

# A sustainable bioenergy policy for the period after 2020

Fields marked with \* are mandatory.

## Introduction

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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<sup>[10]</sup> 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

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★ 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*

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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)					
Biofuels from agricultural and forest residues					
Biofuels from algae					
Biogas from manure					
Biogas from food crops (e.g. maize)					
Biogas from waste, sewage sludge, etc.					
Heat and power from forest biomass (except forest residues)					
Heat and power from forest residues (tree tops, branches, etc.)					
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	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commercial heat generation from solid biomass	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Large-scale combined heat and power generation from solid biomass	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Small-scale combined heat and power generation from solid biomass	<input checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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

Biogas from energy crops : grass, clover, hemp for example are energy crops and can be used in a methanisation process like waste.

### 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 checked="" type="radio"/>	<input 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 type="radio"/>	<input checked="" 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 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"/>
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### 3.2. Any additional views on the benefits and opportunities from bioenergy? Please explain

*2500 character(s) maximum*

Note that our responses on biofuels imply that biogas used for transport is a biofuel.

Biomethane (purified biogas) is a green gas produced from waste sourced from the food industry, restaurants, domestic usage or mud from water-treatment plants. It is 100% compliant with natural gas properties and can easily be directly injected into the gas network. It helps foster the development of a territorial circular economy where waste becomes a renewable resource. Its benefits are multiple; such as waste upgrading, substitution of chemical fertilisers with their organic equivalent, safeguarding of soils quality and groundwater, creation of local employment that cannot be outsourced and the use of existing network infrastructure. It even has a transport value as BioNGV can be injected into NGV and fuel cars, and represents up to 96% and 97% reduction in GHG emissions respectively, compared to diesel and petrol according to the Environment Agency Austria. More generally, biofuels help to reduce not only GHG but the emissions such as particles, NO<sub>x</sub>, SO<sub>x</sub> and contribute to the reduction of noise in comparison to diesel.

Biomass plays a crucial role in meeting the EU's RES targets as just a few large-scale installations can contribute significant volumes. This makes it particularly interesting for countries with limited potential of other RES (e.g. with limited space/acceptance for wind or ground-mounted PV) and will increase energy independence and trade balance. Biomass also has less impact on the landscape and thus poses less of a problem as regards the NIMBY effect. Bioenergy crops could also help to restore decreasing activities in the rural areas where there is an agriculture decline.

Biomass is a cost-efficient, carbon-neutral, renewable and dispatchable generation technology, able to provide reliable, base-load electricity and heat supply. While wind and PV are intermittent and a need back-up and balancing capacities resulting in additional cost for keeping the system in balance and reinforcing the network. Biomass on the contrary, has very little (or no) system integration cost, and as non-intermittent renewable energy source can serve as back-up to volatile RES and increase security of supply. For heating networks, biomass as a supply source is a trustful solution; it should be completed by the development of biogas/biomethanisation which is insignificant up to now. Reuse from waste incineration and industrial process should also be better valued.

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

Internal market impact of divergent national sustainability schemes	<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*

The best use of bioenergy according to its climate impact in terms of CO2 emissions is not fairly valued.

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

*2500 character(s) maximum*

The contribution of bioenergy to GHG emissions mitigation is not properly valued and incentivized due to a lack of sufficiently strong carbon price signals. While the EU ETS is in principle an appropriate mechanism to incentivize low-carbon technologies in a cost-effective manner, it mainly covers the electricity sector and certain industrial processes and to a limited extent also heating/cooling and transport as far as electricity is used in these sectors. Moreover the price signal under the ETS is currently not strong enough to trigger investment and does not reflect long-term decarbonization targets. In order to make a full extension to the heating and cooling sector of the ETS feasible as soon as possible, we recommend that it should be carefully studied. Such carbon price mechanism is missing in the other sectors (non-ETS sectors) in most countries.

The environmental benefits of the use of biogas for transport such as the reduction of NOx and particles should be fairly taken into account.

It has to be noted that small individual biomass boiler (as home heating systems) without efficient emission reduction systems could have quite an important impact on local air quality (particles...) which is not the case for larger boilers.

From an investors' point of view there could be a risk of continuity of biomass supply, in particular of biomass complying with sustainability criteria, in case of massive investment in biomass.

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

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

GHG emissions from direct land-use change	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indirect land-use change	<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"/>
Impact on soil, air and water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments?

*2500 character(s) maximum*

It has to be noted that the reference values used for GHG gain of biofuels or for biodiversity risks have been questioned.

## 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*

Administrative procedures should not be obstacles to the development of advanced biofuels and the administrative constraints should be reduced.

BioNGV (purified biogas for transport produced from urban and agricultural waste) is not supported enough as an advanced biofuel.

## 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*

Administrative burden should be avoided for small operations: the procedures should be simplified and the sustainability requirements should be adjusted to the size of the installation.

#### 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*

Biomethane (purified biogas) was a late entrant in the bioenergy sector. As such, it is a type of bioenergy that has taken into account the mistakes made in other sectors in early stages of development of early generations of bioenergy. As such, Biomethane has a lot to bring to the table but institutional support will be needed. The biomethane industry is not mature yet; it requires stability of the existing current framework; biogas still needs support schemes and specific trajectories for the deployment of these technologies in relation to the national potential should be defined in the national plans. Gasification and production from algae need to be supported by European Research and Innovation funds as a first step.

A system of best practices should be put in place, and accessible at the level of the EU and Member States.

There should be a clear position on promoting fuels based on CO<sub>2</sub> capture and conversion (Carbon Capture and Utilization or CCU based fuels), regardless of the carbon fossil or renewable origin, as long as energy used in the conversion process is sourced from renewable sources. CCU based fuels have the potential to displace fossil based fuels. It also reduces the need for resources competition between different usages as it can be applied on industrial fields and with no agri-land requirements. It can be complementary to existing agro or forestry based bioenergy pathways in creating even more value from CO<sub>2</sub>. CCU based fuels could be applied as an enabler of decentralisation and intermittent energy storage. Research and Demonstration is ongoing and very supported in certain Member States. Some others don't have
















enough support or infrastructures. Having industries – academics platforms working/demonstrating these advanced fuels, with a clear positioning and vision from Europe on the eligibility of the fuels, is needed.

## 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 checked="" 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 type="radio"/>	<input checked="" 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	<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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water and soil quality	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biodiversity impacts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 inclusion of BioNGV (purified biogas for transport produced from urban and agricultural waste) in the same framework as other fuels could send a strong signal both to consumers, who would clearly see that BioNGV and Biomethane are green, and "partner industries" which work in developing cleaner renewable energies.

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

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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 checked="" 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 checked="" type="radio"/>	<input 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 checked="" 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 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"/>
Minimise administrative burden for operators	<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 energy security	<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 EU industrial competitiveness, growth and jobs	<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 checked="" 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify the "other" choice

200 character(s) maximum

Circular economy.

7.2. Any other views? Please specify

2500 character(s) maximum

The example of BioNGV (purified biogas for transport produced from urban and agricultural waste) and Biomethane are circular Bioenergy. Indeed Biomethane is created from the heating of waste which would otherwise not be upgraded. The process of heating then releases a gas, CH<sub>4</sub>, and remnants of waste, namely digestat. This digestat can be further upgraded to be used as fertiliser. The mere idea of being able to valorise seemingly useless waste twice, to create gas which can be injected into the network or used by cars as BioNGV, whilst also then being able to reuse the leftovers of waste to fertilise fields is in itself a testament to how advanced the EU and its energy sector are, and highlighting the importance of circularity in the energy sector can help continue this revolution.

## 8. EU action on sustainability of bioenergy

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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 EU policy framework on sustainability of bioenergy should include an harmonized European binding criteria for solid biomass but only for 20 MW or more installations ; these should as far as possible built on the criteria that were already voluntarily developed by the industry, such as the Sustainable Biomass Partnership (SBP) for woody biomass.
- In order to avoid a fragmented approach, the European criteria should be binding and fully harmonized, they should not be "minimum criteria", i.e. Member States should not be able to introduce additional criteria on top of the harmonized ones.
- In order to reduce the burden on small-scale biomass operators, EU

harmonized criteria could apply as from a certain threshold.

- An important step would be the creation of harmonised rules across the EU, for the inclusion into law of all bioenergy that may be of assistance in ensuring a transition to a low carbon circular economy.
- The next logical step is to allow Biofuels that could be used in a particular sector, to operate in that sector without hindrance : the promotion of sustainable and renewable fuels in the EU should encourage biomethane; it is a particularly adequate solution for medium to heavy duty vehicles. There is no other economic and mature environmental solution for these segments.

## 9. Additional contribution

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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*

Though scope of this consultation is entitled Bioenergy, the Renewable Energy Directive and Fuel Quality Directive now encompass a broader scope of resources than the sole biomass and organic wastes feedstock. Innovative technologies implying circular economy are emerging and the current regulatory frame is not ready to include and promote those. Re-use of CO<sub>2</sub> from fermentation or biogas plants, and other industries, to produce fuels and chemicals, enabling storage of intermittent electricity are among those advanced fuels options that are submitted in several H2020 or ERA projects, but the resulting products might face commercialization issues.

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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