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Direction D
New and renewable sources of energy, energy efficiency and innovation

**Results of the
Public Consultation
on the preparation of a report on requirements
for a sustainability scheme for energy uses of biomass**

European Commission
Directorate-General for Energy and Transport
TREN D.1
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In line with the Commission's commitment to transparent and interactive policymaking, this document aims at providing an overview and general impression of the feedback provided to the Commission in the context of a public consultation.
The statements and opinions expressed in the document do therefore in no way necessarily reflect those of the Commission or the Commission services.

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III List of abbreviations

ACCS	Assured Combinable Crops Scheme
AFOLU	Agriculture, Forestry and Other Land Uses
BATNA	Best available technologies now available
BEAT	Biomass Environmental Assessment Tool
BSI	Better Sugarcane Initiative
CBD	Convention on Biological Diversity
CC	Cross Compliance
CDM	Clean Development Mechanism
CEN	European Committee for Standardization
CHP	combined heat and power
CoC	Chain of Custody
CSA	Canadian Standards Association
DAM	Development, application and management
EROEI	Energy Returned on Energy Invested
ETI	Ethical Trading Initiative
EU	European Union
FLO	Fair trade labelling organizations
FSC	Forest Stewardship Council
GHG	Greenhouse Gas
GWP	Global Warming Potential
IPCC	International Panel on Climate Change
LCA	Life-cycle Analysis
MCPFE	Ministerial Conference on the Protection of Forests in Europe
PEFC	Programme for the Endorsement of Forest Certification
PEOLG	Pan-European Operational Level Guidelines
RES Directive	proposed Directive on the promotion of the use of energy from renewable sources
RECS	Renewable Energy Certificate System
RPA	Rural Payment Agency
RSB	Roundtable on sustainable biofuels
RSPO	Roundtable on sustainable palm oil
SAN/RA	Sustainable Agriculture Network/Rainforest Alliance
SRC	Short rotation-coppice

1. Introduction

This paper presents an analysis of the replies to the public consultation exercise on the need for a European-wide sustainability scheme for energy uses of biomass organised by TREN from 16th July – 30th September 2008.

This consultation concerned sustainability criteria for energy uses of biomass *other than transport*. For transport, a public consultation has been carried out on the sustainability of biofuels. The results of that consultation fed into the Commission's proposal for a directive on the promotion of the use of energy from renewable sources (RES Directive¹), which was agreed by the European Parliament and the Council on 17 December 2008². Formal adoption will follow after a legal linguistic review.

More details about the consultation process and reference documents can be found at: http://ec.europa.eu/energy/renewables/consultations/2008_09_30_biomass_en.htm

2. Background Information

On 23rd January 2008 the Commission adopted a new **Energy and Climate Package**, including the RES Directive which sets national binding targets for Member States in view of achieving an overall 20% EU share of renewable energy sources in energy consumption by the year 2020. The RES directive includes a proposal for a sustainability scheme for (a) biofuels for transport and (b) bioliquids used in other sectors (heating and electricity).

The projections made for the Renewable Energy Road Map³ of January 2007 suggested that biomass has the potential to make a very significant contribution to reaching the 20% target. However, concerns have been expressed that such contribution may endanger efforts for sustainable provision of biomass and there are calls to regulate this through the introduction of a wider biomass sustainability scheme. Thus, the Commission launched this consultation to provide input into a report on requirements on a sustainability scheme for energy uses of biomass, planned for December 2009.

3. Statistics

252 responses in total have been received for this consultation exercise, out of 243 have been taken into account, due to some replies having been sent more than once and/or from the same business association and have therefore been taken into consideration only once.

As shown in figure 1, the majority of the responses originate from 20 Member States of the EU-27, 3 from Norway, 1 from Switzerland, 1 from another country not specified, 3 from the US and 2 from Indonesia.

¹ COM(2008)19

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008PC0019:EN:NOT>

² <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+20081217+SIT+DOC+WORD+V0//EN&language=EN>

³ COM(2006)848

<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52006DC0848:EN:NOT>

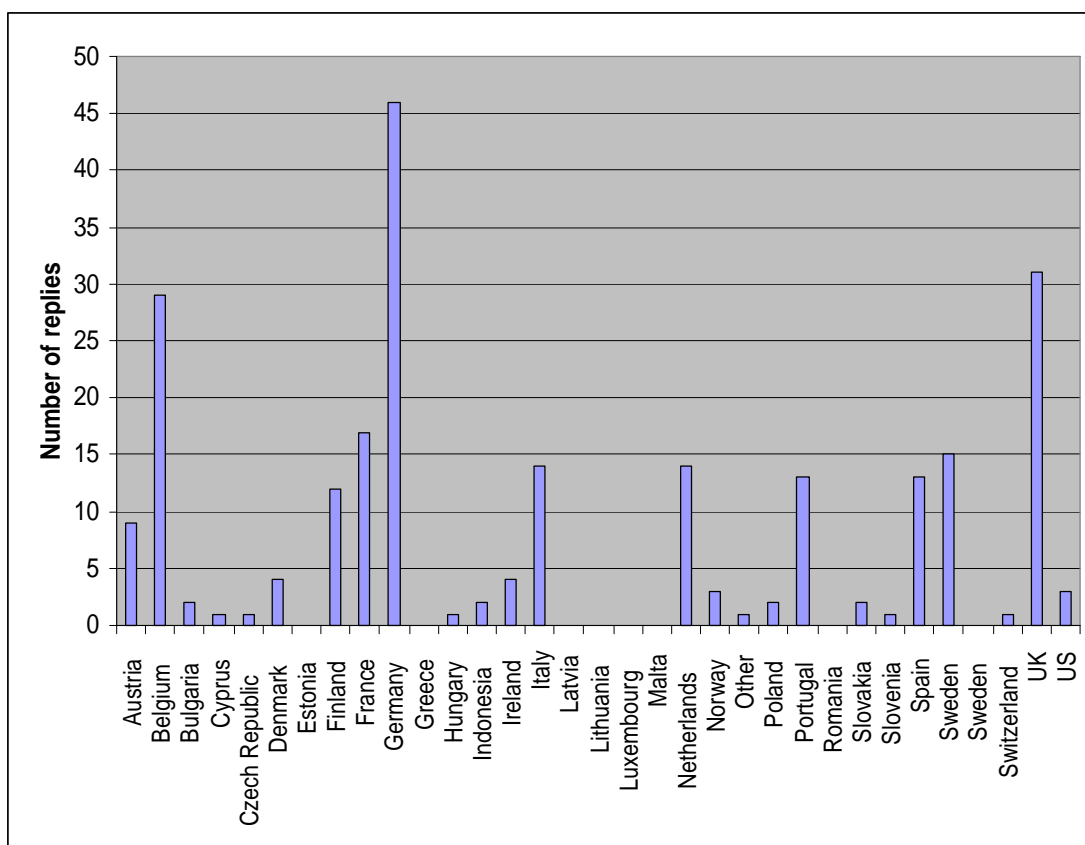


Figure 1: Breakdown of the responses per country of origin

Table 1 shows the distribution of the respondents to the questionnaire by type of organisation.

Respondent category	Total number	Sub-category	Number
Organisations	170	Company/ enterprise/ industry	74
		Business/ professionals association, trade unions	68
		Consultancy/ law firm	8
		Research/ academic institute	8
		NGO	9
		International organisation	2
		Other category	1
Public Authority	19	National authority	6
		Regional/ local authority	7
		Statutory advisor to Government, agency, public institution	6
Citizens	54	Citizens	54
Total			243

Table 1: Breakdown of responses to the public consultation per type of organisation/legal status

As shown in Table 1, the majority of the replies (70%) originate from organisations, mainly from private companies and professionals associations. 22% of the responses come from citizens and only 8% come from public authorities,

4. Content analysis

The content analysis covers the following five parts in line with the questionnaire:

A - General questions about the appropriateness and scope of a biomass sustainability scheme

B - Consideration of the greenhouse gas methodology (based on the methodology proposed in Annex VII of the RES Directive)

C - Consideration of end-use efficiency

D - Consideration of other environmental sustainability criteria such as for sustainable forest management

E - Verification

PART A: GENERAL QUESTIONS AND SCOPE

Question A1: Is there a need for a sustainability scheme for biomass for electricity and heating purposes? If yes, should such a scheme be introduced at EU level, and as such to have a single scheme across the EU or at Member State level?

The vast majority of the respondents (90%) from all sectors agreed that a sustainability scheme for biomass for electricity and heating purposes is needed and that an exclusive limitation to sustainability criteria for transport purposes is not reasonable. Many stakeholders called for consistency with the biofuels for transport sustainability scheme.

90% of stakeholders supported the establishment of a sustainability scheme for some of the following reasons:

- *The prevention of adverse effects for biodiversity and the wider environment.*
- *The avoidance of inefficient energy applications and the need for a level playing field for sustainable biomass production in Europe.*

10% of respondents were against the development of sustainability criteria for biomass, for some of the following reasons:

- *Existing voluntary certification schemes, such as for sustainable forestry (FSC, PEFC, etc.) and environmental regulations are sufficient.*
- *Such a scheme could be counter-productive, as it could result in greater use of fossil fuels and hinder progress towards reaching RES targets by 2020.*
- *New sectors of biomass uses should not get a stricter treatment than traditional uses (food, paper, etc.)*
- *Biomass for electricity and heat production would not raise the same sustainability concerns as biofuels for transport (e.g. no impact on food prices) and is used far more efficiently in energy production, in particular in combined heat and power (CHP) plants.*
- *A scheme will affect the prices of raw materials due to the additional cost to industry.*

Most of the 90% supporting a sustainability scheme for biomass advocated a single scheme across the EU for some of the following reasons:

- *Harmonised policies and coordinated efforts to address global challenges such as climate change are needed.*
- *It will increase the simplicity and clarity of the system, traceability of the origin of biomass, the confidence in the market and the tradability of feedstocks.*
- *Different national schemes would distort competition and create a risk of national protection of technologies.*
- *It will be cost effective in terms of maintenance and audit.*

The majority of stakeholders explicitly requested that if criteria are developed, they should be applicable to imported biomass too, to ensure fair competition between EU production and imports.

Question A2: How should a biomass sustainability scheme be designed?

A biomass sustainability scheme should be:	% of responses
<p><i>legally binding</i>, where only biomass which meets the sustainability criteria would count towards the national renewable energy targets laid down in the RES-Directive (this is the approach followed in the biofuels sustainability scheme)</p> <p><u>Arguments FOR:</u></p> <ul style="list-style-type: none"> • <i>Voluntary schemes are not reliable and give too much leeway to individual interest.</i> • <i>Only legally binding schemes would effectively prevent the use of biomass from non-sustainable production, otherwise renewable energy targets are meaningless in terms of environmental sustainability.</i> <p><u>Arguments AGAINST:</u></p> <ul style="list-style-type: none"> • <i>Legally binding schemes reduce flexibility for new biomass markets and could discriminate small-scale producer.</i> • <i>Legally binding schemes are not justifiable without legally binding schemes also for other biomass purposes such as paper, furniture.</i> 	55%
<p><i>legally binding</i>, where biomass producers (biomass from agriculture, forestry and waste) could only place sustainable biomass on the market</p> <p><u>Arguments FOR:</u></p> <ul style="list-style-type: none"> • <i>Biomass sustainability should be controlled at the source of its production and the responsibility should be with the producers of biomass.</i> • <i>This option would limit the bureaucratic burden and simplify the surveillance of the sustainability scheme.</i> 	18%
<p><i>a voluntary scheme</i>, where biomass producers and electricity, heating and cooling providers must inform consumers about the sustainability of biomass produced/ consumed with appropriate labelling/ information?</p> <p><u>Arguments FOR:</u></p> <ul style="list-style-type: none"> • <i>A voluntary scheme is a good first step to create incentives, a second step might be a legally binding scheme</i> • <i>Certification schemes can build upon the work already initiated by FSC and PFEC in combination with other schemes.</i> 	17%
<p><i>legally binding</i>, where all electricity and heat producers with installed capacity above a certain size – say 25 kW – would be required to procure only sustainable biomass - this option would exclude small-scale purchasers of biomass (e.g. pellets used in biomass boilers in the household)</p> <p><u>Arguments FOR:</u></p> <ul style="list-style-type: none"> • <i>Small scale biomass users should be exempted as this would be a large administrative burden. The legal obligation on the smaller users could be through a legal obligation on biomass producers that only supply this market with sustainable biomass.</i> • <i>The threshold should be 50 kW, but large-scale producers could be rewarded for providing sustainable biomass to the domestic sector.</i> <p><u>Arguments AGAINST:</u></p> <ul style="list-style-type: none"> • <i>This option would enable the use of significant amounts of biomass for which the sustainability characteristics are unknown.</i> • <i>Small-scale electricity producers should be covered by a scheme by a simplified method for proving sustainability.</i> 	10%

Question A3: Biomass is defined as/ considered to be: the biodegradable fraction of products, waste and residues from biological origin, from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.

Which sort of biomass for the production of heating and electricity should be considered by a biomass sustainability scheme?

Many stakeholders agreed with the list of biomass feedstocks in the consultation document. The number of responses asking for different types of biomass to be covered by the scheme are depicted in Figure 2 below.

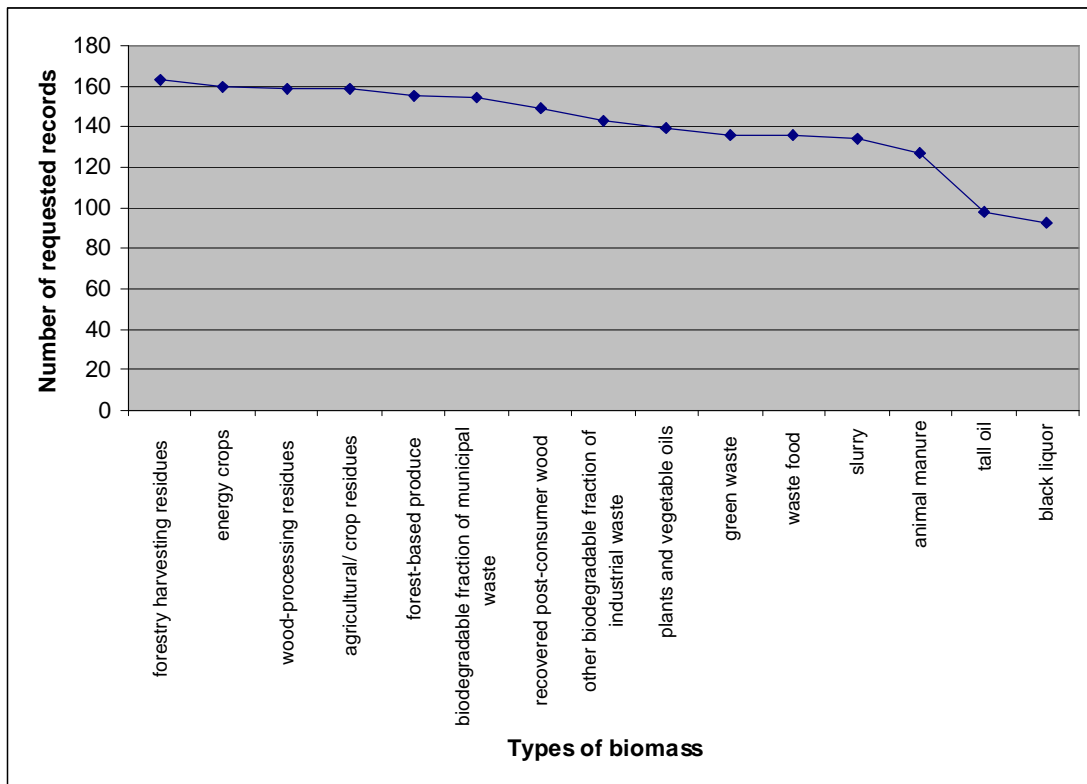


Figure 1: Types of biomass considered by a sustainability scheme

98% of respondents considered that solid biomass should be covered, whereas it can be seen that less than half of the respondents considered tall oil (45,9%) and black liquor (43,4%) to be included in a scheme, because there is a lack of clarity on their categorisation as a biomass feedstock or waste.

In fact, many respondents commented on the importance of distinguishing between wastes, by-products and cultivated biomass, as residual and waste streams should not be obliged to meet sustainability criteria or should not be covered by the scheme since the safe use of waste is already controlled by existing environmental legislation.

Question A4: In your opinion, are there any types of biomass used for electricity, heating and cooling which should never be counted towards renewable energy targets for reasons of sustainability?

No clear consensus has been reached on this question. However, more than half of the respondents (56%) believe that all types should count towards the targets; otherwise there might be a risk of having an arbitrary barrier to trade. Most respondents stressed that only sustainable biomass should be counted. Others commented that the choice of feedstock should be decided on the basis of market price, rather than subject to regulatory exclusion. It was also noted that any exclusions should be sufficiently flexible to take into account new types of biomass that come to the market, particularly as technology and markets are likely to develop quickly.

On waste, there was a divergence of opinion. Some argued that only wastes and residues should count towards targets, whereas others said that waste should not count, since it would create windfall profits for waste management companies.

Examples of types of biomass which some respondents felt should be excluded from counting towards renewable energy targets:

- *Protein biomass should enter animal feed markets instead of being incentivised for power generation.*
- *Very humid forestry or agricultural residues should not count towards the targets, as they should instead be used for soil improvement purposes.*
- *Imported biomass from non-EU countries should never be counted especially from tropical countries where many productions of biomass create large environmental and social problems.*

PART B: Greenhouse gas methodology

To measure compliance, the design of the scheme has to ensure that the sustainability criteria can be applied to individual consignments of biomass. For instance, requirements related to minimum greenhouse gas emissions savings can be checked from an individual consignment of biomass, by determining the origin of the biomass and any greenhouse gas emissions incurred in its cultivation, production or transport (life-cycle analysis). To assess life-cycle emissions, we need techniques which can efficiently be applied to individual consignments of biomass.

Question B1: The RES Directive proposes a required minimum greenhouse gas (GHG) savings for transport fuels (biofuels) of 35%. The methodology for calculating GHG savings is set out in Annex VII of the RES Directive.

The European Commission is working to establish data to calculate life-cycle GHG emission figures for all types of biomass used for electricity and heating. The following types of biomass are being analysed: processed wood fuel (pellets, wood briquettes, wood chips, sawdust), black liquor, fuel wood, timber and forest residues, i.e. stems, tops, branches, leaves, stumps and coarse roots etc.

The final methodology chosen to calculate greenhouse gas savings will allow for setting a specific cut-off figure (such as 35% for biofuels). *Assuming that the methodology is the same for all types of biomass, in your opinion, the level of ambition for minimum greenhouse gas savings of biomass for heating and electricity purposes should be the same as for biofuels for transport, should be higher than for biofuels for transport, should be lower than for biofuels for transport or should not have requirements for minimum greenhouse gas savings?*

Figure 3 shows the preferences of respondents on the minimum GHG savings to be adopted for bio-energy. The majority (58%) were in favour of a minimum GHG savings of 35%, equivalent to the cut-off figure agreed in the Renewable Energy Directive for biofuels and bioliquids.

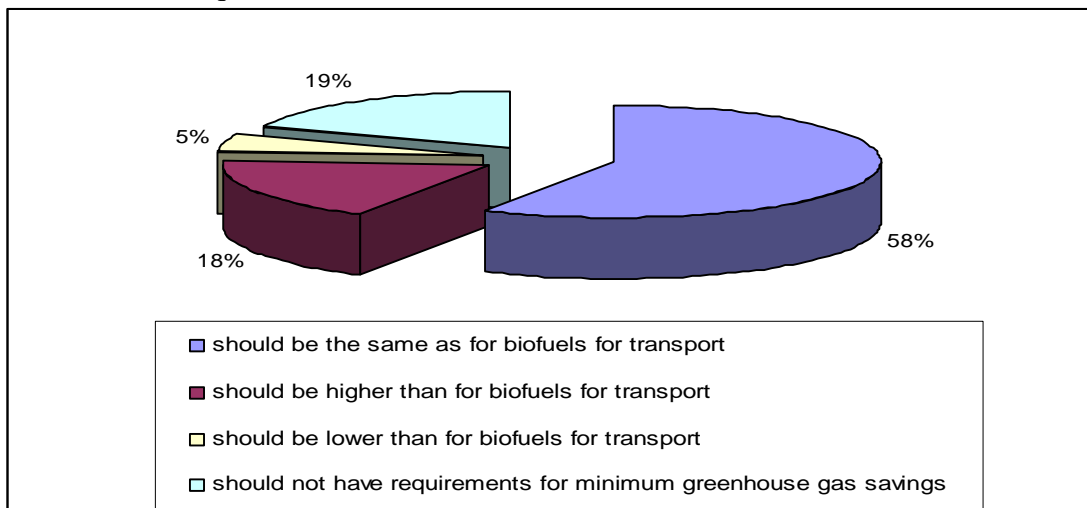


Figure 2: GHG savings cut-off figure for biomass

Those that argued for an equivalent cut-off figure for biofuels and biomass in general wanted to ensure a level playing field between different end-uses of biomass. Those that argued for a higher cut-off said that as the efficiency of biomass for heating and electricity is higher than for transport purposes, a 35% emission saving target would lack ambition and would not encourage innovation. Some thought that a GHG saving requirement is not appropriate because the use of biomass as opposed to fossil fuels is always beneficial in terms of GHG savings and because there are already specific energy efficiency rules relating to some technologies, including combined heat and power plants.

Question B2:

GHG methodology for biofuels allocates zero emissions to cultivation or collection of certain biofuel feedstocks. Annex VII, point 16, third paragraph, states that "*wastes, agricultural crop residues, including straw, bagasse, husks, cobs and nut shells, and residues from processing chains, other than biofuel processing chains, with no potential food or feed use shall be considered to have zero life cycle greenhouse gas emissions up to the process of collection of these materials*".

Which bio-wastes and residues should (in a greenhouse gas methodology) be considered to have zero greenhouse gas emissions at the point of collection?

Wastes and residues	Number of replies	Percentage
Bio-waste (green waste)	142	70%
biodegradable fraction of municipal waste	138	68%
forestry harvesting residues (stems, tops, bark, branches, stumps, leaves and coarse roots)	136	67%
animal manure	130	64%
other biodegradable fraction of industrial waste	129	64%
agricultural/ crop residues (cereal straws, bagasse, husks, cobs, nut shells, grains)	127	63%
waste food	127	63%
slurry	126	62%
recovered post-consumer wood	123	61%
wood-processing residues (sawdust, shavings, woodchips, wood briquettes and pellets)	123	61%
forest-based produce such as fuel wood	97	48%
black liquor	59	39%
Other types added by respondents:		
animal by-products (according to reg. 1774/2002)	24	
biodegradable fraction of commercial waste	8	
biodegradable fraction of food industry waste	3	
woody biomass from agricultural plantations, vineyards, tree orchards, farm trees, agrosilvopastoral activities, etc.	3	
wastewater sludge	3	
algae	2	
landfill gas of all origins	1	
industrial by-products such as glycerin/soapstock	1	
energy crops, using total plant without roots	1	
used vegetable oil	1	
biodegradable fraction of waste from pharmacy and retail	1	
turpentine and methanol from the kraft pulp process	1	
residues deriving from conservation measures in protected areas	1	

Table 2: Bio-waste and residues considered to have zero GHG emissions at the point of collection

Respondents referred to the Kyoto protocol which categorises all agricultural products, crop residues and any kind of wood-based energy coming from sustainable forest management as carbon neutral over the whole production chain. Thus, they should have zero GHG emissions. Respondents also stated that the above types of biomass have a relatively low value or negative value compared with the principal products with which they are associated and therefore should be considered to have zero GHG emissions.

Some respondents disagreed to considering all of the above as having zero GHG emissions, because such an approach might disincentivise carbon-efficient forestry practices. Others thought that only waste which can naturally degrade within a period of one year should be considered as having zero emissions, because biomass can store CO₂ long-term and long-term storage should be rewarded.

Question B3:

The RES Directive also defines how to allocate greenhouse gas emissions to co-products, which are produced in processes and systems with multiple outputs (e.g. refineries, cogeneration of electricity and heat, production of rape meal as a co-product with biodiesel).

The allocation of greenhouse gas emissions in the biofuels sustainability scheme is done by allocation based on 'energy' values of co-products.

It is important to assess whether this approach is also appropriate for biomass in general. ***Please indicate what you consider to be co-products of electricity and heating production using biomass and if there are any co-products produced during any part of the production chain (cultivation, processing and fuel in use) which cannot be accounted for in terms of 'energy-allocation'?***

On this question, many respondents provided comments on the allocation method, but did not always provide examples of co-products of heating and electricity. 93 respondents did not reply to this question at all.

Most respondents agreed that the 'energy allocation' approach was appropriate in most cases, but pointed to some instances where it would be difficult to apply energy allocation to waste streams because conversion processes of waste streams are often less efficient than electricity generation from fossil fuels. Any GHG methodology should specify how to deal with waste treatment specifically.

A "substitution method", i.e. based on an analysis of what the products in question displace, based on Global Warming Potential (GWP) or best available technology (BAT) were suggested by some respondents. They said that where the substitution method cannot be applied (e.g. where the product that would be substituted is also a co-product), allocation could be based on the market/ economic value. In this way, where biomass is grown as a high value non-energy product, the major share of emissions will go to this product, even if the product comprises a small fraction of the total biomass produce.

Those that favoured 'economic allocation' argued also that energy allocation cannot be applied to those co-products that do not have an energy value, but nevertheless have a high economic value, e.g. ash, fertilisers.

Question B4:

The sustainability criteria also consider land-use issues.

Articles 15(3) and 15(4) of the proposed RES Directive define certain categories of land that cannot be used for the production of biofuels and other bioliquids, to protect biodiversity and to avoid conversion of high carbon stock land for biofuel feedstock production, as follows:

Art 15 (3):

Biofuels shall not be made from raw material obtained from land with high biodiversity values:

- a) forest undisturbed by significant human activity, that is to say, forest where there has been no known significant human intervention or where the last significant human intervention was sufficiently long ago to have allowed the natural species composition and processes to have become re-established;
- b) areas designated for nature protection purposes, unless evidence is provided that the production of that raw material did not interfere with those purposes;
- c) highly biodiverse grassland, that is to say grassland that is species-rich, not fertilised and not degraded.

Art 15 (4):

Biofuels should not count towards renewable energy targets or benefit from any support if the use of biofuels results in major reduction in carbon stocks through land use change, that is

- a) conversion of wetlands, that is to say land that is covered with or saturated by water permanently or for a significant part of the year, including pristine peatland
- b) conversion of continuously forested areas, that is to say land spanning more than 1 hectare with trees higher than 5 metres and a canopy cover of more than 30%, or trees able to reach these thresholds *in situ*;

A possible approach would be to argue that such land requirements should be identical, regardless of the types of biomass under consideration and that they should therefore also be applied to biomass. Please indicate whether you would share this approach and if not why not.

The majority of respondents (64%) are in favour of applying the biofuels approach also to biomass because of consistency and in order to ensure that the same minimum land use standards apply to all biomass. 36% of the respondents were against extending the biofuels criteria to biomass in general and consider that the MCPFE process for defining sustainability criteria for forest management are sufficient. They also argued that additional land-use criteria would be burdensome and discourage biomass production.

Many respondents, including those that disagreed with the Commission's proposed sustainability criteria for biofuels, deemed it important that the sustainable criteria for biofuels and biomass are applicable regardless of the end-use. The following concerns were expressed with extending the above to biomass:

Article	Reasons and Proposals
15(3)b	Does not recognise potential environmental benefits from certain biomass recovery procedures (e.g. thinning in unmanaged woodlands); in order to preserve areas designated for nature protection purposes they need to be used to a limited extent
15(3)c	A general exclusion of some areas for further human use is not appropriate. These biodiverse no-go areas should be well motivated and geographically specified, with protection and maintenance schemes under state responsibility.
15(4)	Definitions of land-use change and forest do not correspond to actual inventories and releases of carbon under Nordic conditions.
15(4)b	Definition of forest does not match the definitions used by all countries for their reports under UNFCCC. Where biomass is imported, the forest definition applied should be that relevant to the country where the biomass is produced.
15(4)b	Avoiding land-use change on 'continuously forested areas' does not fit with the idea of biomass recovery from the forest sector and would rule out the use of most UK and possibly many Scandinavian and European plantations and forests

Table 3: Comments on extending biodiversity and land-use criteria

Question B5:

The greenhouse gas methodology for calculating emission savings when using biofuels and bioliquids also takes into account land use issues, by penalising conversion of high-carbon stock land to lower carbon stock land. The penalties are based on data for carbon stock of certain land used for biofuel feedstock provisions on the basis of values provided by the International Panel on Climate Change (IPCC) as indicated below:

Land use	carbon stock (tons of carbon per hectare)
oil palm plantation	189
permanent grassland, that is to say, rangelands and pasture land which have been under grassland vegetation and pasture use for at least 5 years and are not forested	181
lightly forested area (forest that is not continuously forested area)	181
arable (including grassland not considered as permanent; plantation of tree borne oil seeds; land that has been set aside in accordance with Article 2, paragraph 1 of Commission Regulation (EC) 796/20044 and land that was tropical forest, was cleared before January 2008, and had the status of abandoned land in January 2008)	82
desert and semidesert	44

Table 4: Carbon stock of certain land use, IPCC

The wider use of biomass requires consideration of a broader range of feedstocks, including residues and bio-wastes. With IPCC data being valid mainly for land used by annual crops and forests, land used by feedstocks such as perennial grasses and short-rotation coppice may need to be added to the standard data list.

Please state which emission factors and calculation methods could be developed for perennial grasses and short rotation-coppice (SRC) that are not covered by the above table.

A few stakeholders explicitly commented on the need to develop emission factors for short-rotation coppice and perennial grasses. Some stated that short rotation forest emissions are close to those of forests, and emissions of perennial grasses are between forests and arable land. Concrete emission factors were not proposed, but some proposed calculation methods:

- *The emission factor should be the bounded mass of carbon per hectare (ha) before and after the change in land use since certain crops cannot be the indicator.*
- *A single value cannot reflect the real impact of land use change for land use types spanning across different climatic zone/ growth zone or with diverse range of soils*
- *The roots in the soil as well as bio-char, which could be added to the soil to fix the carbon and improve photosynthesis, should be the main criteria.*
- *The mineral balance calculation methods used in the European fertiliser directives should be used.*
- *The situation of crops and grasslands from organic agriculture should be distinguished because emissions savings of these materials are higher.*
- *Carbon stock values should only be devised for permanent crops (not perennial crops), as any potential savings from optimising the cropping system would not be taken into account in such carbon values.*
- *The time over which the emission is discounted and the allocation between other reasons of land clearing as e.g. wood production should be taken into consideration.*
- *long-term studies on environmental risks of biomass production for food and non-food production need to be carried out taking into account the carbon sink function of the soil, the efficiency of nutrients and water, and the emission of other gases (isoprene, monoterpenes) as well as other climate related aspects of biomass production.*
- *The methodology proposed should take into account the potential CO₂ savings from optimising the cropping system (e.g. soil enrichment through crop rotation).*
- *It is important that carbon stock change due to land use change is calculated from the average carbon stock, across the rotation or crop cycle, of the reference land use and bio-energy system.*
- *Indirect land use change should be also taken into account in the life-cycle analysis and in GHG emissions calculations.*

PART C: End-use efficiency of biomass

Question C1:

The greenhouse gas methodology developed for biofuels does not take into account the end-use of the energy, because it was developed for road transport, where most vehicles have similar end-use efficiencies.

However biomass can be processed at very different efficiency levels in different applications such as very low efficiency burning in small open fires and very high efficiency burning in some large co-generation plants, where the useful heat is delivered through district heating.

Do you think the end use efficiency of biomass in electricity, heating and cooling should be accounted for in a sustainability scheme and if so, how?

Role of biomass end use efficiency in a sustainability scheme	Number of replies	Percentage
End-use efficiency should be included in the greenhouse gas calculation methodology	98	38%
A bonus should be granted for efficient uses of biomass in national support schemes	78	30%
End-use efficiency should not be part of the sustainability scheme	32	12%
Penalties for inefficient uses of biomass, such as not counting towards renewable energy targets	31	12%
Inefficient uses of biomass should be banned	18	7%

Table 5: Role of biomass end-use efficiency in a sustainability scheme

Those that were against including energy efficiency considerations pointed to the following issues:

- *End-use efficiency should be treated separately because the objective of the scheme is to ensure that biomass comes from sustainable sources and not about how it is used;*
- *Concern that coupling biomass use with an efficiency scheme might discourage biomass development;*
- *Pointed to the difficulty of determining and assessing the efficiency of different technologies as conversion efficiencies differ significantly;*
- *Energy efficiency legislation is the correct tool, together with market forces which dictate the most desirable biomass conversion technologies;*
- *Small scale producers should be exempted as they find it more difficult to meet efficiency requirements.*

Question C2:

The Commission proposed in Article 12(5) of the RES Directive that Member States should promote biomass conversion technologies that achieve a conversion efficiency of at least 85% for residential and commercial applications and at least 70% for industrial applications.¹

Do you agree with these efficiency thresholds?

39 respondents explicitly expressed their approval of the above mentioned thresholds against 52 who were against and 95 who did not comment on the thresholds.

Stakeholders pointed to the following considerations:

- *The thresholds are too high for electricity generation, and any biomass generating plant without CHP would be ruled out.*
- *Thresholds should not jeopardise the development of an industry which reduces net GHG emissions and should not lead to unanticipated distortions depending on the available technology.*
- *There should be one single threshold in order to create a level playing field.*
- *The thresholds should be based on the efficiency of BATNAs (best available technologies now available).*
- *The thresholds cannot be achieved today, phasing them in might help promote renewable energies and save investment costs.*
- *Thresholds should remain indicative and be used for promotion purposes.*

PART D: Sustainable forest management

Sustainable forest management is defined by the Ministerial Conference on the Protection of Forests in Europe (MCPFE) as: *The stewardship and use of forests and forest lands in a way and at a rate that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national and global levels, and that does not cause damage to other ecosystems.*

It could be justified not to require sustainable forest management criteria simply to be applied to energy uses of biomass, because much of the biomass used for energy comes as by-product from other harvesting or industrial processes. Due to such integrated production it may also be questionable that sustainable forestry criteria can be developed for energy uses of wood only.

Question D1:

Taking the above into account, in your opinion, should sustainable forest management criteria for forest biomass for energy purposes be developed?

67% of respondents were in favour of sustainable forest management criteria for forest biomass for energy purposes arguing that the growth of the bio-energy sector and a possible rapid increase in demand for biomass due to high fossil price volatility are likely to increase the pressure on forest resources both inside and outside the EU. Whereas energy uses on forestry biomass currently rely strongly on by-products, it cannot be assumed that sustainable use of by-products of forestry harvesting will remain sufficient to satisfy growing demand.

Reasons stakeholders gave for developing SFM criteria:

- *Current schemes are not suitably covering new practise such as uprooting of tree stumps and collection of forest residues after felling. There should be additional criteria specifying minimum carbon savings.*
- *The implications of stump extraction are not well understood, the nutrient export needs to be balanced, and changing management systems towards more intensive forestry should be documented transparently.*
- *There should be cost and benefits analysis, which would take into account negative impacts of a growth in biomass cultivation (greater removal of brush materials, increase in destumping, etc..) but which would at the same time take into consideration that the extraction of biomass from forestry can deliver benefits for biodiversity by helping to manage uneconomic woodlands and could help facilitate ecological adaptation to climate change.*
- *Existing schemes and criteria might be further developed and supplemented to ensure that they are adapted to modern production of biomass for energy purposes, such as including a GHG or a carbon stock component.*
- *A meta-standard approach should be used, which would recognise pre-existing sustainability standards in the various sectors producing biomass across the EU.*

Suggested elements for SFM criteria:

- *The whole range of forest products and their total economic, social, ecological, and environmental impacts should be considered by sustainability criteria.*
- *Different criteria should apply to different forest types: criteria could be less stringent for plantation biomass than for biomass coming from semi-natural forests or forests with high biodiversity value.*
- *Specific provisions for energy uses would discriminate against energy operators and, thus, create unnecessary obstacles to reaching the RES targets. SFM criteria should apply to all users of the forest..*
- *For those criteria, which are not covered by existing schemes (e.g. GHG savings) some default values should be given according to the type of forest and operations to harvest energy wood.*

Question D2:

If the EU decides to develop sustainable forest management criteria, a common understanding is needed with common criteria.

The European Community is committed to sustainable forest management through several international processes, including the MCPFE, which led to the development of sustainable forest management principles and indicators (to help governments report on sustainable forest management).

The MCPFE principles are insufficiently precise to serve as clear criteria, and as a result, the application of these principles varies from region to region. In contrast, the sustainability scheme for biofuels and other bioliquids includes very precise criteria, which is to prohibit the use of raw material from undisturbed/ primary forests (i.e. highly biodiverse forests), but the biofuel/ bioliquid scheme does not say anything about harvesting from other types of forests.

Today, the most common way to apply the principles of MCPFE is through certification schemes, which today all work on a voluntary basis and include the Programme for the Endorsement of Forest Certification (PEFC), the Forest Stewardship Council (FSC), the American Tree Farm system, Malaysian Timber Certification Council and the Dutch Keurhout and the majority of the forests certified through these schemes are either in Europe or North America.

In view of this, please indicate options for precise and measurable criteria for sustainable forestry which could be applied globally and which would comply with the MCPFE principles.

Many respondents agreed that precise and measurable sustainable forest management criteria, which would comply with the MCPFE principles and which can be applied globally, are needed. However, few concrete proposals were made:

- *Any criteria that could be applied globally can only offer a framework for more precise ones at national and forest management unit level. The EU should therefore concentrate on defining a scheme which would assess the efficiency of the national monitoring and reporting system. The assessment by independent evaluators could focus on the question whether a government has signed up to the MCPFE or any equivalent process, whether commitments have been*

implemented in national legislation and national forest policy and whether there is an efficient law enforcement system in place. National criteria and indicators should then be verified.

- To better address problems with applying MCPFE criteria, instruments should be developed to supplement MCPFE criteria by principles of CBD and UNFF.
- The six principles mentioned above should be divided into more specific indicators in order to assign specific score and weight to each indicator. A final score for each operator could be determined. For instance, each forest should be analysed taking into account the number of trees, the animals and plants living there and the production of oxygen as this would provide a classification. An index for similar forest-types could be developed with a maximum logging rate in relation to the amount of wood per area.
- There should be a clear distinction between sustainability schemes (legally binding national forest laws) and certification procedures (usually driven by private organisations). For certification schemes there is a need for a standardisation, and a global sustainability index which takes account of MCPFE principles and adapted to local conditions.

Question D3:

These six MCPFE criteria presented in Question D2 are currently implemented through market based voluntary certification initiatives. There are other options which can be considered.

Please explain your choice and how your choice could best be applied in practice, paying particular attention to countries where there are no existing schemes for sustainable forest management.

Options	Number of replies	Percent age
<p>To develop harmonised operational common sustainability criteria to be applied to all forests (globally) and to ensure that only biomass which comes from sustainably managed forests should count towards renewable energy targets. This would warrant the development of common sustainability criteria, and proof of compliance could be through certification or through other methods, such as bilateral agreements etc.</p> <p><u>Examples of responses:</u></p> <ul style="list-style-type: none"> - Minimum requirements would provide more flexibility and accelerate the availability of biomass. It should be possible to accommodate them to local circumstances. - Voluntary schemes will not drive development of the sector sufficiently and might be prohibitive to developing countries. 	103	48%
<p>EU could develop minimum requirements for forest certification schemes on the basis of which forest certification schemes would be accredited and the certificate would be the only possible proof of compliance.</p> <p><u>Examples of responses:</u></p> <ul style="list-style-type: none"> - A meta-standard approach was proposed, where standards such as PEFC and FSC would be permitted. Countries which do not currently have SFM could develop their own schemes, which meet the meta-standard, or use existing schemes, which are 	45	21%

<p><i>certified under the meta-standard.</i></p> <p><i>- standards could be developed by adapting the FSC/ PEFC standards to national conditions. The adaptation can be performed by a certifier company as for example SGS, SCS, or Smartwood, which have been accredited by FSC. The advantage is that these are well established market-based systems that are already recognised by the public and is cost-effective.</i></p>		
<p>EU should not take action on sustainable forestry for energy purposes, but instead promote the already existing voluntary schemes globally.</p> <p><u>Examples of responses:</u></p> <p><i>The development of harmonised schemes will get bogged down in negotiations, and might result in problems of inadequate supply of sustainable materials and could hamper the development of the industry and the trade in solid fuels.</i></p>	43	20%
<p>EU should require Member States to develop long-term, e.g. 10 year period, planning tools for sustainable forest management for forest in their own territory (this would exclude any requirements for non-EU forest)</p> <p><u>Examples of responses:</u></p> <p><i>- this would ensure a strategic, rational and ecologically compatible use of forest resources and allow for an active steering of the forestry sector towards a balanced and sustainable path.</i></p> <p><i>- Long-term planning tools are the least likely to penalise small producers. National planning tools would also be able to take account of local considerations.</i></p> <p><i>- Small-scale forest owners do not necessarily have access to forest certification schemes or the cost of certification could be unbearable for them. Any new scheme should be based on existing public (government-based) tools to define and verify legality and sustainability. Forest certification could be used as a supplementary or optional tool to verify the sustainable origin.</i></p>	24	11%

Table 6: Options for the implementation of sustainable forestry criteria

PART E: Verification

It will be necessary to verify compliance of claims about sustainability of biomass. *Please indicate any instruments/ standards or schemes which could be used to verify compliance.*

Three instruments have been discussed to verify compliance with the sustainability criteria: the 'mass balance'⁴, 'book and claim'⁵ and 'track and trace'⁶ approach. The 'mass balance' approach was the preferred instrument for verifying compliance with the sustainability criteria by the respondents as this instrument would offer the security of valid verification without causing an excessive administrative burden.

Some argued that the 'book and claim' approach is the most cost-efficient, but others argued that controls of fraud cannot be guaranteed because of the decoupling of physical commodity flow and accounted certificates. Some thought that the 'track and trace' approach would lead to unnecessary burdens for operators and would prohibit the scaling up of projects. An exact traceability can furthermore not be warranted taking into account transport, common stock, etc.

Verification bodies: Some respondents thought that international certifying bodies should be in charge of guaranteeing a schemes' application, such as the certification for organic produce. A stepwise approach could be implemented through first-party reporting in the beginning, which then within a short transition period could be transformed into third party independent certification/verification.

Some respondents proposed that a third party auditing system should allow for the participation of all interested parties (including local populations and NGOs) and for transparency of standard setting, governance, certification and auditing processes. The audit process would include accreditation of auditors, initial certification of owners/sites for compliance with the standard, and audits to confirm continual standard compliance and the possibility to appeal against auditor's decision.

The FSC, PEFC, the Canadian forest certification system carried out by the Canadian Standards Association (CSA), the Sustainable Agriculture Network/Rainforest Alliance (SAN/RA), the Roundtable for Sustainable Biofuels (RSB), Fair trade Label (FLO) and UTZ were mentioned. The standards introduced by the UFFCC in order to approve CDM/JI projects could also be applied to a European initiated scheme.

Some thought that the guidelines for quality and/or environmental management systems auditing (ISO 19011: 2002) should be used. Others thought that verification of compliance could be done through satellite images and the development of statistical methods related to supply potentials and consumption patterns.

⁴ Under the **mass balance** method, biomass suppliers must be able to show that the consignment of raw material in question was withdrawn from a physical pool into which the raw material whose sustainability characteristics are described in associated documentation had previously been added; and that the withdrawn quantity of raw material with which this documentation is associated does not exceed the added quantity;

⁵ Under the **book and claim** method, biomass suppliers must be able to show that a quantity of raw material equal to the quantity in the consignment in question, and having the sustainability characteristics described in associated documentation, has been produced somewhere in the world; and that this documentation has not been and will not be associated with any other consignment of biomass for the purposes of sustainability verification.

⁶ Under the **track and trace** method, biomass suppliers must be able to show that the consignment of raw material in question is the raw material whose sustainability characteristics are described in associated documentation;