproven technologies require direct financial support to encourage investments in commercial-scale first plants. Product from these first plants will be more expensive than fuels, both fossil-derived and conventional biofuels, that are currently on the market. Support can be in the form of capital grants for plant construction and/or price support for the advanced biofuel product. Where price support mechanisms are used, they must be guaranteed for a long enough period, e.g. 10 years, to ensure adequate return on investments.

Deployment phase - multiplying production from proven technologies. For proven technologies, mandates have shown to be effective mechanisms, providing market certainty for investors. Mandates have been successful in expanding proven technology in conventional biofuels manufacturing in Europe, US and Brazil. In the case of biofuels, mandates should recognise carbon intensity and ensure that advanced biofuels are pulled into the market alongside lower cost and established biofuels.

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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 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 checked="" type="radio"/>	<input type="radio"/>
GHG emissions from 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"/>
Air quality	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>

Please specify the "other" choice

200 character(s) maximum

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

2500 character(s) maximum

For EU biomass policies to be effective it is important that they create a level playing field in terms of the sustainability criteria and CO2 accounting rules for biomass. If such criteria/rules are more stringent for one end use over another, this is likely to competitively disadvantage that end use by

making it more difficult and expensive to comply. In Europe, the sustainability criteria for biomass in transport (i.e. for biofuels and bioliquids) are more stringent than for biomass in power or heating using solid and gaseous biomass. Furthermore, different CO₂ accounting rules for different sectors may lead to potentially inaccurate accounting of the CO₂ benefits of the various biomass applications. For example, under the EU ETS, biomass for power is often inaccurately assumed to be carbon neutral, while in the RED and FQD, the emissions from cultivation, production, transportation and land use change are added to the calculation. The fact that there are currently no binding sustainability criteria for solid and gaseous biomass reduces the effectiveness of EU biomass policies in relation to securing the benefits and addressing the potential risks associated with biomass for energy 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"/>				
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 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure long-term legal certainty for operators	<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"/>
Minimise administrative burden for operators	<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"/>
Promote energy security	<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"/>
Promote EU industrial competitiveness, growth and jobs	<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"/>
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

2500 character(s) maximum

Post-2020 policy must cover all uses of biomass, e.g. power, industry and transport and have the same sustainability criteria for all sectors. The policy needs to be clear and stable over the long term in order to provide investors with sufficient certainty to invest in bioenergy technologies. It must ensure sustainability in the entire supply chain. Shell believes that sustainable liquid biofuels can play an increasingly important role in reducing CO2 combustion emissions from transport. We believe much of the feedstocks for EU biofuels can be sustainably produced in the EU and that, through free trade, the remainder can be sustainably and competitively sourced provided there are no artificial trade barriers. We support a flexible EU agriculture policy, which supports production of food and energy crops. The empirical evidence that land use be spared through agricultural improvements must be understood and accepted as the basis for future bioenergy developments. Sustainable agriculture is essential to ensure that resulting biofuels are sustainable. In addition, life cycle carbon accounting is important to ensure that good forestry and agriculture management practices are properly valued for their carbon benefits. The permitted uses of Ecology Focus Areas should be expanded to include energy grasses. One permitted use in EFA is for Short Rotation Coppice (used in the bioenergy sector). Energy grasses are not permitted, but should be. Under current EU rules, individual projects may submit carbon intensity calculations - rather than reading from a prescribed table. This allowance could be the basis of an exemption from the 7% cap introduced in the iLUC directive, and could include a requirement to demonstrate high levels of sustainability through the appropriate land use planning and analysis, and stakeholder acceptance. This would mean that there are 3 categories of biofuels: 1) biofuels covered by the 7% cap; 2) those biofuels that could, through demonstration of higher standard of sustainability and biofuel CI performance, be moved outside the cap by administrative rule; and, 3) biofuels outside of the cap by definition.

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

5000 character(s) maximum

The post 2020 EU bioenergy sustainability policy must cover all uses of biomass, e.g. power, industry and transport, and must have the same sustainability and CO2 criteria for all sectors. Policy needs to be clear and stable over the long term. This stability is needed to encourage investment in the bioenergy sector. Additionally policy must ensure sustainability in the entire supply chain for all end uses.

9. Additional contribution

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

5000 character(s) maximum

No additional comments

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

Thank you for participation to the consultation!

Contact

✉ SG-D3-BIOENERGY@ec.europa.eu
