

# 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

\* 1.7. If you are a public authority, can you define more specifically your area of competence?

- national government
- national parliament
- regional government
- regional parliament
- local authority
- governmental agency
- other

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

*200 character(s) maximum*

Ministry of the Environment

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

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

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

- Bioenergy should continue to play a dominant role in the renewable energy mix.
-

Bioenergy should continue to play an important role in the renewable energy mix, but the share of other renewable energy sources (such as solar, wind, hydro and geothermal) should increase significantly.

- Bioenergy should not play an important role in the renewable energy mix: other renewable energy sources should become dominant.

## 2.2. Perception of different types of bioenergy

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

	Should be further promoted	Should be further promoted, but within limits	Should be neither promoted nor discouraged	Should be discouraged	No opinion
Biofuels from food crops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Biofuels from energy crops (grass, short rotation coppice, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from waste (municipal solid waste, wood waste)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from agricultural and forest residues	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from algae	<input type="radio"/>	<input 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 type="radio"/>	<input type="radio"/>	<input checked="" 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)	<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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 3. Benefits and opportunities from bioenergy

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#### 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 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 type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource efficiency and waste management	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boosting research and innovation in bio-based industries	<input 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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

*2500 character(s) maximum*

Further promotion of bioenergy is beneficial for many reasons, most notably: 1) regional development and jobs; 2) energy security; 3) GHG emission mitigation; 4) grid services

Harvesting bioenergy can bring significant benefits to rural areas. The whole value chain incorporates a number of activities that can boost local economy and offer jobs to rural population. Promoting biomass mobilisation through creating increased bioenergy demand is thus extremely important for regional development goals. In Estonia, it is estimated that 1 mln m3 of harvested wood can provide job opportunities to 2000-3000 people.

One very important aspect of bioenergy is its wide allocation - quite abundant biomass sources available within the EU and a variety of end uses for them can enhance the energy security of Member States and decrease import dependency. Bioenergy is one of the main guarantors of Estonian energy security in heating sector, where it accounts for more than 50% of total fuels used in the sector. In Estonian experience, biomass provides a viable alternative for natural gas in heating sector. Recent investments have brought down the overall share of natural gas used in Estonian biggest district heating area Tallinn from 72% to around 20% and substituting it with local biomass. Due to a number of different local biomass suppliers, the disruptions in supply chain will not result in a heat supply halt, which could be the case if a gas supply disruption appears.

Bioenergy is one of the key players in mitigating GHG emissions from the energy sector. The above example of Tallinn illustrates the situation: biomass can provide a 0-carbon alternative to imported fossil fuels.

Biomass plays also a big role in providing electricity grid services like

electricity for the balancing market, quality (frequency) and security of supply (baseload). For these crucial functions dispatchable electricity is needed and biomass fuelled production is one of the greenest options here assisting in ensuring a higher penetration of variable energy sources in the grid.

Promoting bioenergy can also contribute to the sustainable management of forests. In cases, where there is not additional market for low-quality wood, it is left to forest where it will decay and emit CO2 without any added value. In this respect, the market should favour mobilising all available biomass sources in order to guarantee maximum effectiveness of harnessing available bioenergy resources.

## 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 checked="" type="radio"/>	<input 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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Internal market impact of divergent national sustainability schemes	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

*2500 character(s) maximum*

The EU policy framework for the bioenergy should guarantee that the growing demand for bioenergy will be met only by the woody and other biomass derives from sustainably managed forests and grasslands and that fragile habitats and species will not fall under a threat of extinction. Estonia believes that domestic legislation plays the leading role in assuring, that the sustainable forestry principles are followed in a country and biomass is indeed from sustainably managed forests and grasslands.

Additional generally-applied sustainability criteria for the biomass cannot address the diverse nature of different habitats and biomass sources. Please see answers 8 and 9 as well for further elaboration. A good example is straw that is sourced from environmental restriction zones. In a number of cases, straw from natural grasslands is harvested in order to protect the living habitat. Using it as a fuel for bioenergy production is sometimes the only economic option for this low-valued resource. Thus, it is reasonable that the policy framework is flexible and can address these kinds of distinct situations.

The bioenergy sustainability policy should not limit the segments of biomass recognized as suitable for the production of bioenergy as there is no economic or practical justification for the application of such provisions. Our experience has shown that the market competition has strengthened active

forest management and has enhanced investments into the sector. This is essential in order to ensure the good growing conditions of forests.

Enforcing restrictions for the biomass material used for sustainable bioenergy production could become a barrier for bioenergy production and renewable energy sector development. National and regional circumstances vary greatly regarding forest resources. There are cases where the energy sector is the only possible market as there is no demand for wood from another industry or it is not economically feasible for said industry to mobilise such wood (e.g. forests that are not located in the supply area of pulp mills or wood-based panel plants due to the economically sound transport distance). In such cases, wood energy can be an efficient option for local actors and for the local community. It provides an opportunity for forest owners to sell their wood locally and keep managing their forests. Therefore determining “low-value” or “appropriate” use of wood at EU level would not guarantee resource efficiency.

## 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 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 checked="" type="radio"/>	<input 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"/>
Impact on soil, air and water	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments?

*2500 character(s) maximum*

### 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*

There has not been enough time to implement the changes adopted in 2015 to increase the uptake of advanced biofuels and drive forward the use of ligno-cellulosic materials. As a general approach there seems to be a lot more efficiency in determining what countries must and must not do through standardisation of fuels. Many national markets in the EU are too small to have an effect on the market share of advanced biofuels (with biomethane being the exception). For example, countries like Estonia are solely dependent on the fuels provided by other fuel refineries. It is highly unlikely that those refineries would develop fuel mixes only for the Estonian market. Thus, standardised fuels and specific ambitious GHG emission reduction targets in the transport sector should provide the incentives for advanced biofuels and II/III generation feedstocks.

### 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*

Treat the EU as a de facto single market for biofuels and have one institution certify the sustainability of a fuel only once. For this a single sustainability registry should be developed and used where competent authorities (including EC) can change information. Global administrative burden would be reduced immensely. There cannot be a harmonised system of requirements without a single entity who would provide quick and authoritative information on the compatibility to the requirements. Current system is burdensome due to national authorities having to create a national system for the verification without specific requirements on how information should be changed with other MS etc.

### 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*

EU's forward-looking strategy to enhance innovation in bioenergy helps to achieve the GHG and renewable energy goals in the future. Additionally, growing emphasis on innovation and new technologies helps to boost economy and find new and potentially prosperous business opportunities for the EU companies.

The financial support for the innovation is essential for its initial success in helping to bring new technologies and fuels on the market. It is extremely important to have flexible support mechanisms for innovative projects, which consider changing market situation. For example, innovative projects producing alternatives for fossil fuels face difficulties entering the market with their products due to current price levels of fossil fuels. Thus, the ongoing and planned support mechanisms should be able to address the issues of market fluctuations and still provide decent incentives for finalizing the projects. Bioenergy market is in very different maturity stages and market barriers. Some energy carriers technologically mature and in the status of global commodity (pellets) while others are being developed (algae fuels, lignocellulosic fuels). Alternatively, in the situation, where the bioenergy-based end product is competing directly with fossil alternatives, blending mandates and market-driven supply obligations are also efficient in commercialising products and assisting innovation. This is observed for example in the deployment of advanced biofuels and biomethane (where competing with cheap natural gas). In other cases developers can benefit from support measures at the demonstration phase of a product's life cycle, followed then by additional measures, should the technology provide sufficient benefits. Flexibility and interrelations between measures are important.

Additionally, the financing mechanisms should help to limit the associated risks for all involved stakeholders. For example, looking at the NER300 provisions, though the funding is provided by the EIB, all the risks are allocated to a recipient member states: if a project fails, the pre-operation funding must be returned to the EIB by the member state. Since the projects are extensive, the member states could be reluctant to guarantee the projects. Future supporting mechanisms should consider a more balanced system and risk-sharing agreements between the member states, project sponsors as well as funding facilities.

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

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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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Indirect land-use change impacts	<input checked="" type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water and soil quality	<input checked="" type="radio"/>	<input type="radio"/>	<input 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	<input checked="" type="radio"/>	<input 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	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other					

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

*2500 character(s) maximum*

EU policies and their effect should be addressed holistically. For instance, the provisions on emission ceilings for air pollutants could become a limiting factor for enhanced use of bioenergy and that could in turn raise the economic costs and negatively affect the abilities of Member State's achieving long term energy and climate goals. Therefore, the policy framework should not become a limiting factor for enhanced use of bioenergy.

The current policy framework has not been sufficient for motivating smaller private forest owners to realize their bioenergy potential. As is apparent from the experience of Estonia, the smaller private forest owners are far less active in actively managing their forests than larger and more capable owners. If the EU wants to achieve its GHG goals by using more bioenergy, it is extremely important to mobilize all the potential biomass sources. Therefore, special attention should be placed on helping the small forest owners to bring their biomass on the market. In this respect, applying any additional administrative burden - whether through a biomass sustainability criteria, mandatory certification schemes or other mechanisms - is discouraging for small forest owners and should therefore be avoided.

Finally, EU policies have a critical effect on the criteria "Varying degrees of efficiency of biomass conversion to energy". It is very important to note that there are specific reasons why varying degrees of efficiency of biomass conversion to energy exist. Where baseload electricity production is the purpose and there is no sufficient heat load physically around, biomass conversion for electricity production without a CHP installation might be on a macro-level the most reasonable solution. This is to exemplify the different crucial roles biomass plays in the electricity grid. EU policies should be directed towards regulating for example the emission standards, and should be directed to the ultimate target reduction of GHG emissions independent the sector. The role of a well-functioning and ambitious EU ETS cannot be overstressed.

## 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mitigate the impacts of indirect land-use change	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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"/>					
Promote free trade and competition in										

the EU among all end-users of the biomass resource	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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"/>				
Minimise administrative burden for operators	<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 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"/>				
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				

## 7.2. Any other views? Please specify

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As the EU is one of the main advocates of a globally ambitious climate policy, the bioenergy should play a central role in achieving the GHG reduction goals. Estonia welcomes a policy package, which intends to establish regulatory framework for the functioning effective bioenergy market. The main goal should be to capitalize on all the available, sustainably-sourced biomass and to enhance the market position of bioenergy. If considering the GHG mitigation potential from the extended use of bioenergy, the policy package should emphasize the goal to maximize the use of locally harvested biomass - e.g. to bring into use all the harnessable biomass within the EU, since this holds a potential to reduce GHG emissions from transport activities.

The enhanced use of bioenergy will bring additional benefits through different channels and helps to realize a number of goals. As already mentioned, bioenergy can extensively contribute to reducing energy security concerns as it provides a local alternative for imported fuels. Also, it can have significant positive impact on employment in the rural areas - the whole value chain will provide job and business opportunities for a number of people, who are mostly living in rural areas.

As stressed above, in our view, the most important goal should be to maximize the bioenergy potential within the EU and in this respect, the planned policy instruments must not limit small forest owners' ability and motivation to actively manage their forests and supply biomass onto the market.

## 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

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Estonia strongly believes that the bioenergy policy framework should aim at maximizing the use of sustainably-sourced bioenergy. As indicated above, we see many benefits from increased share of bioenergy - employment, advancing business opportunities in rural areas, improved energy security position, smaller GHG emission levels etc. That being said, we acknowledge the goal that the policy framework must guarantee that bioenergy is produced from

sustainably managed resources. Estonia believes that in order for the policy framework to be effective and incentivize growth in bioenergy production as well as assuring its sustainability, the following aspects should be considered.

Firstly, policies must ensure that there is a growing market and demand for bioenergy in the future. A critical aspect is the possible sustainability criteria to be applied on the combustion of biomass. We strongly suggest the Commission to consider the long-term consequences on enforcing a strict efficiency coefficient on a large-scale power production. It is understandable that ideally, all energy should be produced with maximum efficiency, but in reality, the opportunities to use biomass in high-efficiency CHP production cycle are limited. Large-scale electricity production facilities should also be able to produce "sustainable bioenergy". Otherwise, the bioenergy market would lose significant amount of market share. It is probable, that if restrictive efficiency coefficients are applied, large-scale power producers would switch back to fossil alternatives for bioenergy which will be an extreme blow to EU's climate policy. Efficiency criteria should not make bioenergy-based electricity production facilities for grid balancing and reserve capacity unable to enter the market, while being a feasible GHG mitigation technology compared to fossil alternatives.

We note that Directive 2012/27/EU on energy efficiency already requires the Member States to identify cost effective potential for delivering energy efficiency, principally through the use of cogeneration, efficient district heating and cooling and the recovery of industrial waste heat or, when these are not cost-effective, through other efficient heating and cooling supply options. Furthermore, promotion of cogeneration is at the heart of Commission Communication An EU Strategy on Heating and Cooling COM(2016) 51. Therefore, instead of new measures the focus should be on the implementation of existing ones and on removing the regulatory and administrative barriers that impede the further exploitation of cogeneration by Member States. Estonia fully adheres to the principle that CHP can produce significant energy and CO<sub>2</sub> savings compared with separate generation of heat and power.

As stressed above in this document, the regulation must not create a situation where smaller forest owners feel reluctant to actively supply their available biomass onto the market. Additionally, it is improbable that a generic sustainability criteria could take into account all the country-specific aspects influencing the sustainable forest management. Therefore, Estonia believes that a system where the sustainability of the biomass is guaranteed on a country-level and no additional certification obligation is applied for private forest owners is the most efficient option. Many Member States, most notably countries, who are large producers of solid biomass, have comprehensive national legislation on forestry addressing sustainability issues relevant for that geographical area. Biomass produced in such states should be considered sustainable by default or by a simplified "fast-track" process. For countries with less advanced forestry policies, a somewhat different approach could be considered. Putting emphasis on already intact instruments - enforcing EU Timber Regulation and extending the use of voluntary certification schemes - should already guarantee that the sustainable forestry principles are met also within these countries. We are cautious about the possibility of accounting and assessing the life-cycle sustainability of the bioenergy supply chain since this could

result in significant increase in reporting and certifying responsibilities. Still, the applied criteria should enhance the use of bioenergy, which is transported to end-use location from relatively near regions. In this view, bioenergy originating from the EU member states should play a dominant role in the EU's future energy mix, since it helps to minimize emissions from transporting the bioenergy as well as it can guarantee the energy security for the EU.

## 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?

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Additionally, Estonia wants to point out its current policies for guaranteeing that sustainable forestry principles are met for all the wood harvested from Estonian forests. We believe that country-specific approach should be favoured within the bioenergy policy framework and no additional sustainability criteria is needed.

The currently effective principles of sustainable forest management have been transposed from and are in conformity with the Forest Declaration adopted by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. These principles and criteria have been applied in Estonia since 1997 when the Estonian Forest Policy was approved. Since then, principles of the resolutions of pan-European forest conferences have been applied in the development of the long-term development plan of Estonian forestry, particularly in terms of criteria and indicators of sustainable forest management, which proceed from the above-mentioned Forest Declaration. Since 2006, the protection and sustainable management of the forest as an ecosystem has been ensured in Estonia with the Forest Act. According to the Act, forest management is sustainable if it ensures biological diversity, productivity, regeneration capacity and vitality of forests, and the possibility of multiple uses of forest in a way that satisfies ecological, economic, social and cultural needs. Restrictions arising from nature conservation and permitted activities are stipulated in Estonia by protection rules and management plans, which proceed from the Nature Conservation Act. Sustainable forest management is ensured with the following measures in Estonian legislation:

Valid inventory data are mandatory for carrying out regeneration cutting, thinning or selection cutting. Records of inventory data are maintained in the state register for accounting of forest resource. Correctness of inventory data is provided by a forest planner who holds an activity licence. Activity licence is issued by the state and is verified by the Estonian Environment Information Centre (a governmental institution).

The state supports forest owners by the provision of consultations on sustainable forest management and allocates financial support to the preparation of forest management plans.

A forest owner has to submit a forest notification to the Environmental Board

(a governmental institution) concerning planned cuttings and planned reforestation. The Environmental Board verifies the compliance of the planned works with the requirements of legislation (incl. with requirements arising from the Nature Conservation Act) and valid inventory data and adopts a decision on permitting or not permitting the activities concerned.

25% of Estonian forests are under nature conservation. Timber can be procured also from protected areas where the protection purpose is the conservation of a forest with natural species. However, certain cutting provided in the forest management plan is required for the achievement of the protection purpose. In case of such cuttings it is necessary to submit a forest notification first and acquire permission from the Environmental Board. Before the adoption of a decision on permitting the cutting activities, the Environmental Board verifies the conformity of the cutting with the protection purpose.

A forest owner is required to apply reforestation methods to such extent that ensures regeneration of the forest not later than five years after the cutting or the perishing of the forest.

Changes in land use have been strictly regulated. Forest land can only be used for purposes other than forest management on the basis of a detailed plan or other similar project.

The EU has adopted timber regulation, which came into effect in the Member States from March 2013. The purpose of this regulation is to prevent the spread of illegal timber trade on the EU internal market. In order to ensure that the timber regulation imposes obligations on businesses marketing timber or timber products on the EU market, including the obligation to apply the system of due diligence. The system of due diligence includes also requirements for the origin of timber and traceability of the supply chain. Also the existing legislation of a Member State can be used for that purpose if it covers the requirements set to the due diligence system. Additionally, voluntary certification schemes (FSC, PEFC) can be used to prove the origin of timber. Observing the due diligence system ensures that timber has been acquired from a sustainably managed forest. In addition to the procedure arising from effective legislation, it is possible in Estonia to prove the sustainability of forest management according to market-based voluntary international certification schemes (e.g. FSC, PEFC). It can be applied for both sustainable forest management and for the timber supply chain.

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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