

A sustainable bioenergy policy for the period after 2020

Fields marked with * are mandatory.

Introduction

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

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

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

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

Currently, the Renewable Energy Directive[3] and the Fuel Quality Directive[4] provide an EU-level sustainability framework for biofuels[5] and bioliquids.[6] This includes harmonised sustainability criteria for biofuels and provisions aimed at limiting indirect land-use change,[7] which were introduced in 2015.[8]

In 2010, the Commission issued a Recommendation[9] that included non-binding sustainability criteria for solid and gaseous biomass used for electricity, heating and cooling (applicable to installations with a capacity of over 1 MW). Sustainability schemes have also been developed in a number of Member States.

The Commission is now reviewing the sustainability of all bioenergy sources and final uses for the period after 2020. Identified sustainability risks under examination include lifecycle greenhouse gas emissions from bioenergy production and use; impacts on the carbon stock of forests and other ecosystems; impacts on biodiversity, soil and water, and emissions to the air; indirect land use change impacts; as well as impacts on the competition for the use of biomass between different sectors (energy, industrial uses, food). The Commission has carried out a number of studies to examine these issues more in detail.

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

[1] COM(2014) 15.

[2] COM/2015/080 final.

[3] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16).

[4] Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC (OJ L 350, 28.12.1998, p. 58).

[5] Used for transport.

[6] Used for electricity, heating and cooling.

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

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

[9] COM/2010/0011 final.

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

1. General information about respondents

★ 1.1. In what capacity are you completing this questionnaire?

- ☐ academic/research institution
- ☐ as an individual / private person
- ☐ civil society organisation
- ☐

- ☐ international organisation
- ☒ other
- ☐ private enterprise
- ☐ professional organisation
- ☐ public authority
- ☐ public enterprise

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

200 character(s) maximum

Energy Agency for Southeast Sweden. The company is jointly owned by an association where regional councils, counties and municipalities in Blekinge, Kalmar and Kronoberg are members.

1.9. If your organisation is registered in the Transparency Register, please give your Register ID number.

(If your organisation/institution responds without being registered, the Commission will consider its input as that of an individual and will publish it as such.)

200 character(s) maximum

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1.10. Please give your country of residence/establishment

- ☐ Austria
- ☐ Belgium
- ☐ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Estonia
- ☐ Finland
- ☐ France
- ☐ Germany
- ☐ Greece
- ☐ Hungary
- ☐ Ireland
- ☐ Italy
- ☐ Latvia
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Malta
- ☐ Netherlands

- ☐ Poland
- ☐ Portugal
- ☐ Romania
- ☐ Slovakia
- ☐ Slovenia
- ☐ Spain
- ☒ Sweden
- ☐ United Kingdom
- ☐ Other non-EU European country
- ☐ Other non-EU Asian country
- ☐ Other non-EU African country
- ☐ Other non-EU American country

★ 1.11. Please indicate your preference for the publication of your response on the Commission's website:

(Please note that regardless the option chosen, your contribution may be subject to a request for access to documents under [Regulation 1049/2001](#) on public access to European Parliament, Council and Commission documents. In this case the request will be assessed against the conditions set out in the Regulation and in accordance with applicable [data protection rules](#).)

- ☒ Under the name given: I consent to publication of all information in my contribution and I declare that none of it is subject to copyright restrictions that prevent publication.
- ☐ Anonymously: I consent to publication of all information in my contribution and I declare that none of it is subject to copyright restrictions that prevent publication.
- ☐ Please keep my contribution confidential. (it will not be published, but will be used internally within the Commission)

Perceptions of bioenergy

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















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

- ☐ Bioenergy should continue to play a dominant role in the renewable energy mix.
- ☒ Bioenergy should continue to play an important role in the renewable energy mix, but the share of other renewable energy sources (such as solar, wind, hydro and geothermal) should increase significantly.
- ☐ Bioenergy should not play an important role in the renewable energy mix: other renewable energy sources should become dominant.

2.2. Perception of different types of bioenergy

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

	Should be further promoted	Should be further promoted, but within limits	Should be neither promoted nor discouraged	Should be discouraged	No opinion
Biofuels from food crops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from agricultural and forest residues	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels from algae	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from manure	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from food crops (e.g. maize)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Biogas from waste, sewage sludge, etc.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat and power from forest biomass (except forest residues)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Heat and power from forest residues (tree	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

sourced feedstocks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bioenergy based on feedstocks sourced in the EU	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bioenergy based on feedstocks imported from non-EU countries	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>


























3. Benefits and opportunities from bioenergy

3.1. Benefits and opportunities from bioenergy

Bioenergy (biofuel for transport, biomass and biogas for heat and power) is currently promoted as it is considered to be contributing to the EU's renewable energy and climate objectives, and also having other potential benefits to the EU economy and society.

Please rate the contribution of bioenergy, as you see it, to the benefits listed below (one answer per line):

	of critical importance	important	neutral	negative	No opinion
Europe's energy security: safe, secure and affordable energy for European citizens	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grid balancing including through storage of biomass (in an electricity system with a high proportion of electricity from intermittent renewables)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduction of GHG emissions	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental benefits (including biodiversity)	<input 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					
Competitiveness of European industry					
Growth and jobs, including in rural areas					
Sustainable development in developing countries					
Other					

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

2500 character(s) maximum

The environmental benefits of bioenergy depends on with what it is compared. Compared with fossil fuels such as coal and oil, the environmental benefits are great. In our region, Southeast of Sweden, more than 50% of the energy use originates from bioenergy. GHG emissions have decreased by 15% compared to 1990. The increased use of bioenergy is the main contributor to the decrease of emissions. The increased use of bioenergy has contributed to our regional development by reducing the import of oil, improved security of supply in the energy sector, and created jobs and new businesses. Forestry and agriculture in general, is very important for rural development. Two of the largest pulp mills in Sweden are located in our region, and the region has a long tradition of forest industries such as sawmills and businesses related to forestry. Many of the industries in the region are based on forest-feedstock because the region has large quantities of forest and a long history of forestry. For these industries the development during the last 20-30 years has had multiple benefits. The value of by-products and waste from sawmills and pulp mills has increased and given new incomes when the fuels have been sold to heat plants, CHP:s and wood pellet factories. The forest industries have also been very successful in reducing their own oil dependence by increasing the use of their own by-products and residues. This has reduced the costs and increased the security of supply. Almost all use of fossil fuels in district heating plants has been substituted with wood fuels or municipal waste. The transition into a fossil-free economy with increased use of bioenergy has been successfully performed in private households, the industry sector and in the energy sector. In 2015, the total use of biofuels in Sweden were 14.7 percent of all transport fuels. Thereby, Sweden has reached the 20-20-20 goal with 10% renewables in the transportation. In Southeast Sweden the region of Kalmar will replace all fossil fuelled vehicles in public transports with renewables, of which 60 % will run on biomethane. The biomethane will be produced from different wastes, especially manure, by local farmers and in such way create not only less CO2 emissions but also more jobs and economic growth in the region. The region as a whole already has 54 busses, 30 garbage trucks and

more than 1000 passenger cars running on biomethane and the production has increased from 1 MNm³ to 7.4 MNm³ during the last four years
















4. Risks from bioenergy production and use

4.1. Identification of risks

A number of risks have been identified (e.g. by certain scientists, stakeholders and studies) in relation to bioenergy production and use. These may concern specific biomass resources (agriculture, forest, waste), their origin (sourced in the EU or imported) or their end-uses (heat, electricity, transport).

Please rate the relevance of each of these risks as you see it (one answer per line):

	critical	significant	not very significant	non-existent	No opinion
Change in carbon stock due to deforestation and other direct land-use change in the EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Change in carbon stock due to deforestation and other direct land-use change in non-EU countries	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indirect land-use change impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
GHG emissions from the supply chain (e.g. cultivation, processing and transport)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GHG emissions from combustion of biomass ('biogenic emissions')	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Impacts on air quality	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts on water and soil	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts on biodiversity	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Varying degrees of efficiency of biomass conversion to energy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks and/or subsidies for specific uses					
Internal market impact of divergent national sustainability schemes					
Other					

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

2500 character(s) maximum

Our answers are based on the situation in Sweden. Today the Swedish forest increases by around 130 million m³/y, and around 90 million m³/y is used for industrial utilization.

Forests are very important carbon sinks. However, sustainable managed forests will increase the carbon sink of forest and simultaneously create feedstock for energy production and materials. For over 100 years the carbon sink of the Swedish forest has increased in parallel with an increase production of processed forest products. Sustainable forest management will therefore contribute to an increased forest growth, an increased carbon stock and decreased greenhouse gas emissions.

Today, there is great volumes of forest residues that are being unused. A more efficient and better utilization of forest residues will strengthen the existing value chains of pulpwood and timber.

For a future sustainable utilization of bioenergy it is important to minimize the impact on biodiversity and risk for other environmental risks.

The large use of forest residues in Sweden has increased the research concerning soil and water quality, nutrient balance, biodiversity, and other risks with forest management. The research has mostly been funded by the Swedish Energy Agency and has been carried out by Swedish Universities and research institutions. The research show that if proper methods and strategies are implemented, it is possible to carry out large scale forestry with limited environmental risks. In Sweden many methods and regulations have been implemented to avoid risks and negative impacts.

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

In 2009, the EU established a set of sustainability criteria for biofuels (used in transport) and bioliquids (used for electricity and heating). Only biofuels and bioliquids that comply with the criteria

can receive government support or count towards national renewable energy targets. The main criteria are as follows:

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

In 2015, new rules[1] came into force that amend the EU legislation on biofuel sustainability (i.e. the Renewable Energy Directive and the Fuel Quality Directive) with a view to reducing the risk of indirect land-use change, preparing the transition to advanced biofuels and supporting renewable electricity in transport. The amendments:

- limit to 7 % the proportion of biofuels from food crops that can be counted towards the 2020 renewable energy targets;
- set an indicative 0.5 % target for advanced biofuels as a reference for national targets to be set by EU countries in 2017;
- maintain the double-counting of advanced biofuels towards the 2020 target of 10 % renewable energy in transport and lay down a harmonised EU list of eligible feedstocks; and
- introduce stronger incentives for the use of renewable electricity in transport (by counting it more towards the 2020 target of 10 % renewable energy use in transport).

[1] Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources (OJ L 239, 15.9.2015, p. 1).

5.1. Effectiveness in addressing sustainability risks of biofuels and bioliquids

In your view, how effective has the existing EU sustainability scheme for biofuels and bioliquids been in addressing the risks listed below? (one answer per line)

	effective	partly effective	neutral	counter-productive	No opinion
GHG emissions from cultivation, processing and transport	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GHG emissions from direct land-use change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Indirect land-use change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Impacts on biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Impact on soil, air and water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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

In Sweden and in our region, with a large forest, producing transportation fuels from cellulosic, tall oil and ligning and other feedstocks create great opportunities. There is several projects that is ongoing or put on hold concerning production of second generation of biofuels. The most important factor for this development to proceed is long-term, stable energy policies that can guarantee a market for these biofuels. In order to reach large volumes of biofuels, for example aviation fuel or ship fuel, research has shown that biofuel based on cellulose must be used.

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

A recent study performed by the Swedish Energy Agency (Systemet för hållbarhetskriterier i Sverige, ER2015:21) shows that the sustainable criterias for biofuels and bioliquid has resulted in increased costs for producers and distributors of biofuels and bioliquids. The study shows higher costs (costs/litre of fuel) for small actors, due to the increased administrative burden, than for large actors on the market. The administrative burden for bioenergy should also be compared to the administrative burden for fossil fuels. The fossil fuels have no criterias and it is not mandatory to declare the origin or give information about the environmental harm of using fossil fuels. This gives biofuels an extra (and costly) disadvantage compared to the fossil fuels on the transportation fuel market.

In ESS point of view is that the lessons learned from the RED for biofuels and bioliquids are:

- To protect small and medium enterprises, there need to be a threshold for reporting
- To be able to compete on equal grounds with fossil fuels, there needs to be criteria also for fossil fuels

5.4. Deployment of innovative technologies

In your view, what is needed to facilitate faster development and deployment of innovative technologies in the area of bioenergy? What are the lessons to be learned from the existing support mechanisms for innovative low-carbon technologies relating to bioenergy?

2500 character(s) maximum

From Sweden, where bioenergy is the major part of the energy supply, the lesson learned is that a carbon tax is a very strong incentive to promote a technology neutral development and deployment of bioenergy. The results also show that it has been a cost-effective way to go. The development of new technologies such as gasification of forest residues to methane, DME, or Fischer tropes diesel or production of biogas and second generation of ethanol from forest residues will need large investment in coming years. A recent study by the Swedish research programme Värmeforsk (Status och erfarenheter från befintliga och planerade bioenergikombinat, 2014) shows that the most important factor for these technologies to development is long term framework and stable energy policies. One such


























parameter is carbon tax. Direct support will be needed in the development, research and marketing phase. However, the need of long-term policies and regulations are critical in order to be able to create a market for biofuels that can compete with fossil alternatives.

An example from our region is that a late decision regarding tax exemption for biogas production forced many possible producers to put the investments on hold. That clearly decreased the renewable fuel production to the transportation sector.

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

6.1. In addition to the non-binding criteria proposed by the Commission in 2010, a number of other EU policies can contribute to the sustainability of solid and gaseous bioenergy in the EU. These include measures in the areas of energy, climate, environment and agriculture.

In your view, how effective are current EU policies in addressing the following risks of negative environmental impacts associated with solid and gaseous biomass used for heat and power? (one answer per line)

	effective	partly effective	neutral	counter-productive	No opinion
Change in carbon stock due to deforestation, forest degradation and other direct land-use change in the EU					
Change in carbon stock due to deforestation, forest degradation and other direct land-use change in non-EU countries					
Indirect land-use change impacts					
GHG emissions from supply chain, e.g. cultivation, processing and transport					
GHG emissions from combustion of biomass ('biogenic emissions')					

Air quality	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water and soil quality	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biodiversity impacts	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Varying degrees of efficiency of biomass conversion to energy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify the "other" choice

200 character(s) maximum

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

2500 character(s) maximum

Concerning land use change – the most severe impact on land use is building on agricultural land. As long as there are no regulations against that, the risk for impact on land use change from biomass is very small compared.

The carbon stock is growing in our forest and there is no risk for deforestation. We have long experiences of forestry and our national legislation guarantee replanting after harvesting.

There is more to work on concerning GHG emissions in the supply chain of bioenergy. Here the fossil fuels could be reduced by for example carbon pricing and other measures that stimulates farmers, foresters and the bioenergy industry to use bioenergy for their own energy demand.

With efficient and sustainable forestry, GHG emissions from biomass are carbon neutral.

Other emissions from the combustion are regulated in for example the air quality directives.

Increased use of biomass from forestry can therefore significantly contribute to the Swedish climate goals and a sustainable future.

Bioenergy is needed in order for us to be able to stop the climate change. Today, EU policies are not strong enough to ensure efficiency of biomass

conversion to energy, the example of the city of Växjö clearly shows this. The Swedish government has taken the city of Växjö to court for imposing efficient district heating from co-generation of forest residues, in a new development area.

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

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

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Contribute to climate change objectives	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid environmental impacts (biodiversity, air and water quality)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote efficient use of the biomass resource, including efficient energy conversion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote free trade and competition in										

the EU among all end-users of the biomass resource	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Ensure long-term legal certainty for operators	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimise administrative burden for operators	<input type="radio"/>	<input type="radio"/>	<input 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 energy security	<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"/>
Promote EU industrial competitiveness, growth and jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2. Any other views? Please specify

2500 character(s) maximum

The purpose of an improved sustainable policy for biomass is to guarantee that the biomass used contribute to the climate policy and reduce the emissions of greenhouse gases and replaces fossil fuels. An improved sustainable policy for biomass will guarantee that the biomass is harvested with respect to biodiversity, air and water quality as well as to protected areas.

The purpose is also to guarantee the same rules in all member countries. However, it is important to avoid unnecessary administrative burden for small companies that deliver the biomass. In our region, the foresters are small enterprises that already today, struggle with a too low price of their products. With an increased administrative burden there might be a risk that the bioenergy stay in the forest instead of replacing fossil fuels.

8. EU action on sustainability of bioenergy

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

- ☐ No: the current policy framework (including the sustainability scheme for biofuels and bioliquids, and other EU and national policies covering solid and gaseous biomass) is sufficient.
- ☒ Yes: additional policy is needed for solid and gaseous biomass, but for biofuels and bioliquids the existing scheme is sufficient.
- ☐ Yes: additional policy is needed on biofuels and bioliquids, but for solid and gaseous biomass existing EU and national policies are sufficient.
- ☐ Yes: a new policy is needed covering all types of bioenergy.

8.2. In your view, and given your answers to the previous questions, what should the EU policy framework on the sustainability of bioenergy include? Please be specific

5000 character(s) maximum

EU policy for sustainable bioenergy should guarantee sustainable utilization of biomass. That the biomass is harvested with respect to biodiversity, air and water quality as well as protected areas.

EU policy for sustainable bioenergy should also guarantee bioenergy to compete on equal grounds with fossil fuels, similar regulations must therefore also be introduced for fossil fuels. The legislation must take into account that the ecosystem from bioenergy differs throughout EU and the diversity should be taken into account. The legislation should focus on large scale conversion of bioenergy in order to avoid to put too high administrative burden on small scale actors. There is a risk that a high administrative burden force small actors to close their business, which would lead to unemployment and decelerate the region development in Southeast of Sweden.

The sustainable criteries must be clear and easy to calculate in order to avoid an additional administrative burden to especially small and medium operators on the market. If the cost for administration will be too high,

bioenergy will be less competitive with fossil fuels.

It is also important that the criterias is equal or same of different end-users. One forest owner can deliver the same product to different end-users and to avoid to complicate the administration, the same criterias should be used. The criterias should also be the same for all products, electricity, heat and biofuels. In the future the production may occur in the same industry and it would not be sustainable to have different criteries for the feedstock depending on the final product.

9. Additional contribution

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

5000 character(s) maximum

In our comments we focus mainly on forest biomass and from a Swedish perspective. Sweden has long experience with large forestry. In our view the European bioeconomy is about: security of supply, replacing fossil based materials in different consumers and industrial products, in heat and power production and in the transportation sector. The focus must be on a fossil free economy and the sustainability of biomass should be estimated compared to the fossil-alternatives used today. In the transition to a fossil-fuel free economy, forest biomass has a significant role!.

EU policy on the sustainability of bioenergy should focus on sustainable utilization of the biomass. It is important that the sustainability of utilization is guaranteed, especially since the share of bioenergy will increase in the future. The sustainability criterias should include the whole chain, from primary production to end users.

Southeast of Sweden has almost deleted their oil dependancy due to the use of bioenergy. The share of bioenergy in our region is over 50%, which is higher than the average value in Sweden. Our regional development has been related to the expansion of the forest and agriculture industry. Today, the industry in our area relies on bioenergy, both as feedstock and for energy use. Bioenergy is very important for the economy in our region and with a large forest and a highly efficient forest industry it will continue to be important. A successful development of advanced bio-fuels, would be very positive for our regional development.

It is very important that the biomass is utilized efficiently. This can be improved in EU. The forest industry is a great example of smart and efficient use of bioenergy. Production of bioenergy should use the best available technologies, considering both resource effiecently and energy efficiency. Combined heat and power production should be favourable and further promoted by EU in order to get an efficient use of the biomass. Research should continue to develop improved technologies and methods for sustainable

harvesting, forest management and utilization of biomass in order to minimize the effect on biodiversity, air and water quality and maximize the effect of reducing fossil GHG emissions.

A resource efficient use of different part of the tree has been developed due to strong synergy effects between different end users. The best example of a highly efficient utilization of biomass is the forest industry. In our region the pulp mills are producing their core product pulp mill. The energy needed for the production comes from residues and waste created in the process. Excess heat from the pulp process is delivered to district heating network that supplies nearby communities. Residues from the production are sold and used in district heating plants and for pellet production. The by-product tall oil is used for producing biofuel (HVO).

Cascade use of biomass should not prevent this kind of sustainable utilization of available raw materials.

There is also other great examples of energy combines in Sweden that utilize the biomass in a very efficient way. In the future, such energy combines will be able to produce a variety of different products including advanced bio-fuels. It is therefore impossible to define on EU level what is the main product, co-product, by-product or waste. Cascade use is not a guarantee for resource efficiency and sustainable use of bioenergy.

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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