



# SolidStandards

Enhancing the implementation of quality and sustainability standards and certification schemes for solid biofuels (EIE/11/218)



Workshop on voluntary vs. mandatory sustainability criteria for solid biofuels  
07 June 2011, Berlin, Germany



## The SolidStandards project

The SolidStandards project addresses ongoing and recent developments related to solid biofuel quality and sustainability issues, in particular the development of related standards and certification systems. In the SolidStandards project, solid biofuel industry players will be informed and trained in the field of standards and certification and their feedback will be collected and provided to the related standardization committees and policy makers.

The core of the action is the organization of 35 training events for producers, traders and end-users of solid biofuels and actors involved in standardization and certification. Trainings aim at increasing the target group's ability to implement quality and sustainability standardization and certification. The consortium works with 7 selected solid biofuel companies and supports them in implementing European quality standards. The process is documented and shall serve as a guideline for standard implementation. In order to contribute to the discussion on binding sustainability criteria for solid biofuels, existing sustainability schemes will be analysed, reviewed, assessed for compliance with the EC decision and tested in a number of practical case studies. Finally, the project contains several tools for feedback collection from the industry. This feedback is collected, analysed and provided to European and national standardization organizations in Europe.

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## About this document

This document corresponds to **Deliverable 5.3** of the SolidStandards project and contains a report on the sustainability workshop (Voluntary vs. mandatory sustainability criteria for solid biofuels) organised on 7 June 2011 in Berlin, Germany. This document was prepared in **July 2011** by:

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## 1. Program and workshop participation

The workshop “Voluntary vs. mandatory sustainability criteria for solid biomass” was organized by Utrecht University and NEN as part of the SolidStandards project. The workshop was held on Tuesday 7 June, 10:20-13:30, as a parallel event at the 19th European Biomass conference and Exhibition in Salon Koch, International Congress Center, Berlin, Germany.

Chair: Martin Junginger, Copernicus Institute, Utrecht University

- 10:20            The SolidStandards project: A short introduction  
Wolfgang Hiegl (WIP RenewableEnergies)
- 10:25            Sustainability criteria for solid biomass – considerations by the European Commission  
Giulio Volpi (DG ENER, European Commission)
- 10:40            Overview of existing legislation regulating the sustainable production and use of solid biomass for energy in the EU  
Luc Pelkmans (VITO, head of the Biobench consortium)
- 10:55            The need for a harmonized sustainability criteria for solid biomass across Europe – The view of several large European utilities  
Yves Ryckmans (Laborelec/Electrabel)
- 11:10            Standardisation and certification of sustainable biomass - Ongoing developments in CEN and ISO  
Jarno Dakhorst (NEN)
- 11:25            Sustainability of solid biofuels - a practical system is needed to guarantee supply  
Kjell Andersson (Svebio)
- 11:40            How to source and certify sustainable feedstock for the largest wood pellet plant in the world  
Johan Granath (Ekman& Co AB)
- 11:55            Will sustainability criteria for solid biomass (mandatory or voluntary) be strong enough to effectively ensure the environmentally sound production of biomass?  
LászlóMaráz (Forum U&E)
- 12:15 - 13:30 Panel discussion

During the panel discussion, the speakers had the opportunity to react to statements of other speakers. The floor was then opened to participants to join the debate.

In total, about 50 participants joined the workshop. As the workshop was held as part of a (mainly scientific) conference, about 50% of the participants had an academic background. The remainder of the audience consisted of several representatives of the European Commission and the JRC, two industry associations (EUBIA, WPAC), two utilities (Vattenfall, Electrabel), a biomass trader, several consultancies and two representatives of the press (Sonne Wind und Wärme and Argus media).

The minutes and this report were written by G.J. Jonker and H.M. Junginger (Utrecht University), and sent to the panellists for comments. All presentations can be retrieved for free from the website at [www.solidstandards.eu](http://www.solidstandards.eu).

In section 2, the background and aim of the workshop are described. In section 3, a summary of the individual presentations is given, and a synopsis of the panel debate. In section 4, the workshop is summarized and some conclusions are drawn.



## 2. Background and aim of the workshop

The European Commission will report by the end of 2011 whether national schemes have sufficiently and appropriately addressed the sustainability of solid biomass, and whether this has led to trade barriers, and whether introduction of mandatory sustainability criteria for solid biomass is necessary, and (if so), whether the current criteria for liquid biofuels are also adequate and sufficient for solid biomass, or whether these criteria need to be adapted and/or extended.

Preceding this decision by the European Commission, this workshop aimed to bring together the main stakeholders in this discussion. The panel consisted of the European Commission, representatives of solid biomass producers (both within and outside the EU), large scale end-users, a representative from CEN and an environmental NGO. The aim of this workshop was to serve as a platform for industry, EC representatives and scientists to debate the issue of mandatory vs. voluntary sustainability schemes, including current experiences with voluntary certification by the industry. Also preliminary results of the on-going benchmarking of existing legislation, regulating the sustainable production and use of biomass in the EU, was presented.

All stakeholders involved were invited to the workshop to join this debate, such as producers of forestry and agricultural biomass both in the EU and elsewhere, small and large scale users, traders and consumers of solid biomass for energy, other industrial users of solid biomass, national policy makers, NGOs, certifiers etc.

## 3. Summary of the presentations and the panel debate

### 3.1. Martin Junginger – workshop opening

See presentation slides "[00\\_junginger.pdf](#)" of Martin Junginger for more information.

The workshop was opened by Martin Junginger, including some general remarks. Dr. Junginger referred to the website [www.solidstandards.eu](http://www.solidstandards.eu) on which the presentations and workshop summary will be published.

Dr. Martin Junginger held a short survey on forehand to see what the general opinion was of the audience:

"Do we need EU-wide harmonized mandatory sustainability criteria at all?"

*Yes (most participants)/ No (0) / some participants did not raise their hand at all and effectively abstained*

"If a minimum GHG emission reduction threshold was to be introduced, it should be:

*35% (0) / 50% (2) / 60% (7) / 70% (7) / abstained (unknown) against a EU-wide fossil fuel comparator for heat and electricity"*

The participants of the workshop prefer a high GHG saving performance for solid biomass (compared to fossil fuel comparator, currently proposed by the JRC) as part of the sustainability criteria.

"If criteria were to be introduced, the EC is considering a size of 1 MWth / MWe and above for end-users requiring proof of sustainability certification. This size is:"

*Too small (4) / about right (13) / Too high (1) / abstained (unknown)*

No-one from the audience wanted to further elaborate on her/his opinion.

"Should woody biomass directly sourced from forests for bioenergy only come from sustainably-managed forests, i.e. require certification (such as FSC or PEFC)?"

*Yes (15)/ No (4) / abstained (unknown)*

No-one from the audience wanted to further elaborate on her/his opinion.

### 3.2. Wolfgang Hiegl (WIP Renewable Energies) – The SolidStandards project: A short introduction

See the presentation slides "[01\\_hiegl.pdf](#)" for more information.

Wolfgang Hiegl gave a concise presentation on the background, goal, methods and the consortium of the SolidStandards project, which will run from April 2011 to March 2014.

SolidStandards aims at increasing the implementation of standards in the industry and to contribute to the development and improvement of standards and policy frameworks through industry feedback collection. SolidStandards main action is to provide training for industry how to implement and use the new standards. Another action point is to help implementing the standards in companies. Furthermore the SolidStandards consortium would like to support the EC decision making on sustainability for solid biofuels in Europe. Within those actions the feedback from industry on standard development, standard implementation and training is important.

### 3.3. Giulio Volpi (EC) - Sustainability criteria for solid biomass – considerations by the European Commission:

See the presentation slides "[02\\_volpi.pdf](#)" of Giulio Volpi for more information. For more information on renewable energy within the European Commission, see [http://ec.europa.eu/energy/renewables/index\\_en.htm](http://ec.europa.eu/energy/renewables/index_en.htm).

Giulio Volpi gave a broad picture on the background of sustainability policy framework for solid biomass and the development and status of sustainability criteria development within the European Commission. The European Commission is working on an 2050 Energy Roadmap to support a transition to a low carbon energy system in 2050. Energy security, competitiveness as well as sustainability are key objectives of the EU energy policy. As part of the EU climate and energy package, the RED (Renewable Energy Directive, 2009/28/EC) was introduced. This directive focuses on achieving a EU-wide 20% share of renewable energy in 2020 and sets mandatory renewable energy targets for each member states. Furthermore, for renewable energy in transport a specific 10% target and a biofuel sustainability scheme is included in the RED.

Under the RED all EU member states compiled a National Renewable Energy Action Plan (NREAP). Combining the estimates of the NREAP's it shows that by 2020 20.6% of all final energy consumption will be renewable. Half of the member states plan to exceed their national RES target, 2 members will partly rely on imports using the flexible mechanisms established by RED. The total renewable energy consumption will more than double between 2005 (99 Mtoe) and 2020 (245 Mtoe). To achieve this, renewables will represent more than 1/3 of electricity consumption in 2020, a fifth of heating and cooling and over 10% in transports. The development of biomass consumption in the EU (according to the 27 NREAP's), expressed in final energy consumption, is shown in a graph; it shows a smooth (almost linear) development to 2020. Also the biomass sources to be used in the EU (based on the information in the NREAP's) are presented; biomass from forestry was and will be the source, although its relative share is decreasing. Biomass from agricultural and fishery and biomass from waste are projected to grow significantly.

The EU biofuels sustainability criteria described in the RED exclude biofuel production on land with high carbon stocks and land with high biodiversity values. Furthermore a GHG saving of at least 35% (50-60% from 2017/18), compared to fossil fuels is needed. Those criteria have to be met to enable counting towards the renewable energy targets and obligations and to be eligible for financial support. The European commission is in dialogue with about 30 initiatives for the recognition of voluntary certification schemes. All schemes recognized by the Commission are valid in all EU member states.

Guaranteeing the sustainability of solid and gaseous biomass production and use is currently left to the member states. By the end of 2011, the EC will review this system. Ongoing work for this review includes to execution of external studies on benchmarking biomass sustainability criteria for energy purposes, impacts of national – EU approach on biomass costs and availability. Also public consultation is part of this review; this consultation ended this spring, around 160 contributions were received. Key messages from this public consultation are:

- Biomass import will increase and raise additional sustainability issues
- The national approach (which is executed so far) can be problematic for an internal market perspective.
- A general message is the need of consistency / coherence across sectors using biomass (eg transport heat and power). Some stakeholders called for sustainable forest management requirements;

- Stakeholders have diverging views concerning the scope of possible EU sustainability criteria:
  - Criteria should apply for all energy producers, regardless of their size (mainly pointed out by NGO's and biofuel industry)
  - Small and large scale bioenergy producers would like to see an exemption for small bioenergy producers (1 MW)
  - Binding criteria only for large energy producers above 20 MW capacity

### 3.4. Luc Pelkmans (VITO) - Overview of existing legislation regulating the sustainable production and use of solid biomass for energy in the EU

See the presentation slides "[03\\_pelkmans.pdf](#)".

VITO is part of a consortium currently carrying out a study for DG Energy of the European Commission. The overall goal of the study is "To compare and contrast national rules and regulation related to biomass sustainability and to determine the impact of these rules on biomass availability and costs, with a view to determining whether there are impacts on biomass trade within the EU and to and from the EU". This study is performed by a consortium of partners: VITO, University Utrecht, Vienna University of Technology, Öko-Institut, Imperial College London, Regional Environmental Center, ETA Florence. Within this project:

- An inventory will be made on all national, regional and local rules and regulations related to the sustainable use of solid and gaseous biomass for electricity production and heating and cooling.
- Compare national rules and regulations with each other and EU legislations.
- Modeling exercise to evaluate the impact of the rules and legislations on the sustainability requirements for biomass.

Within the inventory the legislations of 27 EU member states are screened focusing on solid and gaseous biomass for stationary energy. Only rules and legislation additional and / or stricter than EU requirements are taken into account; not the "normal" implementation of EU rules. All rules are classified according to the following categories: rules affecting biomass production, rules or legislation related to its end use (i.e. efficiency), legislation regarding an integrated assessment of the whole biomass supply chain and rules focusing on local aspects of biomass consumption. In the presentation of Luc Pelkmans a number of examples per category are listed:

1. Rules on biomass production
  - a. Link to sustainable forestry management
    - Belgium: minimum requirements for wood pellets (draft)
    - Hungary: Feed-in tariff
    - Slovenia: CHP support & renewable electricity support
    - France: Fonds "Chaleur renouvelable"
    - Finland: Act on the Financing of Sustainable Forestry
  - b. Agriculture / waste legislation
    - Ireland & UK: energy crops schemes
    - Netherlands: decree on the use of manure
    - Netherlands: National Waste Management Plan

## 2. End use

Financial incentives under condition of minimum efficiency requirements and / or emission requirements  
Technical requirements of installations

## 3. Biomass lifecycle – integrated assessment

Belgium: Green certificate system in Wallonia & Brussels

Belgium: Green power certificate system in Flanders

UK: Renewables Obligation (RO), 2011 update in preparation

UK: Renewable Heat Incentive (RHI) 2011

Related, but not linked to legislation, are the norms and voluntary systems (company developments)

## 4. Other: local aspects

### a. Promotion of local biomass

Focus on technologies which use typically local biomass

Favouring local biomass in subsidies or incentives

### b. Protection of other economic sectors

Belgium: Flemish Green Power Certificates

Hungary: Feed-in Tariff

Poland: draft decree on renewable electricity

Further work for this project is the comparison of national rules with each other and with EU recommendation: COM(2010)11 and an inventory of relevant voluntary systems. Furthermore the evaluation of the impact of those rules and legislations on the biomass supply in Europe will also be performed.



### 3.5. Yves Ryckmans (Laborelec) - Solid biomass specifications for large scale power plants

See the presentation slides "[04\\_ryckmans.pdf](#)".

Yves Ryckmans informed the participants of the workshops about:

- Initiative of Wood Pellets Buyers (IWPB)
- Insights in the sustainability discussion within Laborelec and the EUBIONET sustainability workgroup

The participants of the IWPB are 8 big utilities in Europe (all operating large scale biomass plants), inspection companies, technical advice and support companies and journalists for public reports of the meetings. The general objective of this initiative is to facilitate trade between utilities through uniform contracting. This initiative set up three wood pellet specifications. The discussion with suppliers of industrial wood pellets is now open. See [http://www.laborelec.com/content/EN/Renewables-and-biomass\\_p83](http://www.laborelec.com/content/EN/Renewables-and-biomass_p83) for minutes and documents.

The IWPB sustainability approach focuses on wood (not excluding agricultural biomass) thereby using voluntary certification to verify (by independent body) 8 sustainability criteria, as shown in Figure 1.

INITIATIVE WOOD PELLETS BUYERS - SUSTAINABILITY PRINCIPLES	
WILL	<p>Principle 1: GHG BALANCE</p> <p>The greenhouse gas balance of the production chain and application of the biomass shows significant savings with respect to reference fossil fuels</p>
WILL	<p>Principle 2: CARBON STOCK</p> <p>Primary biomass production does not take place at the expense of significant carbon reservoirs in vegetation and in the soil.</p>
WILL	<p>Principle 3: BIODIVERSITY</p> <p>Primary biomass product does not take place at the expense of protected or vulnerable biodiversity.</p>
AIM TO	<p>Principle 4: SOIL</p> <p>With the primary or secondary production of biomass the soil quality should be maintained or improved.</p>
AIM TO	<p>Principle 5: WATER</p> <p>With the production and processing of biomass, ground and surface water should not be exhausted and the water quality should be maintained or improved</p>
AIM TO	<p>Principle 6: AIR</p> <p>With the production and processing of biomass the air quality should be maintained or improved</p>
AIM TO	<p>Principle 7: SOCIAL</p> <p>Biomass product for energy should not endanger food supply or communities where the use of biomass is essential for subsistence</p>
AIM TO	<p>Principle 8: LOCAL PROSPERITY</p> <p>Biomass product for energy should contribute to local prosperity and to the welfare of the employees and the local population</p>

**Figure 1: Overview of sustainability principles as suggested by the wood pellets buyers initiatives. Figure taken from presentation of Yves Ryckmans**

Yves Ryckmans stressed that the verification is not as easy as saying “we need FSC or PEFC”. Especially in South-America and Africa, we need better certification schemes to avoid for example carbon stock changes.

From the agenda of the IWPB, it is clear that the work is ongoing with a scheduled approval of the advisory board and transparent communication by the end of 2011. Currently, the proposed technical specifications of the three types of wood pellets and the draft sustainability check-list are open for reactions.

As final point, Yves Ryckmans stressed that (different) national legislation can have a high negative impact on the consumption of biomass for electricity production. Following the current proposed Polish legislation, it could be possible that in the future, coal will be used in an installation designed for electricity production with biomass, if only forest residues may be used in such installations, as forest residues cannot meet the technical specifications of boiler manufacturers.



**Yves Ryckmans, Laborelec.**

### 3.6. Jarno Dakhorst (NEN Energy Resources) - Standardisation and certification of sustainable biomass, Ongoing developments in CEN and ISO.

See the presentation slides "[05\\_dakhorst.pdf](#)".

Jarno Dakhorst started with a small introduction on standards and standardization. Standards are documents with agreements on products, services and systems and are designed for voluntary use. The standards used can contribute to (inter)national strength of competition (overcoming trade barriers), innovation, health, safety, environment and (company) image. Standards are in accordance with the WTO. For both self-regulation and regulations, standards are an important tool. Standardization is a transparent, open process whereby the agreements are based on consensus. On national, regional and international level standardization can take place.

Within the EU there are a number of standard and standardization developments: CEN/TC 383 "Sustainability produced biomass for energy applications" was created in April 2008. Under the CEN/TC 383 the EN 16214 series will be developed which include principles, criteria, indicators and verifiers for biofuels and bioliquids. The publication of these standards is expected in course of 2012. Other developments in CEN/TC 383 include: pilot testing of actual parts of prEN 16214, clarification of 'no-go' areas related to land with high carbon stocks and biodiversity values. Furthermore the CEN/TC 383 reports on the applicability of sustainability criteria for biofuels and bioliquids for solid biomass and biogas. Also CEN is looking at the pros and cons of developing standards in relation with standard development within ISO.

International development for standards and standardization includes the ISO/PC 248 "Sustainability criteria for bioenergy" The scope of the ISO/PC 248 are the sustainability criteria for production, supply chain and application of bioenergy. By the ISO/PC 248 the ISO standard 13065 "Sustainability criteria for bioenergy" will be developed by using input from 3 working groups. The objectives of ISO 13065 are:

- Comply with national and/or regional legislation
- Respect the Universal Declaration of Human Rights
- Use natural resources in a rational and sustainable way
- Bioenergy from production and up to use should be sustainable in relation to biological diversity
- Reduce GHG emission in relation to the fossil energy source it substitutes
- Promote economic and social development where the production up to use of bioenergy occurs
- Bioenergy production should be economically and financially viable in the long term

The publication is planned in April 2014.

### 3.7. Johan Granath (Ekman & Co) - How to source and certify sustainable feedstock for the largest wood pellet plant in the world.

See the presentation slides "[06\\_granath.pdf](#)".

Johan Granath first introduced Ekman & Co AB and showed all 40 locations worldwide. Ekman & Co is exclusive sales agent for the 900 000 ton annual produced wood pellets in the Vyborgskaya plant. The integration with a pulp & paper mill provides economies of scale. The focus for the wood pellet export is currently on the industrial market (although it is possible to target also the small-scale consumer market). The pellet plant is located in Russia due to the large amounts of forest in the surrounding area. Russia has the world's largest forests (17% of world's wood resources are in Russia). North-western Russia has 17% of Russia's forests. The goal of the Vyborgskaya plant is to use roundwood and residues of forest operations, which are usually left at road-sides at this moment.

Fiber sourcing for the Vyborgskaya plant is FSC certified or is in the process of becoming FSC certified. Vyborgskaya completed an FSC pre scope audit during May 2011 with the intention of receiving full FSC certification, which typically takes 3 years. To reduce the carbon footprint and due to the location of the pellet plant, half of all raw material will be transported by river vessels. For harvesting and shipment, Vyborgskaya made large investments in equipment and facilities.

Johan Granath believes sustainability criteria are needed, but sustainability is a global issue and lessons can be learned from the liquid biofuels industry. He believes that harmonized sustainability criteria would diminish uncertainties and would reassure consumers and producers alike and help avoid the mistrust the liquid biofuels market suffers from. Furthermore the existing forestry schemes should form the cornerstone of any solid biomass sustainability scheme. Small private forests should not have the same administrative burden as large forest owners or state owned forests. Also, EU sustainability criteria audits could not be abused to obtain sensitive company data.



Johan Granath, Ekman

### 3.8. Kjell Andersson (SVEBIO) - Sustainability of solid biofuels – a practical system is needed to guarantee supply

See presentation slides "[07\\_andersson.pdf](#)" for more information.

Kjell Andersson provided insights in the Swedish situation on bioenergy and the position paper published by SVEBIO. Mr. Andersson first showed that by using bioenergy the GHG emissions can be reduced in combination with GDP growth as demonstrated by Sweden. In 2010, 32% of final energy use in Sweden was covered by bioenergy. In Sweden, bioenergy use tripled roughly between 1970 and 2009. Main contributors are the use of black liquor and district heating with bioenergy. Liquid biofuels only started to appear in the graph in the last years. Liquid biofuels are supported by a (according to Kjell Andersson) complicated system. The increasing consumption of bioenergy is mainly due to a CO<sub>2</sub> tax, implemented since 1991. Mainly the district heating is increased since 1991.

The negative effects of binding sustainability criteria for solid biofuels are:

- Administrative burden and added cost
- Disadvantage for small actors
- May act as a trade barrier towards countries outside EU
- Threat to supply of biomass to the market
- Harder to reach targets and reduce GHG emissions
- Static land use – less flexibility for land owners

But, also having no or a limited set of criteria has a number of problems:

- Internal trade barriers in EU when some countries introduce criteria in legislation
- Negative debate with negative effects on public acceptance of bioenergy
- Uncertainties concerning imported tropical biomass

Within AEBIOM (European Biomass Association) a position paper on sustainability criteria is worked out. The four main elements of this position paper are:

- Harmonization: EU wide harmonized requirements
- Flexibility: adopting existing schemes, relevant national legislation and sustainable forest management initiatives
- Equal level playing field; apply sustainable criteria to all biomass independently of its final use
- Costs effectiveness and proportionality; avoid excessive administrative burden and costs

AEBIOM proposes a 20 MW fuel capacity threshold for solid biomass and 2.5 MW fuel capacity for gaseous biomass. A threshold in term of quantity of biomass could also be considered for bioenergy producers and for biomass fuel suppliers.

Kjell Andersson concluded his presentation by saying that sustainable criteria should:

- Avoid new bureaucracy and increased costs
- Utilise existing control systems and legislation
- Regulate removal of forest residues on a national basis to adapt to local conditions
- be relevant for European, and boreal, forest conditions, and cannot be based on tropical forest situation

The view of the World Bioenergy Association on sustainable criteria is that:

- Europe should develop criteria in co-operation with developing countries and other regions (Canada, US, Russia, China, etc.)
- World Bioenergy Association has developed a set of global criteria. These can be used today, until the ISO process is finished.

### **3.9. László Maráz (Forum Umwelt & Entwicklung) - Will sustainability criteria for solid biomass (mandatory or voluntary) be strong enough to effectively ensure the environmentally sound production of biomass?**

See presentation slides "[08\\_maraz.pdf](#)" for more information.

László Maráz started his presentation by pointing out that the current approach on sustainability is too narrow. As long as sustainability of consumption levels is not addressed, overall forest management lacks important criteria to protect biodiversity, and material use of wood faces unfair competition (unilateral subsidies for energy use), criteria and certification alone are not enough.

There is a clear need to establish EU-wide harmonized mandatory sustainability criteria with an above 70% GHG reduction compared to a EU wide fossil fuel comparator for heat and electricity. As a large fraction of solid biomass is consumed in small installation (e.g. home heating systems) the threshold of 1MW is too big, according to Mr. Maráz.

Woody biomass directly sourced from forests for bioenergy should only come from sustainably managed forests. However, PEFC and FSC are not always a guarantee for sustainable and ecological forest management, as shown by pictures on several slides. Consumption patterns and consumption levels have to respect what forests can deliver sustainably in the long term.

Forest management needs to be well defined by the adoption of a set of criteria and indicators that ensures that forestry operations are environmentally sound, socially just and contribute to the objectives of the Renewable Energy Directive.

Also so-called "no-go" areas should be defined according to international and national biodiversity strategies. The "no-go" areas defined for agrofuels are not sufficient and include loopholes.

For the GHG performance the absolute GHG performance figures for different pathways is a preferred option instead of trying to compare GHG savings. The FU&E is against any subsidy to support woody biomass use for bioenergy, as is replaced the use of wood for construction material. Using wood for woody products is a preferred option as its overall GHG balance (including combustion after use) is an interesting pathway to reduce GHG emissions.

Sustainable certification cannot address over-consumption and “macro-effects” (e.g. displacement of activities and other indirect effects). In addition, certification creates a burden for good suppliers; increased costs for sustainable products but leaves market open for non-sustainable products.

Bioenergy can only be a sustainable source as it is sustainably consumed.



László Maráz, Forum Umwelt & Entwicklung.

### 3.10. Questions from the audience and discussion

#### Question by Eija Alakangas (VTT):

How did the commission determine the 1 MW capacity threshold? AEBIOM is suggesting a 20 MW threshold, so a 1 MW threshold seems rather small. In Scandinavia, medium sized plants up to 20 MW typically source biomass locally in the direct vicinity of the plant.

#### Answer Giulio Volpi:

The bioenergy market is very diverse across Europe, with significant differences in terms of supply chains and size of bioenergy installations. From a EU viewpoint, any possible legislation should take into account this diversity and find minimum common denominators. The Commission assessed the environmental and economic impacts of the 1 MW threshold. Also the impact on monitoring was taken into account. This recommended level is seen as striking a good balance between environmental effectiveness and additional administrative burden for economic operators. Other issues are the security of investment and public acceptance related to this threshold. The development of EU policies is based on transparent and open process, including regular consultation with stakeholders.

**Question by Hanne Østergard, (Risø-DTU):** In the description of the sustainability criteria, the energy use compared to energy output is not taken into account. As energy scarcity is one of the biggest problems of the future, why was this not taken into account? Can you comment on the energy use during the production of bioenergy?

**Answer Yves Ryckmans**

For the green certificate system used in Belgium only the net energy production is considered; the energy consumption is subtracted from energy production. This is also applied in other systems which will most likely result in different net energy production and GHG emission profiles of bioenergy from different locations. Essential parts of the energy consumption in the overall supply chain are:

- Transportation of raw material or product in the supply chain
- Drying of biomass; with natural gas or biomass

**Answer Johan Granath**

While the overall GHG performance of the Vyborskaya plant can still be improved, still substantial GHG savings can be achieved. The question is whether we compare clean biomass with very clean biomass, or with burning coal and gas? Where do you start? Every decision is a trade-off between different aspects, it will be hard to fight climate change and increase biodiversity at the same time.

**Answer Kjell Andersson**

The key to tackle this issue is implementing a carbon tax on fossil carbon as is the case in Sweden. Such a tax would cause bad technologies (such as drying with natural gas) to be phased out in the long run.

**Answer László Maráz**

A trade-off between climate change and biodiversity is difficult. At the moment we do nothing, or very little: climate change is increasing and biodiversity is going down. We have to take appropriate action. Climate change and biodiversity are both important and the one cannot exist without the other. However, in current energy debates, only the climate change issue is addressed, whereas you never hear about the consequences for biodiversity.

**Question by Louisa Blair (Argus Media)**

Why are people not talking more on the efficiency of plants? Would increasing the efficiency not be a better option for time and money?

**Answer Yves Ryckmans**

This question has been asked in several discussions before, so I would like to answer this. First give some general comments which form the basis to this answer: Our current needs include transportation fuels, energy consumption for heating and electricity needs. Furthermore, as a utility we want to be as efficient as possible. Focusing on energy efficiency alone would result in the phase-out of cars, as their efficiency driving in cities is only 15%, comparable to a steam locomotive. Furthermore, not 100% of the electricity demand can be covered by co-generation of heat and electricity, as CHP plants cannot cover peak demand. Even in Denmark, one of the most successful countries of co-generation, less than 50% of the electricity is coming from cogeneration plants.

Co-generation is already supported, at least in Belgium. Co-generation will also make electricity production more expensive as co-generation will lead to more small scale installation to supply the generated heat to customers, but the capital costs of such small plants are a magnitude higher than of plants just supplying heat.

So it is a difficult debate, not simply black and white. Cogeneration (and use of biomass) must of course be more encouraged than electricity production alone, but there are limits.





You should not exclude biomass for electricity, as you should also not exclude biofuels for transport.

**Answer Giulio Volpi**

I fully agree with Yves Ryckmans, and I would like to point out that the GHG methodology in the RED does also promote more efficient end use conversion of biomass in energy installations. In addition, the EU cogeneration directive promotes CHP deployment. As part of the (follow up of the) energy efficiency action plan, the Commission plans to table legislative proposals to stimulate efficient cogeneration.

**Additional answer Yves Ryckmans:**

Also note that modern new power plants, as the one currently built by Electrabel in Poland, have net electrical efficiencies of 42%. When using co-generation plants for electricity and heat production, the efficiency of electricity production is only 15-20%. That would imply that there should be an infrastructure and market for heat otherwise this option is less efficient compared to power plants with an efficiency of 45%.

**Answer László Maráz**

Efficiency of large-scale plants is normally higher than smaller-scale installation, but this is not practical in small villages (due to the low population density).

**Question by Gordon Murray (WPAC):**

When looking at the sustainability of wood pellets, the GHG emission of transporting wood pellets from e.g. British Columbia (Canada) to Europe taken into account. Why are similar emissions from the mining and transport of the coal supply to Europe not taken into account?

**Answer by Martin Junginger**

These emissions are already accounted for. The fossil fuel emissions for coal supply are taken into account in the life-cycle-analysis of coal supply, so a fair comparison is possible.



**Questions from the audience...**



... and answers from the panel.

As a final survey, Martin Junginger repeats the questions asked at the beginning of the workshop:

None of the audience prefer 35% and 50% GHG emission reductions, 9 participants are in favor 60%, 7 participants favor 70%, and an unknown number abstained.

Regarding the 1 MW threshold, 8 participants now thought the threshold should be higher than 1 MW, 4 thought the size was about right, one participant thought it was too high, and an unknown number abstained.

Finally, regarding mandatory SFM certification, 11 participants are in favor, 2 are not, and an unknown number abstained.

Note that during the workshop, a few participants had left the room, and a few new ones had entered. In any case these votes should only be seen as indicative for the general view of the audience.

## 4. Summary and Conclusion

It is obvious that the discussion on sustainability criteria for solid and gaseous biomass and their possible implementation is ongoing work. While there was general agreement amongst all workshop participants that such criteria are needed, a (large) number of issues remain to be agreed upon:

- Especially the industry representatives (Ryckmans, Andersson, Granath) stressed the need for EU-wide harmonized criteria, as differing national systems would effectively create significant market barriers. In the absence of EU-wide legislation, the large European utilities currently consuming large amounts of industrial pellets are therefore working on a joint voluntary set of criteria, to which they then would adhere to.
- A frequently mentioned point is the threshold size of biomass consumers that need to demonstrate compliance (e.g. by certification). The industry argues that a level of 20 MW<sub>th</sub> for combustion plants should be sufficient, while NGOs rather would like to see that all end-consumers have to use sustainably produced biomass. After the workshop, the majority of participants expressed that the installation size threshold should be increased, whereas before the workshop, most participants thought the 1 MW level was adequate.
- While striving for maximum efficiency when using biomass (or other energy carriers for that matter) is principally a good idea, such a criterion should not be included in specific biomass sustainability criteria, as this would then prevent the use of biomass/biofuels for stand-alone electricity production and biofuels for transport. Other factors (security of supply, economic and market conditions) justify the use for less energy-efficient applications. There is sufficient other policy in place to stimulate co-generation.
- The panelists differed in opinion whether only the cleanest biomass should be allowed, or whether also 'biomass with reasonable' (compared to coal) GHG footprints should be considered sustainable (e.g. pellets of which the feedstock was dried with natural gas, or which was transported very long distances). While the exact height of a GHG threshold was not explicitly debated, most workshop participants expressed a preference for 60% and 70%.
- The use of SFM certificates to ensure that woody biomass was clearly favored by the participants, but as shown by László Maráz, implementation is not a guarantee for sustainable production, and effective verification is needed.
- László Maráz emphasized that the climate issue should not be the only issue considered when formulating sustainability criteria for solid biomass. While he realizes the impact of climate change, and that there is to a certain extent a trade-off, there is also a real chance that increasing use of solid biomass will have a negative effect on (already declining) biodiversity in forests, and this needs to be prevented as well.
- It was agreed by all workshop participants that the sustainability certification systems should not result in administrative burdens and high costs. Multiple presenters proposed the use of existing legislation for sustainability certification and look as lessons learned in the biofuel industry.