A SUSTAINABLE BIOENERGY POLICY FOR THE PERIOD AFTER 2020

INTRODUCTION

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

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

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

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

Currently, the Renewable Energy Directive[3] and the Fuel Quality Directive[4] provide an EU-level sustainability framework for biofuels[5] and bioliquids.[6] This includes harmonised

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.

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 and will also organise a dedicated stakeholder conference on 13 April 2016.

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

---

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

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

[9] COM/2010/0011 final.

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

1. GENERAL INFORMATION ABOUT RESPONDENTS

1.1. In what capacity are you completing this questionnaire?

○ academic/research institution
○ as an individual / private person
○ civil society organisation
○ international organisation
○ other
○ private enterprise
○ professional organisation
● public authority
○ public enterprise

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

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

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

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

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

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

○ large enterprise
○ medium-sized enterprise
○ small enterprise
○ micro-enterprise
○ I don’t know

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

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

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

○ Austria
○ Belgium
○ Bulgaria
○ Croatia
○ Cyprus
○ Czech Republic
○ Denmark
○ Estonia
○ Finland

○ France
○ Germany
○ Greece
○ Hungary
○ Ireland
○ Italy
○ Latvia
○ Lithuania
○ Luxemburg
○ Malta
○ Netherlands
○ Poland
○ Portugal
○ Romania
○ Slovakia
○ Slovenia
○ Spain
○ Sweden
○ United Kingdom
○ non-EU country(ies)

1.6. If you are a civil society organisation, please indicate your main area of focus.

○ Agriculture
○ Energy
○ Environment and Climate
○ Other
○ Technology & Research

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
○ government agency
○ other

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

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.)

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
○ Luxemburg
○ 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)

2. 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:

- O 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.
- O 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	O	O	O	●	O
Biofuels from energy crops (grass, short rotation coppice, etc.)	O	●	O	O	O
Biofuels from waste (municipal solid waste, wood waste)	●	O	O	O	O
Biofuels from agricultural and forest residues	O	●	O	O	O
Biofuels from algae	O	●	O	O	O
Biogas from manure	●	O	O	O	O
Biogas from food crops (e.g. maize)	O	O	O	●	O
Biogas from waste, sewage sludge, etc.	●	O	O	O	O
Heat and power from forest biomass (except forest residues)	O	O	●	O	O
Heat and power from forest residues (tree tops, branches, etc.)	O	●	O	O	O
Heat and power from agricultural biomass (energy crops, short rotation coppice)	O	O	●	O	O
Heat and power from industrial residues (such as sawdust or black liquor)	●	O	O	O	O

Heat and power from waste	O	●	O	O	O
Large-scale electricity generation from solid biomass	O	O	O	●	O
Commercial heat generation from solid biomass	O	O	●	O	O
Large-scale combined heat and power generation from solid biomass	O	●	O	O	O
Small-scale combined heat and power generation from solid biomass	O	●	O	O	O
Heat generation from biomass in domestic (household) installations	O	O	●	O	O
Bioenergy based on locally sourced feedstocks	O	●	O	O	O
Bioenergy based on feedstocks sourced in the EU	O	●	O	O	O
Bioenergy based on feedstocks imported from non-EU countries	O	O	●	O	O
Other (please specify)	O	O	O	O	O

Please find attached a note with additional views on the perception of bioenergy (in relation to 2.2) [note vedhæftes høringssvaret]:

Additional views on the perception of bioenergy (in relation to 2.2)

The questions in section 2.2 on the perception of bioenergy raise a host of different issues and, hence, the Danish government would like to comment on the answers given in this section. As a general remark, promotion of renewables would be most cost effective if done in a technology neutral way. However, contrary to other renewables like wind and solar, the use of biomass requires specific consideration in order to achieve the long term target of decarbonisation. The use of some bioenergy feedstocks results in relatively high GHG emission. Others compete with the production of food, feed, and materials or give rise to risks concerning biodiversity and environmental issues. As the market does not take these risks into account, there is a need for public intervention .This section focuses on different categories of bioenergy and their different inherent risks; it does not express an overall prioritization between different kinds of renewable technologies. Moreover, the views

expressed apply to policies at the EU level only, as other considerations and priorities may be more appropriate at national level in e.g. areas such as taxation.

Biomass for heat and electricity

In the short and medium term it will most likely be possible to use bioenergy from agricultural residues as well as thinnings and residues from forests with low greenhouse gas emissions in a sustainable way without severe sustainability risks.

In the longer run, however, several studies have concluded that sustainable biomass can be foreseen to become a scarce resource[11] after 2030, if global biomass mobilization and use increase significantly. This could on the one hand provide incentives for new investments in increased biomass production both within and outside forests. It could also, however, risk fueling use and management practices, in particular in already established forests, which would go beyond the limits for sustainable use and potentially be associated with high GHG emissions. This should also be seen in the context of an increased need for using biomass for other purposes such as food, feed and fibre. Considerations of energy security make it potentially relevant before 2030 to evaluate the market framework conditions for the future use of biomass resources for purposes for which bioenergy has a specific advantage compared to other renewable energy technologies such as hydro, solar, and wind.

Feedstock type:

Denmark finds it important to promote the use of sustainable biomass feedstock in order to achieve significant CO2 reductions and avoid negative impacts. It is widely accepted that the type of feedstock is important for the sustainability of bioenergy. Waste, manure, sewages sludge, and agricultural residues are examples of feedstocks that can be used without major risk of violating sustainability requirements. Energy crops on agricultural land should be promoted with greater care in order to achieve high GHG-reductions and avoid ILUC as well as negative impacts on environment and biodiversity.

Origin of biomass:

The sustainability risks associated with biomass from different countries differ. In some areas non-compliance is the major issue, where as in other areas insufficient environmental protection is the main concern. This includes possible high levels of associated GHG emissions as well as concerns for biodiversity conservation. Biomass trading is increasing and the supply chains are becoming more global and complex. This means that it is necessary to establish common sustainability criteria and sufficient chain of custody standards in order to make sure that the measures for tracing the biomass flows are effective.

Bioenergy and other renewables

Electricity based on wind and solar play an increasing role in the decarbonisation of the energy system as they do e.g. not entail the risks that follow from the use of potentially unsustainable bioenergy. In general, the EUs long term targets can be reached through a broad range of different renewable technologies and sources, and long term sustainable solutions should therefore be promoted in relevant regulation.

[11] "Analyse af bioenergi i Danmark", Energistyrelsen, 2014. "Carbon impacts of biomass consumed in the EU: quantitative assessment". DG ENER/C1/427, December 2015.

Bioenergy for transport

Even with strong regulatory measures electricity based on renewables cannot realistically supply all energy demand for transport towards 2030, and especially in sectors such as long haul vehicles, aviation and marine transport biofuels will probably be dominant. When it comes to biofuels those based on waste or residues should be promoted rather than those based on food crops, because in general waste or residue based biofuels have less negative impacts in terms of ILUC-consequences, the risk of increasing food prices, loss of biodiversity and so forth.

Over time focus on resource management and promotion of cascading uses of biomass is likely to increase. This heralds a future with stronger competition for the resource bases of even waste and residue based biofuels.

The incentives for using waste or residue based biofuels should create certainty for investors. A subtarget for 2020 of 0.5 pct. focusing on so called advanced biofuels was already introduced with the change of the Renewable Energy Directive in 2015 (the ILUC-directive) , and a target post 2020 should be analyzed further.

If biofuels based on food crops are needed to complement electricity and waste and residue based biofuels in order to secure sufficient emission reductions to reach the 2030 target, it must be ensured that they deliver real emission reductions. This means that inter alia ILUC-effects have to be taken into account.

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	O	●	O	O	O
Grid balancing including through storage of biomass (in an electricity system with a high proportion of electricity from intermittent	●	O	O	O	O

renewables)					
Reduction of GHG emissions	●	O	O	O	O
Environmental benefits (including biodiversity)	O	O	O	●	O
Resource efficiency and waste management	O	●	O	O	O
Boosting research and innovation in bio-based industries	O	●	O	O	O
Competitiveness of European industry	O	O	●	O	O
Growth and jobs, including in rural areas	O	●	O	O	O
Sustainable development in developing countries	O	O	●	O	O
Other (please specify)	O	O	O	O	O

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

Please find attached a note with additional views on the benefits and opportunities from bioenergy (in relation to 3.2) [note vedhæftes høringssvaret]:

Additional views on the benefits and opportunities from bioenergy (in relation to 3.2)

Bioenergy has several benefits compared to other renewable energy sources. Bioenergy can be stored and used in a flexible way in a future energy and transport system with a high share of intermittent electricity production from wind and solar PV. Bioenergy can replace fossil fuels and thereby help to diversify the national energy mix, thus alleviating the import fuel dependency.

The production of biogas using anaerobic digesters has the potential to reduce GHG emissions in agriculture by improving the management of manure in intensive animal production systems.

In 2012, the Commission published a bioeconomy strategy for Europe. This strategy points to the benefits from increased mobilisation of biomass resources, such as creation of jobs and growth in rural areas and, further, that the investments in bioenergy and biobased industries could contribute to innovation and technology development. A strong and diversified market for the use of biomass resources will also stimulate further research and development which can help pave the way towards a more resource efficient use of biomass in biorefineries.

An increased use of bioenergy could provide incentives for new investments in forestry, e.g. the introduction of new silviculture methods, where plantings with tree species aimed at long term production of high stem forests are combined with plantings of nurse trees in the same location, but aimed at short term production of energy wood. However, without specific protective policies and actions in place it could also risk leading to intensified harvesting and generally shorter rotation

periods with less dead wood left in the forest and likely negative impacts on biodiversity. It is also important to note that production of biomass in some cases, if carried out in the right manner, can provide environmental benefits, i.e. reduced nitrate leaching in cultivated areas and increased sequestration of carbon into plants, litter and soil. The harvesting of biomass from certain managed ecosystems such as pastures and grassland can also help to increase the biodiversity such as plants, insects etc.

R&D

The largest single cost for producing bioenergy is the feedstock. Therefore, there is a large potential for improving the economy of bioenergy if research is focused on developing the biomass feedstock. The biomass supply will be both from conventional agriculture and forestry, organic waste streams as well as dedicated bioenergy crops.

Optimization of the biomass production will require research in factors and processes controlling the productivity and resource-use-efficiency of novel biomass production systems. Interactions between genotype, environment and management factors can be exploited to sustainably intensify the biomass yield per unit land area. In addition, there is a potential in further development of existing engineered biofuel crop plants. Further research on the impact of increasing the use of bioenergy crops on air quality and the climate is necessary.

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	O	O	●	O	O
Change in carbon stock due to deforestation and other direct land-use change in non-EU countries	●	O	O	O	O
Indirect land-use change impacts	●	O	O	O	O
GHG emissions from the supply chain (e.g. cultivation, processing and transport)	O	O	●	O	O
GHG emissions from	O	●	O	O	O

combustion of biomass ('biogenic emissions')					
Impacts on air quality	O	●	O	O	O
Impacts on water and soil	O	O	O	O	●
Impacts on biodiversity	●	O	O	O	O
Varying degrees of efficiency of biomass conversion to energy	O	●	O	O	O
Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks and/or subsidies for specific uses	O	●	O	O	O
Internal market impact of divergent national sustainability schemes	O	●	O	O	O
Other (please specify)	O	O	O	O	O

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

Please find attached a note with additional views on the risks from bioenergy production and use [note vedhæftes høringssvaret]:

Additional views on the risks from bioenergy production and use

A number of studies have pointed to risks related to the sustainability of biomass used for bioenergy as well as other purposes. It is of increasing importance that these risks are mitigated in an efficient way, which makes sure that the benefits of bioenergy outweighs the negative effects on the environment as well as adverse impacts on the market for biomass feedstock used for other products.

The European Commission is currently carrying out a number of studies related to increased use of bioenergy and the associated risks. It is important that these studies are used to inform the policy process and that the conclusions are taken into account when designing any measures that should mitigate and remove the risks from bioenergy production and use.

A recent study on land use change commissioned by the Commission confirms the results found by earlier studies (notably the IFPRI study from 2011), namely that there are considerable land use change emissions from biofuels based on food crops, and especially from biodiesel based on vegetable oils. Another recent study published by the Commission is a quantitative analysis of biogenic carbon emissions related to the use of bioenergy (Matthews, R. et al. 2015). This analysis shows that various types of bioenergy have impact on the concentration of GHG in the atmosphere

and that the climate impacts are sensitive to a number of parameters such as the used feedstock, forest/plant productivity as well as alternative uses of the land and the biomass resources.

The Danish government has the following comments on the overall categories related to the sustainability risks associated to the increased use of bioenergy:

GHG emissions

The climate change effects from bioenergy use have been analysed in several Life Cycle Approach (LCA) studies. When using a consequential LCA approach to analyze the global GHG effects of bioenergy use the results show that the use of biomass for energy purposes will impact the concentration of GHG in the atmosphere, especially if the entire supply chain is considered and the indirect effect on land use change and material substitution are taken into account.

Different bioenergy scenarios show a rather large difference in the emissions associated with the production and use of bioenergy. The results are sensitive to the assumptions on the feedstock and the volume of biomass used energy. In some scenarios bioenergy production can provide substantial GHG emissions savings compared to fossil fuels. In other scenarios the use of bioenergy is not contributing to the GHG emissions savings.

In general, bioenergy produced from biomass residues and waste will have a low impact on the environment, if there are no alternative uses of the biomass. Biomass produced on marginal farm land with a short rotation length can also have a low carbon impact if the ILUC-effect is low.

On the other hand, changes in the carbon stocks due to deforestation, forest degradation and other direct land-use change can lead to high GHG emissions in the short and medium term. This could for example be a more systematic conversion of mature forests with high levels of standing volume to faster growing plantations with a lower standing volume and perhaps not in full accordance with the principles of sustainable forest management. This is probably more likely to happen in countries with weak regulation on forest management. In a longer perspective such conversion might lead to reduced net emissions due to the increased annual uptake in forests, but the time horizon for reaching the turning point might be very long.

Environmental impacts

Public acceptance of the use of bioenergy is becoming more important as the use of bioenergy increases. Environmental aspects such as biodiversity and environmental effects are significant in this regard. An intensified use of marginal farmland and production of wood in previously more extensively used forests tends to adversely impact the environment (air, water and soil) as well as biodiversity. Depending of the origin, even greater risks can be associated with imported biomass from countries outside EU, especially developing countries with weak forest governance and insufficient environmental and ecosystem protection.

Resource efficiency

Biomass should be regulated, with a view to taking into account the related externalities.

Air impacts

Depending on the fuel that biomass is replacing, there is risk of increased emissions of NOx, SOx, particles and other polluting substances, especially when using biomass in combustion plants. In order to not impede the targets for air quality when achieving the climate and energy targets, it is

necessary to keep a close eye on the air emissions from biomass, and possibly include special or extra exhaust cleaning in the biomass activities.

5. EFFECTIVENESS OF EXISTING EU SUSTAINABILITY SCHEME FOR BIOFUELS AND BIOLIQUIDS

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

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

In 2015, new rules[12] 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).

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

[12] 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).

GHG emissions from cultivation, processing and transport	O	●	O	O	O
GHG emissions from direct land-use change	O	●	O	O	O
Indirect land-use change	O	O	O	●	O
Impacts on biodiversity	O	O	O	O	●
Impact on soil, air and water	O	O	O	O	●

Any additional comments?

The existing scheme with threshold values for direct emissions and verification procedures have gone some way to prevent the low performing biofuels from entering the market. However, the existing sustainability scheme does not take into account the ILUC-effect. Therefore, the existing scheme has promoted the establishment of a large industry, a considerable part of which delivers small or in some cases practically no emission reductions if the ILUC-effect were taken into account. This holds especially true for the biodiesel sector.

(2500 characters 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)?

O very effective

O effective

● neutral

O counter-productive

O no opinion

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

Double counting has promoted some forms of waste based biofuels, notably biodiesel based on animal fat or used cooking oil (UCO). However, the existing regulation has not been able to underpin the development of biofuels based on other feedstocks, such as ligno-cellulose or cellulose from agricultural or forest residues. Additional measures are needed to promote the latter, in order to broaden the feedstock basis of biofuels, and hence these should be analyzed further.

(2500 characters maximum)

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)?

O very effective

● effective

O not effective

O 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?

The introduction of harmonized sustainability criteria for transport biofuels and voluntary certification schemes approved by the Commission have reduced administrative burdens for the companies that have to prove sustainability, and have made cross border trade easier.

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 existing support mechanisms for innovative low-carbon technologies relating to bioenergy?

Long term Research and Development (R&D) programs are needed if we are to exploit the full potential of bioenergy in the EU energy system. The use of bioenergy involves numerous pathways and conversion routes which needs further development if they are to play a role in the future. R&D efforts are needed in different parts of the value chain. There must be a link between R&D and the framework conditions for using bioenergy in the energy system in order to make it possible for innovative technologies to leave the laboratory and come into operation. Sustainability criteria should be a part of the framework condition in order to avoid the use of unsustainable types of bioenergy and provide the most sustainable and efficient types a competitive advantage.

6. EFFECTIVENESS OF EXISTING EU POLICIES IN AD DRESSING 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	O	O	●	O	O
Change in carbon stock due to deforestation, forest degradation and other direct land-use change in non-EU countries	O	O	O	●	O
Indirect land-use change impacts	O	O	O	●	O
GHG emissions from supply chain, e.g. cultivation, processing and transport	O	●	O	O	O
GHG emissions from combustion of biomass ('biogenic emissions')	O	O	O	●	O
Air quality	O	O	O	O	●
Water and soil quality	O	O	O	O	●
Biodiversity impacts	O	O	O	O	●
Varying degrees of efficiency of biomass conversion to energy	O	O	●	O	O
Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks	O	O	O	●	O
Other (please specify)	O	O	O	O	O

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

There are a number of existing EU policies in place which have an impact on the use of especially solid biomass for energy. Some of these policies are:

- The EU Emissions Trading Scheme
- The Renewable Energy Directive
- The European Union Timber Regulation
- The Common Agricultural Policy and Rural Development Program
- The EU LULUCF decision
- The EU biodiversity strategy
- The EU forest strategy and the Standing Forest Committee

The policies listed are targeting different areas related to biomass sustainability and they are related to different parts of the biomass supply chain (from production and harvesting to distribution and end use).

It is important to note that there are no mandatory EU policies in place directly targeting all relevant sustainability risks associated with the use of solid and gaseous biomass for heating, cooling and electricity. The answers given in section 5.1 on the effectiveness of current EU policies are reflecting this fact.

The renewable energy directive is currently encouraging the use of bioenergy, but it does not have the sufficient measures to assure mitigation of the risks related to the production and use of solid biomass for bioenergy. Therefore the Danish government supports a new EU bioenergy sustainability policy for the period after 2020.

Currently, the lack of common EU regulation on biomass sustainability has an adverse impact on the international trade of solid biomass due to the different national sustainability schemes. The differences in the national regulation have the risk of leading to arbitrage and limiting the environmental and cost effectiveness of national regulation. Further, the biomass producers are faced with different regulatory requirements in different EU Member States and this is likely to result in increased transaction costs.

7. POLICY OBJECTIVES FOR A POST-2020 BIOENERGY SUSTAINABILITY POLICY

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

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Contribute to climate change objectives	●	O	O	O	O	O	O	O	O	O
Avoid environmental impacts (biodiversity, air and water quality)	O	O	●	O	O	O	O	O	O	O
Mitigate the impacts of indirect land-use change	O	●	O	O	O	O	O	O	O	O
Promote efficient use of the biomass resource, including efficient energy conversion	O	O	O	O	O	O	O	O	O	O
Promote free trade and competition in the EU among all end-users of the biomass resource	O	O	O	O	●	O	O	O	O	O
Ensure long-term legal certainty for operators.	O	O	O	O	O	O	O	O	O	O
Minimise administrative burden for operators	O	O	O	O	O	O	O	O	O	O

Promote energy security	O	O	O	●	O	O	O	O	O	O
Promote EU industrial competitiveness, growth and jobs	O	O	O	O	O	O	O	O	O	O
Other (please specify)	O	O	O	O	O	O	O	O	O	O

7.2. Any other views? Please specify

The answers under 6.1 show a rank of the five most important objectives for a new EU sustainable bioenergy policy according to view of the Danish government. It is important to emphasise that there is not necessarily a trade-off between the different objectives, and that the objectives which have not been ranked are also important and should also be considered when designing a new EU policy for sustainable bioenergy.

8. EU ACTION ON SUSTAINABILITY OF BIOENERGY

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

O 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.

O Yes: additional policy is needed for solid and gaseous biomass, but for biofuels and bioliquids the existing scheme is sufficient.

O 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

Denmark will strongly encourage the European Commission to develop a proposal for mandatory sustainability criteria which covers all uses of bioenergy.

A common set of criteria can ensure the functioning of the internal market and minimize administrative burdens for producers and operators. The criteria should build on the experiences with existing national initiatives in Member States such as DK, UK, NL and BE. Further, the commonly used and widely recognized sustainable forest management criteria and indicators developed under Forest Europe should form the basis for a new EU sustainable bioenergy policy.

In Denmark, the energy sector has made an industry agreement in order to ensure sustainable wood pellets and wood used in energy plants above 20 MW. The sustainability criteria follows the recommendations from the European Commission on national sustainability criteria for solid and

gaseous biomass and, further, it also contain specific requirements concerning legality, protection of forest ecosystems, productivity and biodiversity (inspired by Forest Europe, the UK regulation and the Danish criteria for public procurement of timber). An English version of the industry agreement is attached.

Regarding transport fuels, the framework should take into account the ILUC-effect caused by especially food based biofuels but potentially also energy crop based biofuels. The framework could promote biofuels with low risk of ILUC-effects e.g. biofuels based on waste and residues, for instance it should be considered setting a subtarget for such biofuels. It is important to analyze the costs of any regulation.

9. ADDITIONAL CONTRIBUTION

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

An English version of the voluntary industry agreement on sustainable biomass is attached.

Finally, you may upload 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!