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

* 1.7. 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

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

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

200 character(s) maximum

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1.10. Please give your country of residence/establishment

- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece

- ○ Hungary
- ○ Ireland
- ○ Italy
- ○ Latvia
- ○ Lithuania
- ○ Luxembourg
- ○ Malta
- ○ Netherlands
- ○ Poland
- ○ Portugal
- ○ Romania
- ○ Slovakia
- ○ Slovenia
- ○ Spain
- ◉ Sweden
- ○ United Kingdom
- ○ Other non-EU European country
- ○ Other non-EU Asian country
- ○ Other non-EU African country
- ○ Other non-EU American country

* 1.11. Please indicate your preference for the publication of your response on the Commission's website:
(Please note that regardless the option chosen, your contribution may be subject to a request for access to documents under Regulation 1049/2001 on public access to European Parliament, Council and Commission documents. In this case the request will be assessed against the conditions set out in the Regulation and in accordance with applicable data protection rules.)

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 (it will not be published, but will be used internally within the Commission)

Perceptions of bioenergy

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

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

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

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

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

2.2. Perception of different types of bioenergy

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

	Should be further promoted	Should be further promoted, but within limits	Should be neither promoted nor discouraged	Should be discouraged	No opinion
Biofuels from food crops	○	○	○	○	○
Biofuels from energy crops (grass, short rotation coppice, etc.)	○	○	○	○	○
Biofuels from waste (municipal solid waste, wood waste)	○	○	○	○	○
Biofuels from agricultural and forest residues	○	○	○	○	○
Biofuels from algae	○	○	○	○	○
Biogas from manure	○	○	○	○	○
Biogas from food crops (e.g. maize)	○	○	○	○	○
Biogas from waste, sewage sludge, etc.	○	○	○	○	○

Heat and power from forest biomass (except forest residues)	◉	○	○	○	○
Heat and power from forest residues (tree tops, branches, etc.)	◉	○	○	○	○
Heat and power from agricultural biomass (energy crops, short rotation coppice)	◉	○	○	○	○
Heat and power from industrial residues (such as sawdust or black liquor)	◉	○	○	○	○
Heat and power from waste	◉	○	○	○	○
Large-scale electricity generation (50 MW or more) from solid biomass	◉	○	○	○	○
Commercial heat generation from solid biomass	◉	○	○	○	○
Large-scale combined heat and power generation from solid biomass	◉	○	○	○	○
Small-scale combined heat and power generation from solid biomass	◉	○	○	○	○

Heat generation from biomass in domestic (household) installations	◉	○	○	○	○
Bioenergy based on locally sourced feedstocks	◉	○	○	○	○
Bioenergy based on feedstocks sourced in the EU	◉	○	○	○	○
Bioenergy based on feedstocks imported from non-EU countries	◉	○	○	○	○
Other	◉	○	○	○	○

Please specify the "other" choice

200 character(s) maximum

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We do not use the term food crops in energy contexts. Only crops not meeting
quality requirements for food purposes are used for biofuels. Agricultural
crops for energy are referred to as energy crops
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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	◉	○	○	○	○

Grid balancing including through storage of biomass (in an electricity system with a high proportion of electricity from intermittent renewables)	○	●	○	○	○
Reduction of GHG emissions	●	○	○	○	○
Environmental benefits (including biodiversity)	○	●	○	○	○
Resource efficiency and waste management	●	○	○	○	○
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	●	○	○	○	○

Please specify the "other" choice

200 character(s) maximum

Salix as energy crop can be used for wastewater treatment and also concentration of diluted heavy metals from soil hence serving as both fuel and ecosystem service

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

2500 character(s) maximum

Biomass based industry is a cornerstone in our region. Industrial systems are built up with resource efficiency and sustainability as guiding stars. Bioenergy value chains are primarily built on a cascading principle and virgin biomass is only used for energy purposes if it does not meet quality damands for food or timber purposes. Even though most of our industrial systems may be defined as “first generation biofuels” they are nevertheless resource efficient and provide job opportunities. There is room for development, but it is important for our region that the “best does not become an enemy of the good”; biofuels (all generations) need to be a cornerstone in the solutions to

meet the 1.5 degree target. Therefore all fuels and biobased systems should first of all be evaluated in terms of their climate reduction potential. Rating them as in question 2.1 indicates that there is a competition or an optimal choice for biofuel production and use. We believe that putting different biomass-based solutions as opposite competitors would not only be devastating to well-functioning and resource efficient biobased value chains present in our region today - it would cripple the region's capacity to contribute to meeting the 1.5 degree target.

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 asnwer 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	○	○	○	◉	○
Change in carbon stock due to deforestation and other direct land-use change in non-EU countries	○	◉	○	○	○
Indirect land-use change impacts	○	○	◉	○	○
GHG emissions from the supply chain (e.g. cultivation, processing and transport)	○	○	◉	○	○
GHG emissions from combustion of biomass ('biogenic emissions')	○	○	◉	○	○
Impacts on air quality	○	○	◉	○	○
Impacts on water and soil	○	○	◉	○	○

Impacts on biodiversity	○	○	◉	○	○
Varying degrees of efficiency of biomass conversion to energy	○	◉	○	○	○
Competition between different uses of biomass (energy, food, industrial uses) due to limited availability of land and feedstocks and/or subsidies for specific uses	○	○	○	◉	○
Internal market impact of divergent national sustainability schemes	○	○	◉	○	○
Other	○	○	○	○	○

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

2500 character(s) maximum

In Östergötland we have long experience from agriculture and forestry with focus on sustainability. This means that nutrient balance, re-growth as well as biodiversity are natural parts of land use management. As stated by the Swedish Energy Agency, Swedish forestry and agriculture can produce more biomass for energy purposes with no or very little additional environmental pressure or negative effects on biodiversity. Furthermore, Swedish technology for exhaust gas as well as waste water treatment is world-leading and we believe that our knowledge and experience should be regarded and utilized when developing biomass based value chains within EU.

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

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

- Biofuels produced in new installations must achieve GHG savings of at least 60 % in comparison with fossil fuels. In the case of installations that were in operation before 5 October 2015, biofuels must achieve a GHG emissions saving of at least 35 % until 31 December 2017 and at least

50 % from 1 January 2018. Lifecycle emissions taken into account when calculating GHG savings from biofuels include emissions from cultivation, processing, transport and direct land-use change;

- Biofuels cannot be grown in areas converted from land with previously (before 2008) high carbon stock, such as wetlands or forests;
- Biofuels cannot be produced from raw materials obtained from land with high biodiversity, such as primary forests or highly biodiverse grasslands.

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

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

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

5.1. Effectiveness in addressing sustainability risks of biofuels and bioliquids

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

	effective	partly effective	neutral	counter-productive	No opinion
GHG emissions from cultivation, processing and transport	◉	○	○	○	○
GHG emissions from direct land-use change	◉	○	○	○	○
Indirect land-use change	○	○	○	○	◉
Impacts on biodiversity	◉	○	○	○	○
Impact on soil, air and water	○	○	◉	○	○

Any additional comments?

2500 character(s) maximum

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It is good that so called no-go areas are defined to protect sensitive land
and habitats as well as biodiversity when needed. But these should not be put
into effect when there already exist effective protective legislation and
biofuel utilization has been developed accordingly (as in Sweden). Once again
we emphasize that the best should not be an enemy of the good. It would not be
beneficial for anyone if the well-functioning Swedish bioeconomy is
jeopardized. On the contrary, Swedish first generation biofuels should be
boosted and developed.
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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

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All fuels, biobased or fossil, should be judged in the same way, with a life
cycle perspective allowing system expansion. In Östergötland we have advanced
and resource efficient production systems, based on system optmisation, where
waste crops become ethanol and fodder, process heat is rest heat from CHP and
by-products are treated in anaerobic digesters to produce methane fuel and
bio-fertilizer. The added values from this first generation biofuel production
cannot be taken into account in the current system. Total climate reduction of
the whole value-chain needs to be considered when biofuels are analyzed. With
the existing (local and regional) systems and knowledge-networks as base, new
advanced biofuels can be developed. Forcing the systems to become "second
generation" is thus not only unnecessary, but also wasteful.
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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

The Swedish energy Agency has shown that the administrative burden has increased and resulted in extra costs for producers and distributors of biofuels; the smaller the actor, the higher the relative burden. This is evident in a region as Östergötland with many small actors in agriculture and forestry, where the administrative burden is evident. This should also be seen in the light of that there are no such criteria (and hence administrative burden) on fossil fuels. This is a double punishment for biofuels and sustainability criteria should be introduced for fossil fuels to even out unfair administrative systems. It is also advisable to introduce a threshold for reporting to protect small enterprises from unreasonable amounts of administration.

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

It is important to keep in mind that there already exist proven resource efficient bioenergy systems. These should not be disadvantaged in the strive for new development. Carbon tax or levy could be used to both boost and develop existing technologies and to promote new technologies and innovation. Net carbon reduction should be a guiding star in order to meet the 1.5 degree target. A carbon tax would boost low-carbon technologies and create a long-term market. As there already exist biofuel industries with well-developed value-chains long-term favorable market conditions are more important in the Swedish context than short-term direct support schemes.

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	○	●	○	○	○
Water and soil quality	●	○	○	○	○
Biodiversity impacts	●	○	○	○	○
Varying degrees of efficiency of biomass conversion to energy	○	○	●	○	○
Competition between different uses of biomass (energy, food, industrial uses) due to limited	○	○	●	○	○

availability of land and feedstocks					
Other					

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

2500 character(s) maximum

As we stated before, the use of biomass is crucial to meet the 1.5 degree target. Wood and biomass from agriculture will be needed for biofuels purposes. Current legislation already takes biodiversity, air and water quality and re-planting into account. What is need is that the net carbon reduction in a life cycle perspective is considered by for example a GHG or carbon tax. Less “carbon”-efficient production chains would then not survive due to market conditions.

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	●	○	○	○	○	○	○	○	○	○
Avoid environmental impacts (biodiversity, air and water quality)	○	○	○	○	○	○	●	○	○	○
Mitigate the impacts of indirect land-use change	○	○	○	○	○	○	○	●	○	○
Promote efficient use of the biomass resource, including efficient energy conversion	○	○	○	○	○	●	○	○	○	○
Promote free trade and competition in										

the EU among all end-users of the biomass resource	○	○	○	○	◉	○	○	○	○	○
Ensure long-term legal certainty for operators	○	○	◉	○	○	○	○	○	○	○
Minimise administrative burden for operators	○	○	○	◉	○	○	○	○	○	○
Promote energy security	○	○	○	○	○	○	○	○	○	◉
Promote EU industrial competitiveness, growth and jobs	○	○	○	○	○	○	○	○	◉	○
Other	○	○	○	○	○	○	○	○	○	○

7.2. Any other views? Please specify

2500 character(s) maximum

Several of the alternatives above have no relation to the issue of sustainability. Important in an overall energy policy context, but not relevant in this particular context. The most important, and the most relevant objective of the post 2020-bioenergy sustainability policy is to meet the 1.5 degree target, that is, to contribute to the climate change objectives. This means that fossil fuels need to be replaced with renewable resources such as biofuels. These biofuels should be the ones that can contribute to the largest decreases in GHG emissions, no matter if they are called first or second generation of biofuels. With fair market conditions, higher value bioresources will be used for higher value applications, just as is the case for petroleum products today.

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

A new framework should be based on fuels' contribution to reduced emissions of carbon in its lifecycle, whether it is solid, liquid or gaseous. The criteria must be clear and simple and assess all fuels in a similar manner, renewable fuels as well as fossil fuels. If biofuels are surrounded by bureaucracy, the same system should apply to fossil fuels. A life-cycle perspective would omit the "worst" biofuels from palm oil, but also favor resource efficient existing productions chains as those existing in our region.

New criteria should be based on existing legislation and control systems (which would then automatically embrace air quality and biodiversity). For forest based biofuels new criteria could be developed with the renewable energy directive as a starting point.

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

Sweden has already reached the 2020 renewable target, mostly thanks to the use bioenergy. Sweden has a net-growth of biomass and there is unused fertile land waiting to come into use again. Östergötland has taken the use of bioenergy one step further with advance production chains built on the cascading principle for first generation biofuels. With the knowledge and experience from these existing systems, Östergötland is now aiming to be the worlds' most resource efficient region. This means both developing new systems for second generation technologies AND developing the existing value-chains. Any regulation that would limit the use of bioenergy would threaten this development. A more suitable policy would promote technologies contributing to reduced carbon emissions and a scheme promoting learning from the existing good example of Östergötland when developing new biorefineries and bioenergy production chains.

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

✉ SG-D3-BIOENERGY@ec.europa.eu