

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

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

200 character(s) maximum

Bharadwaj Kummamuru

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

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):

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	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 checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from algae	<input checked="" type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from forest residues (tree tops, branches, etc.)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Heat and power from agricultural biomass (energy crops, short rotation coppice)					
Heat and power from industrial residues (such as sawdust or black liquor)					
Heat and power from waste					
Large-scale electricity generation (50 MW or more) from solid biomass					
Commercial heat generation from solid biomass					
Large-scale combined heat and power generation from solid biomass					
Small-scale combined heat and power generation from solid biomass					
Heat generation from biomass in domestic (household) installations					
Bioenergy based on locally sourced feedstocks					

Bioenergy based on feedstocks sourced in the EU	<input checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify the "other" choice

200 character(s) maximum

Large scale energy generation from biomass should be focused on cogeneration with production and use of both heat and electricity. It improves efficiency and reduces costs.

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

Another advantage of using biofuels is indigenous protein production. Reducing biofuels use will affect local supply and EU may have to depend on imports.

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

2500 character(s) maximum

1. Bioenergy as stored energy

Bioenergy is a viable and sustainable option for storing intermittent energy from renewable energy sources. Along with batteries, bioenergy can provide stability. Excess electricity can be used to convert biomass to dense forms like pellets etc. for future energy needs.

2. Bioenergy in transport

Bioenergy is the only sustainable option for reducing emissions in transport – road, aviation and maritime. Biofuels can reduce emissions, generate jobs and provide for energy security while replacing the use of fossil fuels in the transport sector. This transition can only be reached if bioenergy is pushed much stronger in the next years.

3. Global climate targets

Bioenergy is a crucial piece of the future renewable energy jigsaw puzzle. Biomass has the potential to replace a considerable part of the completely unsustainable fossil fuels, especially in the heat and transport sector. The European Commission (EC) needs urgently a new climate and energy strategy; the current targets are not sufficient at all. By 2030 more than 500 Mtoe renewables are needed, this is about 40% of the total

demand. To satisfy the climate goals, bioenergy along with other renewables working together is crucial.





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 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 type="radio"/>	<input checked="" 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 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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Impacts on air quality	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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					
Internal market impact of divergent national sustainability schemes					
Other					

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

2500 character(s) maximum

In Europe the carbon stock in forests is growing, especially in those countries with a strong bioenergy sector like Sweden or Austria. Biomass is generally produced in a sustainable manner in the EU on the basis of comprehensive European and national regulations for agriculture and forestry. There is no need for further binding sustainability criteria on European level for biomass originating from the member states.

Existing legislation and law enforcement have to take care of a sustainable management in agriculture and forestry independent upon the end use. It does not make sense that the energy sector tries to develop a specific forest or agriculture policy. The result would be more additional bureaucracy, higher cost, less biomass and finally more fossil fuels and CO₂ emissions.

In the case of imports of solid biomass voluntary agreements of the industry should be used and existing schemes to warrant sustainability.

Also varying degrees of efficiency of biomass conversion to energy are not a risk but a fact; it is positive and important to set rules and incentives to improve the efficiency in biomass conversion. Bioenergy should be promoted in the transport industry followed by cogeneration units.

Complaints about the competition between different users of biomass are normal in a market economy. Market actors try to get rid of competitors. It would be a historical fault if public authorities sacrifice the common goal of climate mitigation for the sake of individual interests of companies. The EC has been influenced by market actors who try to push the EC in this direction. Under the smokescreen of the "Cascading principle" there are unqualified attempts to create planned economy rules for biomass. The EC has to stop these misleading concepts. Market conditions shall optimize the flow of raw materials.

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					
GHG emissions from direct land-use change					
Indirect land-use change					
Impacts on biodiversity					
Impact on soil, air and water					

Any additional comments?

2500 character(s) maximum

A number of aspects are well covered by the directive. Biodiversity is handled by no go-areas, carbon losses by restrictions on fuels from deforested areas and wetlands, etc.

But the effectiveness of the Directive must also be questioned:

- The complexity of the scheme punishes small and medium size businesses, with administrative burden and considerable cost, and favours large actors with higher administrative capacity.
- In combination with the current interpretation of state aid rules, the EU policies now threaten to kill the market for many of the biofuels with higher GHG emissions as a result.
- Lower GHG emissions related to cultivation, processing and transport would be better incentivised by introducing efficient carbon pricing. This would also affect all agricultural production, not only production of biofuels. In general, carbon pricing is a better tool to reduce GHG emissions than administrative regulation.

The ceiling of 7% for 1st fuels:

The cap on biofuels from agricultural energy crops (sometimes wrongly called "food-crops"), is counter-productive and harmful. Europe has large potentials to produce more crops on farmland, both inside EU, and in East Europe. EU has at least 10 million hectares of set-aside land, and even more abandoned and under-utilized land. Scientific studies show that the area of abandoned farmland in East Europe could be more than 50 million hectares.

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

In Brussels, the conception about 1st generation and advanced biofuels is biased in favour of advanced fuels. Advanced biofuels, especially cellulosic ethanol, have their chance and importance in regions with an abundance of cellulosic material and a modest or zero use of fossil fuels for residential heating. In Europe these criteria might fit to Scandinavian countries, worldwide to countries in tropical regions with sugar cane production, with short rotation coppices and to regions with an abundance of not used straw or other by-products.

Because these criteria do not fit Europe as a whole, the European policy should permit member states to implement their own support schemes for advanced biofuels if they see the need to do this in their country.

A European wide system causes problems as can be seen with the concept of double counting. Double counting means that the targets for biofuels are finally halved. And in addition: If advanced biofuels are mainly based on different types of food waste, eligible for double counting, the production quantity would remain quite limited.

If the EC tries to support advanced biofuels especially cellulosic ethanol in regions with heating systems based on gas or oil the result will be an extreme expensive and inefficient system. Obviously it is cheaper and more efficient to replace oil and gas in the heating sector by wood, straw or other cellulosic material than to transform this feedstock to liquids and go on with fossil fuels for heating.

The best strategy to support efficient solutions in the use of biomass is the implementation of carbon taxes based on the quantity of CO₂ emissions of fossil fuels. As a consequence fossil fuels for heating, for transport will be more expensive and in a market economy consumer will decide how to use solid biomass - for heating or for transport.

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

Reviews and turnarounds during a given time period – as in the last years in Europe – are extremely disadvantageous for the sector and stop the willingness to invest. Among investors for biofuels now countries in the Americas and Asia are the favourite place to go and Europe got the reputation of unreliable and bureaucratic.

A way out would be to declare: Any feedstock produced within the EU and complying to common rules (Cross Compliance, Natura 2000 etc.,) national regulations (environmental protecting laws, forest laws) or voluntary certification schemes such as PEFC have to be granted as sustainable without any additional administrative burden or costs.

The administrative burden of RED is considerably higher for small actors than for big actors on the market, seen as cost per litre of fuel. This is logical, as all actors have to present identical paper work, regardless of volumes. There needs to be a threshold for reporting to protect small and medium enterprises.

It should be noted that suppliers of fossil fuels have no criteria at all. They are not even required to declare the origin of their products, and they do not inform their costumers about the environmental harm of their products (compare to tobacco!). This gives biofuels an extra disadvantage on the market compared to fossil transport fuels.

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

A solid and stable regulatory framework beyond 2020 is needed to encourage continued investment in innovative technologies. But the priority should not be on innovative technologies. The main problem is not how to promote new innovative technologies, but how to deploy existing, proven technologies in an efficient and fast way.

The following technologies are of particular importance for a successful development of bioenergy:

- . Efficient pellet boilers and stoves, both small-scale applications for private homes, and middle and large-scale for industries (breweries, dairies, green houses, asphalt production, etc.). Very low emissions.
- . Efficient combined heat and power production (CHP), for district heating and cooling, using primarily unrefined wood fuels such as wood chips, bark, and residues from forestry (tops, branches, small trees from thinning, etc.) and from agriculture (straw, corn stalks) and wood from SRF.
- . Flue gas condensation enabling use of biomass with relatively high moisture content with high energy efficiency.
- . Efficient 1st generation biofuel production units and biogas unit, based on waste material

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

GHG emissions from supply chain, e.g. cultivation, processing and transport					
GHG emissions from combustion of biomass ('biogenic emissions')					
Air quality					
Water and soil quality					
Biodiversity impacts					
Varying degrees of efficiency of biomass conversion to energy					
Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks					
Other					

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

2500 character(s) maximum

The sustainable management of forests concern all European forest products and has already been implemented and put into practice by forest owner for generations. The sustainability of biomass is an issue which cannot be addressed according to the specific use of biomass. There is no need for additional legislation coming from Brussel targeted only to biomass for heat and electricity.

Change of carbon stock in EU is not a problem. Every single member state has a growing stock of biogenic carbon in forests, and this is recorded in positive LULUCF numbers. The European forests are aging, and a higher share of the yearly increment could be used for wood products and energy. When the forests age, the uptake of carbon dioxide decreases, and the risk for large releases of carbon by large-scale disturbances, like infestation, forest fires and storm felling, increases. The forgone substitution and the subsequent higher emissions from fossil fuels, when the available biomass is not used for energy, must also be considered.

Change of carbon stock in countries from which EU imports biomass for energy is also in general positive. This is true for the U.S. and for Canada, as for all other developed countries.

Regarding agricultural biomass, the Common Agricultural Policy (CAP) ensures a high level of environmental performance. Agricultural biomass from farms which are eligible for the CAP can be considered as complying with sustainability criteria.

What is needed is a more proactive EU policy to increase the supply of biomass for energy and material use by better protection of land for agriculture and forestry, by incentives to use abandoned land, to plant energy crops on land not used for food production etc.

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 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"/>
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 type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Promote efficient use of the biomass resource, including efficient energy conversion	<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"/>
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 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 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"/>
Promote energy security	<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"/>
Promote EU industrial competitiveness, growth and jobs	<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"/>
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

The objective should not be limited to a bioenergy sustainability policy but broadened to a bioenergy policy within a sustainable energy policy; sustainability as principle should include the whole energy system because a sustainable bioenergy policy within an unsustainable energy system is no solution.

Therefore the key target of the EC energy and climate policy should be reducing the utilisation of fossil fuels, cutting the GHG emissions from fossil fuels according to the outcome of COP 21, formulating a new climate and energy framework for 2030 and 2040 in coincidence with the Paris Agreement, introducing carbon taxes as key instruments for the transition of the system, carbon taxes that address all consumers of energy.

Concerning the ranking of the here mentioned targets contribution to climate change objectives and energy security are put on top. These objectives can only be achieved with long term legal certainty and a minimum of administrative burdens.

These two top objectives also need more policy efforts to increase biomass supply and to direct more biomass to the heating sector. This goes along with the target to promote efficient use of biomass and will also create more jobs.

The environmental aspects should be covered by the agricultural and forest policy, they are general issues of this sector and should not be limited to bioenergy policies. Trade of biomass is the second best solution, regional supply and regional demand have priority.

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

Sustainability of bioenergy is part of a sustainable agriculture and forestry. No specific policies on agriculture and forestry by the energy administration are needed, a close cooperation with the direction of agriculture is recommended.

Several European countries like Sweden, Latvia, Austria are global leaders and positive examples in the development of bioenergy within sustainable managed forests for decades. New additional burdens for biomass production within the EU would hinder the development in these countries and handicap biomass deployment in other European countries and slow down the start up of biomass in other parts of the world. Such burdens should be avoided. They would reduce the availability of biomass, destroy new green jobs along the value chain and jeopardize the objectives for renewable energy in achieving the goals of COP 21. Already today, the pay for biomass for energy to the forest owner is very low. With a burdensome sustainability system, the biomass would stay in the forest, and more fossil fuels will be used with continued high emissions of fossil carbon dioxide as a result.

The situation might be different concerning imports of biomass for energy. Industry based certification schemes should be applied.

Imports from outside Europe should only cover a limited portion of the total biomass consumption. This should be valid for solid biomass (wood chips, pellets) and for biofuels (ethanol, biodiesel, pyrolysis oil) due to three considerations:

- Not only Europe but all countries of the world have to delete fossil fuels and go for renewables. The global climate mitigation policy will not be successful if Europe imports feedstocks for bioenergy from everywhere and the exporting countries continue to rely on fossil fuels. In the longer run imports from outside Europe should be restricted to regions that already have a high share of renewables in their portfolio and have a real abundance of biomass that they don't need at home.
- Secondly a strong argument for biomass is the improved security of supply. This requires that the biomass is mainly sourced in Europe and not abroad.
- A limitation of imports also limits the risk of negative impacts on the sustainability of biomass production abroad.

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

9.1 bioenergy within a sustainable energy system

This is a paper about sustainable bioenergy policy after 2020. One of the best definitions of sustainability comes from The Brundtland Commission's. Its report defined sustainable development as "development which meets the needs

of current generations without compromising the ability of future generations to meet their own needs".

9.2 a carbon tax as key instrument of the energy transition

A general answer to many questions concerning efficiency, GHG gas emissions along the bioenergy supply chain, the future security of supply would be the phasing out of all subsidies for fossil fuels and nuclear energy and the implementation of a general tax on fossil CO₂ emissions. Such a step would encourage the growth of bioenergy and other renewables but also incentivise all efforts for better efficiency without any administrative burden. This proposal has also to be seen under the aspect that the European production of oil, gas and coal is declining sharply since 2000 and that the current low and gas oil prices will increase the dependency on these fuels and thus on imports. The Agreement of Paris and the current oil glut offer a window of opportunity to go for general carbon taxes in Europe. The EC should encourage member states to take this step, even if a common European solution is not yet feasible.

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

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