

Federal Council for Sustainable Development (FRDO-CFDD)

Opinion on Biomass

- Requested by Mr Paul Magnette, Minister for Climate, Energy, and Sustainable Development, in a letter of 8 April 2008
- Prepared by the ad hoc working group on *Biomass*
- Approved at the general meeting of 4 July 2008
- Drawn up originally in Dutch.

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Setting

- [a] The production and use of biomass have quite a lot of consequences and ground in common with various policy areas. The effects of the use of biomass for energy purposes were delineated at an FRDO-CFDD internal seminar in October 2007, further to which the FRDO-CFDD prepared a background note that provides an overview on the matter. This background note is added to this opinion as Appendix 1.
- [b] On 8 April 2008, the FRDO-CFDD received a request for an opinion from Minister Maignette, in which the council asks for an opinion that comprises the following elements:
- What are the conditions for the sustainable production, distribution and consumption of biofuels and biomass in general, and how can such conditions be guaranteed?
 - What role can Belgium play in an international context to guarantee a sustainable production, distribution and consumption?
- [c] The ad hoc working group, chaired by Professor Luc Lavrysen, met to prepare this opinion on 28 April, 19 May, 13, 20 and 27 June 2008.

European Context

- [d] The policy biomass for energy purposes in the EU is, first of all, in line with the climate objectives that the EU subscribed to under the Kyoto Protocol, but also with the policy for renewable energy and the Fuel Quality Directive.¹
- [e] The European objectives on renewable energy are defined as follows:
- 20% renewable energy in the total EU energy consumption;
 - A minimum target figure of 10% of biofuels of the total volume of transport fuels for each Member State, on condition that the biofuels and bioliquids are produced in a sustainable manner, that a sufficient quantity of second generation biofuels is available, and that the Fuel Quality Directive (FQD) is applied to allow for sufficient mixing;
 - A reduction of 20% to 30% of greenhouse gas emissions;
 - 20% energy savings;
- by 2020.² In January 2008, the European Commission published a proposal for a directive on Renewable Energy Sources (RED) that confirms these objectives.
- [f] The Fuel Quality Directive (FQD) is also being reviewed. Dating from 1998, this directive defines standards for petrol, diesel and gas fuels for vehicles. In the beginning of 2007, the Commission proposed a revision of the directive to:
- Take account of technological developments;
 - Contribute to the fight against climate change by promoting the development of fuels with lower CO₂ emissions
 - Attain the air quality objectives of the *Clean Air Strategy* of 2005.
- [g] The revised FQD wants guarantees that greenhouse gas emissions from fuels for the entire life cycle drop by 1% per year between 2011 and 2020.
- [h] Sustainability criteria for biofuels are to be set in both proposals for directives (RED and FQD). A working group within COREPER is drawing up a proposal for these sustainability criteria.

Belgian context³

¹ Cf. Background Note [12] – [15].

² For an extensive summary of the policy on biomass, cf. Annex B of the Background Note.

³ Cf. Background Note [16] – [20].

- [i] For Belgium, the proposed EU objective is 13% renewable energy by 2020. On top of the 2.2% production of renewable energy, an additional effort of 5.5% (applicable for all EU Member States) and of 5.3% (based on per capita GDP) must be made. As for all EU Member States, a target of 10% in the total volume of transport fuels by 2020 applies, under the stipulated conditions [f].
- [j] In Belgium, the federal government encourages the mixing of biofuels in fossil fuels through tax incentives, while a limited number of producers are attributed production quota for the period between 1 October 2007 and 30 September 2013. In addition, two royal decrees are currently under preparation: a draft royal decree on compostable and biodegradable materials, and a draft royal decree on quality standards for fixed renewable fuels (such as, e.g. wood pellets). These royal decrees are intended to set quality standards for both types, and authorise and regulate alternative use.

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- [k] The focus in the EU is on bioliquids and biofuels. In this opinion, the FRDO-CFDD puts the issue in a broader perspective.
- [l] **The council also supports the consensus results of the stakeholder part of the “Lente van het Leefmilieu”** [Spring of the Environment], where the issue of biomass is also dealt with. In particular, the FRDO-CFDD supports the establishment of a hierarchical structure in the use of biomass, the definition of a national strategy for the development of biomass, an observatory for biomass, an assessment, in the strict sense, of the current policy, and information on the current channels.

Summary of the opinion

- [m] The council supports the consensus results of the stakeholder part of the “Spring of the Environment” on biomass.
- [n] Irrespective of its end use, biomass must be produced in as sustainable a way as possible.
- [o] The council advocates a hierarchical structure in the use of biomass. First of all, the right to healthy and sufficient food for every world citizen must be safeguarded. Secondly, biomass can be used as a raw material. Thirdly, it can also be used for energy purposes.
- [p] Emphasis in the energy policy must first be placed on energy conservation and on improving energy efficiency. For it is only in the context of a coherent and sustainable energy policy that energy applications of biomass can take their place, with due account of a realistic assessment of the possibilities and limitations thereof.
- [q] In addition, the sections in which biomass can be used most efficiently in the energy industry must be considered. The technology with the greatest energy potential and which meets the climate objectives in the most cost-effective manner must be given preference. A local, energy-efficient, decentralised production of heat or the combined heat and power generation in power plants delivers the best performance. The council must point out that this can lead to higher emissions of polluting substances (NO_x, fine dust, ...). The production of biofuels for the transport sector is a less cost-effect technology.
- [r] Investments in research and development for bio-energy technology applications in all sectors (electric power generation, heat generation, industry, household, transport, etc.) are indispensable.
- [s] Whether biofuels can contribute to the reduction of greenhouse gas emissions depends primarily on the type of biomass, on land use and on whether or not indirect emissions are taken into account. A rising demand from the transport sector often also neutralises the reduction of greenhouse gases. The FRDO-CFDD reiterates that work is needed on a general mobility policy geared to *“bringing demand under control, the right price for all means of transport, the development of alternatives to road and air transport (modal shift), technological innovations, better town and country planning, better organisation of the work and better management of the load factor.”*
- [t] The current 10% objective for biofuels is at this time attainable only if the EU will introduce biofuels on a large scale. The council therefore considers that this objective of 10% of biofuels by 2020 must be reviewed from a sustainability perspective. This, however, does not imply that the objective of 20% of energy from renewable sources by 2020 should be abandoned.
- [u] A rising demand for and in the use of biomass offers opportunities throughout the world for the (further) development of the agricultural sector, chiefly for family agriculture. To guarantee a sustainable production and use of biomass, international sustainability criteria are needed in the short term. The criteria used should be the same for the production phase and independent from the end use in order to prevent change effects. In this connection, the council would like to point out that the sustainability criteria and certification for non-food applications of biomass can be different from those for food applications.
- [v] For macro-economic effects that often cannot be measured or approached at plantation or company level, the government must provide a monitoring system that can be used for a regular assessment and, where necessary, adjustment of the objectives, instruments and legislation. A guiding policy by the government is moreover necessary in order to deal with these effects. The government does have various instruments that can help ensure a level-playing field.
- [w] There are already various (international) initiatives and (international) rules, some of which can serve as a basis for giving concrete form to general criteria and making them operational. The

FRDO-CFDD does not address the advisability or credibility of these sustainability criteria or certification systems in this opinion.

- [x] In any event, the criteria must be:
- Ideally applicable worldwide or at European level so as to ensure free access to the market;
 - Applicable generally;
 - Measurable or verifiable and certifiable;
 - Enforceable.

Certain members⁴ take the view that the legal basis for sustainability criteria at EU level must be Article 175 of the EU Treaty. Countries must retain the right to go further than what is established at EU level.

Other members⁵ are of opinion that the legal basis must be Article 95 of the EU Treaty. In concrete terms, the countries must comply with criteria, and may not impose any additional requirements thereon.

- [y] The FRDO-CFDD advocates a percentage threshold for the reduction of greenhouse gas emissions with respect to the average fuel mix in the EU, rather than a volume objective. A sufficiently high greenhouse gas emission threshold is a necessary precondition to offering guarantees that stimuli are given only for the most efficient biomass. There is a need at EU level, and ideally at international level, to have a single methodology for calculating the greenhouse gas emission balance in a transparent and accurate manner (lifecycle analysis), both for the energy biomass and for fossil sources of energy.

- [z] Changed land use is here one of the critical factors that determine whether biofuels have any advantages.

- [aa] The local production and the local use of biomass in Belgium can make a valuable contribution to sustainable development. This does not necessarily lead to more pressure on the environment or to a further intensification of agriculture, or to the destruction of landscapes in Belgium. Nevertheless, a great demand for biomass will create enhanced pressure on farming land and substitution will often occur when local crops are used. It is important to take due account of these often cross-border change effects.

- [bb] In addition to the greenhouse gas balance, the ecological criteria must also guarantee the preservation of biodiversity (including indirect effects) and of the quality of the environment (soil, water and air) and water availability. Furthermore, a clear definition of *degraded land* is also needed.

- [cc] Certain members⁶ find that the current criteria proposed by the European commission do not provide sufficient guarantees on the ecological and social level. They regret that the ecological criteria are too weak (and that no account is taken of indirect changes in land use, the greenhouse gas balance is too weak, etc.), and that the social aspects of production are not broached. These members refer to the numerous international agreements and principles on which social criteria for the sustainable production of biofuels must be based, which are contained in Appendix 4 of this opinion. They take the view that in addition to the ratification of these treaties, the implementation thereof must also be a criterion, and that these criteria must be implemented also at the plantation level. According to them, criteria at the plantation level are not sufficient to guarantee that the negative impact of production on sustainable development will be limited. These members are thinking in particular of the macro-economic effects on food security. They therefore opine that there is an urgent need to develop indicators for food security and food sovereignty.

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Other members⁷ take the view that sustainability criteria for biomass for non-food applications must concentrate on local aspects specific to the exploitation of agriculture or forestry. According to these members, the various standards of international organisations (ILO, UN, etc.) are applicable only to all activities in a country which are not specific to the exploitation agriculture or forestry. Integrating them in criteria that pertain to the environmental sustainability of biomass may, in their view, prove counterproductive. Furthermore, according to these members, the focus on biomass, where social criteria are applied only to biomass and not to other activities, will be seen as a trade disrupting measure. Finally these members find that, irrespective of the criteria for biomass, they must be elaborated in cooperation with countries from the South that are concerned thereby.

[dd] It is important that the WTO recognise the criteria used, so an international agreement has to be reached on such criteria. The UN provisions and the social criteria of the ILO conventions must provide a direction for such an agreement. The current WTO framework must take account of these provisions and criteria. The council refers to previous opinions on this point. Furthermore, a number of exception measures are included under Article XXX of GATT pursuant to the basic principle of the WTO on non-discrimination.

[ee] Criteria constitute a necessary step for guaranteeing the sustainability of biomass, but cannot, in and of themselves, offer any guarantee for real sustainability. Conclusive certification and accreditation are necessary and should optimally be based on existing initiatives. The FRDO-CFDD calls for the harmonisation of existing systems of green electricity certification in Belgium and the EU. The council follows the working group on biomass of the “spring of the Environment” on this to ensure that the attainments of GSC are preserved in Belgium.

[ff] In developing countries, biomass offers possibilities for the development of a sustainable, local agricultural sector, for reducing poverty and for local generation of energy in rather inaccessible areas. There is a need for investment, capacity enhancement, and the transfer of sustainable technologies and support measures – especially for small producers. Projects geared to local energy supply must take priority.

[gg] Belgium must cooperate and plead at international level for:

- A sustainable production of biomass;
- A hierarchical structure in the use of biomass, where the right to sufficient and healthy food takes priority;
- A hierarchical structure in the use of biomass for energy purposes, where the technology that has the greatest energy potential and can achieve the climate objectives in the most cost-effective manner must be given priority;
- An energy and mobility policy that is primarily geared to energy conservation and efficiency;
- A coherent international policy geared to dealing with macro-economic effects;
- The development of a set of sustainability criteria and accompanying certification system, based on existing initiatives;
- The review of the 10% objective of the EU and a percentage objective regarding the reduction of greenhouse gas emissions from fuels;

Belgium must moreover:

- Play a pioneering role in research and development for new technologies and innovation in terms of bio-energy applications for the sake of sustainability;
- Cooperate actively in developing a single methodology for calculating the greenhouse gas balance;
- Press for an active development policy geared to corporate social responsibility.

[hh] In the council's view, it is not indicated to define required minimum objectives in terms of volume for the use of biofuels. The FRDO-CFDD therefore points out that biofuels are not the most efficient manner to reduce greenhouse gases.

- [ii] Furthermore, Belgium must call for attention to this issue in the European stance within the WTO and in bilateral and regional trade agreements. More attention should be paid, within the WTO framework, to the social and ecological criteria that states wish to apply. This is also beneficial to competition relations with countries that apply less strict standards than Belgium and the EU. Belgium must in particular point out the possibilities for sustainability criteria that the current WTO regime already allows.
- [jj] Certain members⁸ want Belgium to call attention to the coherence of the policy. According to them, the Belgian and European policy must be geared to the development of decentralised systems for renewable energy that can meet local energy needs and can stimulate a local sustainable development. The aim is not to have the Belgian and European policy lead to an expansion of large-scale, non-sustainable production of biofuels in the South and to an increasing trade in these non-sustainable biofuels thus produced. These members find that international cooperation must develop a vision on the role of biomass for local rural development.
- [kk] In line with the government's support policy on foreign trade and investments, the FRDO-CFDD refers to its opinion on the preliminary draft action plan on corporate social responsibility. As Belgium is an important transit country, it has an important role to play on certification and control.

1. What are the conditions for sustainable production, distribution and consumption of biofuels and biomass in general, and how can these conditions be guaranteed?

1.1 Introduction

- [1] “‘Biomass’ means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.”⁹
- [2] **The production and consumption of biomass have physical limits**, on the Belgian, European and international level so that, **irrespective of the use, the potential of biomass remains limited**. An increased demand for biomass therefore has all sorts of consequences.¹⁰ **Irrespective of the end use of biomass (as food, feed, raw material, energy source, etc.), the production and consumption thereof must be carried out in as sustainable a way as possible, so as to avoid negative economic, social and ecological effects**. A choice has to be made as to the optimal way to use biomass. In this connection, the FRDO-CFDD points out that the right to healthy and sufficient food for each world citizen must be preserved. Each of the areas of application must moreover be optimised.
- [3] For these reasons, FRDO-CFDD stresses the importance of:
- The development of sustainable production and consumption patterns in general;
 - The development of a sustainable and multifunctional agriculture and forestry in particular;
 - Making a choice between the use of biomass for energy purposes and biomass for other applications from a sustainability perspective;
 - Supervising the use of biomass for energy purposes within a general energy policy geared to energy conservation and energy efficiency;
 - Making a choice as to the way and the sectors in which biomass can be used most efficiently for energy purposes (heat, electricity or transport) based on a lifecycle analysis;
 - From the energy point of view, biomass must be given priority for the production of heat and the combined heat and power generation over less efficient applications such as transport fuel;
 - A macro-economic policy geared to sustainability in the production, distribution and consumption of biomass;
 - Sustainability criteria for non-food applications which are ideally defined at the international level (in this opinion, the council limits itself to statements on sustainability criteria for non-food applications on this issue);
 - The definition of a generally accepted methodology for calculating the greenhouse gas balance, based on a total lifecycle analysis, including indirect effects, such as changes in land use;
 - A conclusive and enforceable certification, preferably at international level and at least at EU level.
- [4] In this opinion, the council limits itself essentially to statements on sustainability criteria for non-food applications. The council points out that sustainability criteria and certification for non-food applications may differ from those of food applications.
- [5] Furthermore, the FRDO-CFDD calls for particular attention for the possibilities and needs of development countries.

⁹ Definition in the European Commission’s proposal for a directive on the promotion of the use of energy from renewable sources.

¹⁰ Cf. Background Note, [21] ff.

1.2 Sustainable production and consumption patterns and a sustainable and multifunctional agriculture and forestry

- [6] The FRDO-CFDD points out the importance of a sustainable production, distribution and consumption in general. Within this sector, the **emphasis must be on energy conservation and enhanced energy efficiency** both in the electricity generation sector, the use of heat for industrial processes and in households, as well as for the passenger and goods transport. The production and use of energy from biomass may not serve as an excuse for not endeavouring for energy conservation and efficiency.
- [7] **Irrespective of the end use of biomass, it must in any event be produced in as sustainable a way as possible.** The FRDO-CFDD aligns this principle with the general recognition of the multifunctional nature of agriculture. The agricultural sector has a major impact on nature, the landscape and open space, and offers opportunities for social benefits on several fronts. In concrete terms, functionality means that agriculture is not just an economic activity, but it also fulfils such functions as food security, rural employment, country development, management of natural resources, protection of cultural identity, protection of biodiversity, animal welfare and landscape management. This view is an essential characteristic of the official European and Belgian agricultural policy as regards both internal and external aspects, and is based on a broad social consensus. The FRDO-CFDD had already unanimously subscribed to this general principle in an earlier opinion on the WTO ministerial conference in 2005. It is therefore logical that the development of biomass is integrated in this vision.
- [8] The FRDO-CFDD also states that countries have the right to *“develop a sustainable, multi-functional agriculture geared in particular to the production of healthy food, to maintaining and developing sustainable production methods, to maintaining the ecosystem and fertility of the soil in the long term, to developing the quality of life in the countryside, fair compensation of all costs, including environmental costs, quality work in the sector and fair access to the means of production. In other words, agriculture must be productive concurrently from the economic, ecological and social point of view.”*¹¹
- [9] For the FRDO-CFDD, multilaterally agreed sustainability criteria are given preference over unilateral EU measure. There is a danger that countries will see such measure merely as new non-tariff barriers, and that trade relations will worsen as a result. An active and assertive diplomacy from Belgium and the EU is consequently needed to broach the side effects of the production of biomass for energy use on all the relevant forums on development, the environment, biodiversity or labour regulations so as to arrive at international principles and standards. It is altogether possible that a well functioning system of sustainability criteria in the EU, the largest consumer market in the world, will prod external producers to produce more sustainably – something that goes hand in hand with a level playing field. The FRDO-CFDD demands that the EU proceed with its own sustainability criteria as specified further in this opinion, taking due account of the views and interests of the South. Partner countries in the South can be offered support in meeting the sustainability criteria.
- [10] The FRDO-CFDD also asks to have forestry pursued in as sustainable a way as possible. In a circular on the federal purchasing policy of sustainably extracted wood, the council advocates *“developing initiatives to stimulate sustainable forestry worldwide, making a contribution to the creation of a global network of protected areas, and banning illegal wood from the market.”*¹²

1.3 Making choices

1.3.1 Biomass for energy purposes and biomass for other applications

¹¹ [FRDO opinion for the Hong Kong WTO ministerial conference in 2005](#), chapter 4.1.

¹² [Opinion on a circular on the federal purchasing policy of sustainably extracted wood](#), [4]

[11] Biomass can be used in different ways in different sectors. The variety in use of biomass can lead to competition between different application and increasing pressure on land use.¹³ The difference between these applications is not unequivocal. In certain cases, the one does not exclude the other (e.g. use as material and then recycling or conversion to energy).

[12] First, a choice must be made between using biomass for energy purposes or for other applications. **The council advocates a hierarchical structure in the use of biomass. First of all, the right to healthy and sufficient food for every world citizen must be safeguarded. Secondly, biomass can be used as a raw material (building material, paper, raw material in the chemical sector, clothing, etc). Thirdly, it can also be used for energy purposes. Furthermore, sustainable development must be optimised in each of these applications.**

1.3.2 Biomass from the energy point of view

Biomass in the general energy policy

[13] **An energy policy must give priority to energy conservation and energy efficiency.** The FRDO-CFDD has already stated its view in its [third opinion on a strategy for the prevention of climate change](#).¹⁴ Biomass, used for energy purposes, can be part of the solution to the energy question and to checking forms of climate change, but more attention may not be diverted from the priority objectives of energy conservation and energy efficiency. It is consequently **in the context of a coherent and sustainable energy policy that energy applications of biomass are given due attention, taking into account a realistic assessment of the possibilities and limitations thereof.** Biomass contributes to the further diversification of the energy mix and should be given a place in energy policy alongside stimulating and supporting green energy such as wind and solar energy.

Biomass: what is the most efficient energy application?

[14] When making choices, it is necessary to consider also in which way and in which sectors biomass can be **used most efficiently.** The use of biomass for energy purposes is particularly in line with the climate objectives that the EU has set in connection with Kyoto and the development of renewable sources of energy. It is therefore important to meet a number of sustainability criteria and objectives on climate control (greenhouse gas emissions) and other environmental aspects (emissions from other polluting substances), seen over the entire lifecycle, taking due account of indirect effects (such as the change in land use), in as cost-effective a manner as possible. From the point of view of efficiency, account must also be taken of the economic and technical possibilities for energy generation and the available quantity of biomass.

[15] **The technology with the greatest energy potential and which meets the climate objectives (in particular reduced greenhouse gas emissions) in the most cost-effective manner must be given preference.** For there is a limited quantity of biomass available for energy purposes. In addition, the way in which bio-energy is generated or used has a major impact on the energy potential. The number of conversions of biomass and the transport thereof, as well as of the energy (carrier) made therewith, should be limited as much as possible so as to reduce losses to a minimum. The production, transport and consumption of biomass must therefore be carried out in as optimal a manner as possible. The most sustainable crop and application must be chosen each time from a lifecycle approach, taking indirect effects into account.

[16] **In this respect, a local, energy-efficient, decentralised production of heat or the combined heat and power generation in power station (1-20 MWe) delivers the best performance, followed by gasification for the production of heat, the combined heat and power generation in small power stations, ...**¹⁵ **These applications have the highest yield in terms of greenhouse**

¹³ Cf. Background Note [38] – [45].

¹⁴ [Third opinion on a strategy for the prevention of climate change](#), paragraph [h] and chapter 4.8.

¹⁵ Cf. Background Note, Annex B

gas emissions at this time.¹⁶ The council must point out that the standards for other polluting substances (NOx, fine dust, ...) are less strict for small(er) installations, which can lead to increased emissions of such polluting substances. The production of liquid biofuels for the transport sector is a less cost-effective technology and has a lower potential for reducing greenhouse gases. Cf. also paragraphs [18] - [20].

[17] A further optimisation of these technologies is still needed from the point of view of sustainable development. **Investments in research and development for bio-energy technology applications in all sectors (electric power generation, heat generation, industry, household, transport, etc.) are indispensable.** Consequently, the further development of the use of organic waste flows and the production of biogas from residual flows deserve the requisite attention.

Biofuels?

[18] **Whether biofuels can contribute to the reduction of greenhouse gas emissions depends primarily on the type of biomass, on land use and on whether or not indirect emissions are taken into account** (change of emissions from the agricultural sector and emissions from changed land use). The European Joint Research centre concludes: *“ Most types of biofuels can save GHG in the best circumstances. However, the only major biofuels which we can say are likely to save greenhouse gas emissions (considering indirect effects) are bioethanol from sugar cane from Brazil, compressed biogas and second generation biofuels. For 1st generation biofuels made in the EU, it is clear that the overall indirect emissions are potentially much higher than the direct ones whilst they are unlikely to be much lower.*¹⁷

[19] A rising demand from the transport sector often offsets the reduction of greenhouse gas emissions. The FRDO-CFDD therefore reiterates that **work is needed on a general mobility policy geared to “bringing demand under control, the right price for all means of transport, the development of alternatives to road and air transport (modal shift), technological innovations, better town and country planning and better of organisation of the work and better management of the load factor.”**¹⁸ Biofuels are moreover not the most energy-efficient applications. Furthermore, first generation biofuels enter into competition with food production and the use of biomass as a raw material.

[20] According to the initial findings, the subsequent generations of biofuels should yield better results on the greenhouse gas balance. Further research into other effects is still necessary. Furthermore, these biofuels are not yet commercially available.¹⁹ The development of new technologies for subsequent generations of biofuels must still be supported as must the expansion of demonstration projects, all under a sustainability framework.

[21] The EU wants a minimum target figure of 10% of biofuels of the total volume of transport fuels for each Member State within the target figure of 20% of renewable energy. The conditions that the EU sets are that the production of biofuels and bioliquids must be carried out in a sustainable way, that a sufficient commercial availability of 2nd generation biofuels is necessary, and an adaptation of the Fuel Quality Directive for subsequent mixing.²⁰ **In light of the foregoing and the findings of the background note (limited availability of biomass, choice of use, the direct and indirect consequences of land use, an uncertain availability of the second generation), and the conditions that the EU itself imposes, it is logical that the current 10% objective for biofuel is at this time feasible only if the EU will introduce primarily first generation biofuels on a large scale.**

¹⁶ Cf. Background Note, [22] – [24], as well as Annex B and the conclusions of the various presentations at the [EEAC workshop on Biofuels](#) of 29 January 2008.

¹⁷ Cf. “Biofuels in the European Context. Cobtext: Facts and Uncertainties”, JRC, 2007

¹⁸ [Third opinion on a strategy for the prevention of climate change](#), paragraph [53].

¹⁹ The commercial availability is uncertain before 2020; cf. [JRC](#) and [EEAC workshop on Biofuels](#) of 29 January 2008

²⁰ [Cf. the proposal for a directive of renewable energy from the European Commission \(5\).](#)

[22] **The council therefore takes the view that this objective of 10% of biofuels by 2020 must be reviewed from a sustainability perspective.** The council moreover tends to advocate a realistic objective concerning the reduction of greenhouse gases on the basis of a transparent LCA for fuels (Cf. [42] – [44]).

1.4 Need for a macro-economic policy, sustainability criteria and certification

[23] **A rising demand for and in the use of biomass offers opportunities throughout the world for the (further) development of the agricultural sector, chiefly for family agriculture. Biomass can play a role in our energy supply only if it contributes to a sustainable development in the North and the South. To guarantee a sustainable production and use of biomass, international sustainability criteria are needed in the short term for the production and use of biomass for non-food application. The criteria used should be the same for the production phase and independent from the end use in order to prevent change effects.** These sustainability criteria for biomass must be drawn up through a participatory process. In addition, the necessary supervision must be provided to ensure compliance with the criteria set. There is therefore a need for conclusive certification of biomass.

1.4.1 A macro-economic policy geared to the sustainability of production, distribution and consumption of biomass

[24] Macro-economic effects are often difficult to define in criteria. These are the effects of the production, processing and use of biomass that take place outside industries or plantations. An example is the impact of the increased demand for biofuels on food prices. In addition to disappointing harvests worldwide, other reasons cited for the rising prices include the:

- Greater demand from high-growth countries;
- Rising price of raw materials and production factors, in particular owing to speculation;
- Damage caused to crops this year.

[25] **For macro-economic effects that often cannot be measured or approached at plantation or company level, the government must provide a monitoring system that can be used for a regular assessment and, where necessary, adjustment of the objectives, instruments and legislation. Stakeholders and the midfield must be involved in this monitoring and assessment.**

[26] A guiding policy by the government is moreover necessary in order to deal with these effects. The individual activity level is not exactly the best place to report on these effects or to bring solutions thereto. Thus, a Belgian company that works with local products scores well on efficiency and sustainability from a local perspective, but seen globally, causes a negative impact through substitutions. **Governments do have various instruments that can help ensure a level-playing field. These include regulating (product standards, emission standards, producer liability, town and country planning), and economic (taxes, subsidies, agreements, etc.) aspects.**²¹

[27] In its opinion on the separation of growth and resource use/environmental pressure in Belgium, the council looks into the issue of mobility from such a perspective. It is necessary *“to deploy different instruments concurrently in order to get results. When the aim is to get more people to switch from private vehicle transport to public transport, then the offer and speed of public transport must also be improved, the infrastructure and facilities round train stations must be expanded better, the price instrument must be used (e.g. through road pricing) and the awareness of the car driver must be raised to make the switch. Taken separately, each of these instruments makes little sense; combined, however, they can produce results.”*²²

²¹ [Cf. FRDO-CFDD opinion on separating growth and resource use/environmental pressure in Belgium.](#)

²² [Opinion on separating growth and resource use/environmental pressure in Belgium](#), [65]

1.4.2 Sustainability criteria: the state of things

[28] The EU wants to use the same set of sustainability criteria for the renewable energy source directive as for the *Fuel Quality Directive*. The sustainability criteria for biofuels that the EU summarises in its proposal for a directive on renewable energy sources are:

- At least a 35% reduction of greenhouse gases;
- Not produced from raw materials from a country with a known high biodiversity value (status after January 2008);
- Not produced from raw materials from lands with a high carbon stock (status after January 2008);
- Agricultural raw materials produced in the EU that are used for the production of biofuels must meet EU environmental regulations.

[29] If it should appear that a certain biomass does not meet the criteria set, it will be granted no form of support, and cannot be taken into account for the objectives of the Member States at EU level. These EU criteria are limited in that they apply only to biofuels and bioliquids and not to the production and use of biomass as a whole.

[30] In its third opinion on a strategy for the prevention of climate change, the FRDO-CFDD finds that "it is necessary to draw up a positive list of fuels that meet the relevant criteria"²³:

- Global energy efficiency;
- Greenhouse gas emissions during the production and consumption cycles;
- Provenance;
- Costs;
- Social impact;
- Impact on the biodiversity;
- Impact on the world food safety."

[31] The European parliament too has proposed changes to the FQD regarding certification and tracing (Amendment 48 of the European Parliament), and wants a broader set of sustainability criteria to be taken into account within the following areas:

- Biodiversity;
- Carbon stocks;
- Protection of labour standards;
- Access to water;
- Protection of air quality;
- Water and soil;
- Land use;
- Greenhouse gas emission;
- Food security and prices;
- Local scope;
- Access to information.

[32] A working group in COREPER is currently busy with a proposal for a new set of sustainability criteria that must apply to both directives (RED + FQD).

[33] The Netherlands has asked the CEN (the European Committee for Standardisation) to draw up a standard set of sustainability criteria. This is being carried out in the technical working group CEN/TC 383.

[34] There are already various initiatives at international level to define sustainability criteria for biomass, in particular for energy purposes. Examples include the *Roundtable on Sustainable Palm Oil* (RSPO), and the *Roundtable on Sustainable Biofuels* (RSB), PEFC and FSC.²⁴ In this

²³ [Third opinion on a strategy for the prevention of climate change](#)

²⁴ The FRDO-CFDD provides a summary of RSPO and RSB in Appendix 2, but makes no other statements on the criteria used nor on the way in which they were defined. The council points out that there is no RSPO oil available on the market at this time.

opinion, the FRDO-CFDD does not address the expediency or credibility of these certification systems.²⁵

[35] In addition, various EU Member States are working on sustainability criteria for biomass for energy purposes; e.g., the Netherlands, with the Cramer Report and the United Kingdom with the Renewable Transport Fuel Obligation.²⁶ Countries like France and Germany are also working on criteria at this time.²⁷

[36] In Belgium, the Act of 10 June 2006 provides for selection criteria on the basis of which producers of biofuels are selected to produce a certain quantity of biofuels under a fiscally favourable regime. The table below provides a summary of the selection criteria used. These are not minimum criteria, but test criteria without a previously defined methodology or control mechanism. On the basis of these criteria, a number of producers are issued a licence until 2013. An evaluation is made annually and a report is available. There is a chance that pursuant to new European sustainability criteria, these producers selected in Belgium will no longer be compliant with the conditions in force for tax exemptions after 2013. The proposal for an EU directive actually provides for a transition period until 2013 (Article 15, 2: In the case of biofuels and other bioliquids produced by installations that were in operation in January 2008, the first subparagraph shall apply from 1 April 2013.)

Theme	Indicator
Climate	CO2 balance over the entire production line
	Energy efficiency of the production unit
Agriculture	Distance for supply
	Hectares used
	Quantity of pesticides and fertilisers
	Biomass supply security
Economy	Calculated cost
	Expected commercial value
	Production capacity of biofuels
	Supply capacity of biofuels
Social	Compliance with labour regulations

1.4.3 Sustainability criteria for biomass

[37] **The FRDO-CFDD advocates a set of sustainability criteria for biomass.** It takes time for such a set of sustainability criteria to acquire concrete form and become operational. Nevertheless, there are already various (international) initiatives and (international) regulations (cf. 1.4.2 supra), some of which can be used as a basis to give general criteria concrete form and make them operational. In this opinion, the council focuses primarily on statements concerning sustainability criteria for non-food biomass for energy purposes.

[38] **In any event, the criteria must be:**

- **Ideally applicable worldwide or at European level so as to ensure free access to the market;**
- **Applicable generally;**
- **Measurable or verifiable and certifiable;**
- **Enforceable.**

[39] The criteria are ideally set at international or at EU level. In addition to making a choice as to the way in which biomass will be used, these criteria also have consequences for the available quantity of biomass. In fixing and implementing policy objectives, due account must be taken of this limited availability of sustainable biomass. The council therefore concludes that the EU's 10% objective must be revised downward (cf. also [22] and [23]). This does not imply, however,

²⁵ For an overview of RSPO, RSB, FSC and PEFC, cf. Appendix 2.

²⁶ For a summary, cf. Appendix 3.

²⁷ Cf. Appendix 3.

that the objective of obtaining 20% of the energy from renewable sources by 2020 should be abandoned.

[40] It must be pointed out that a number of aspects are not included in the proposal:

- Economic aspects, such as price and competition;
- Environmental aspects such as the potential for reducing greenhouse gases, (in)direct effects of land use, environmental quality, and availability of water;
- Social aspects such as labour rights, land rights, health, access to natural resources, and consultation of the local population, the impact of food safety and food security;
- Availability of raw materials.

The Council will speak out further in this opinion on the expediency of these criteria.

[41] Certain members²⁸ take the view that the legal basis for sustainability criteria at EU level must be Article 175 of the EU Treaty. Countries must retain the right to go further than what is established at EU level. According to these members, the application of this Article 175 is hardly market distorting.

Other members²⁹ are of opinion that the legal basis must be Article 95 of the EU Treaty, so as to ensure the free movement of the products concerned in the EU, and to avoid the distortion of competition. These members therefore think that the application of Article 175 can seriously distort competition. In concrete terms, the countries must comply with criteria, and may not impose any additional requirements thereon. Depending on the difference between the additional criteria of a specific country and the EU criteria, the impact on the financial level/stocks can be substantial.

Environmental criteria: greenhouse gas reduction potential, land use and biodiversity, environmental quality and availability of water.

[42] Environmental criteria must be able to guarantee in particular that only biofuels are used that can actually make a contribution to reducing greenhouse gas emissions. A volume objective (10%) is less effective here than a greenhouse gas reduction objective, the latter thus being an important criterion. The FRDO-CFDD advocates a percentage threshold for the reduction of greenhouse gas emissions with respect to the average fuel mix in the EU, rather than a volume objective. A sufficiently high greenhouse gas balance is a necessary precondition to offering guarantees that inducements will be given only for the most efficient biomass.

[43] In Annex VII to the proposal for a Directive on Renewable Energy Sources, the EU Commission proposes a method for calculating the greenhouse gas balance, as well as reference values for fossil fuels. The Commission moreover proposes a target of 10% of biofuels by 2020. Article 7a of the FQD calls for a 10% LCA reduction of greenhouse gas emissions for the period 2010 – 2020. According to EUROPIA, a mixture of $\pm 16\%$ of biofuels is needed for this purpose, depending on the contribution of the different types of biofuels to greenhouse gas reduction. The greatest “gain” in greenhouse gas emission is obtained from the specific use (tank to wheel), which accounts for $\pm 85\%$ of greenhouse gas emissions from fossil fuels, considered over the entire lifecycle. The rapporteur in DG ENV proposes an 8% share of biofuels, with a minimum reduction potential of 50%. The FRDO-CFDD has called for the removal of this lack of clarity and for the establishment of the EU level 1 objective and methodology, taking into account the sustainability criteria, the available quantity of biomass, the hierarchical structure in the use of biomass, and an LCA analysis of the greenhouse gas reduction potential. The council reiterates in this respect its advocacy of a percentage threshold for greenhouse gas reduction with respect to the average fuel mix in the EU, rather than a volume objective.

[44] There is a need at EU level, and ideally at international level, to have a single methodology for calculating the greenhouse gas balance in a transparent and accurate manner both for all energy biomass and for fossil sources of energy, based on a complete lifecycle

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analysis that takes account of direct and indirect effects (nitrogen oxide emissions by farming practices and changes in land use).

[45] **In developing countries in particular, changed land use is one of the critical factors that determine whether or not biofuels are beneficial to the environment.** Large-scale biofuel production can lead to relocating other agricultural activities to ecologically vulnerable areas with possible negative effects for biodiversity, and often also increased greenhouse gas emissions as a result. Sustainable criteria must therefore take such indirect effects into account. **When taking land use changes into account, the impact thereof may not be spread over more than 20 years.**

[46] **The local production and the local use of biomass in Belgium can make a valuable contribution to sustainable development. This does not necessarily lead to more pressure on the environment or to a further intensification of agriculture, or to the destruction of landscapes in Belgium. Nevertheless, a great demand for biomass will create enhanced pressure on farming land and substitution will often occur when local crops are used. For instance, rapeseed oil from Europe used for the production of biofuel is often replaced on the food market by oil imported from outside the EU. It is important to take due account of these cross-border change effects.**

[47] The farming practices connected with the production of biomass also have an impact on the greenhouse gas balance. The JRC states that the most important greenhouse gas emissions in agriculture are from (nitrogen) fertilisers and from nitrogen oxide released by the cultivated land. As N₂O is about 300 times more powerful than CO₂, it is important to take this impact into account in the fight against climate change.

[48] The use of biomass, and in particular the development of biofuels, has important consequences for biodiversity. When switching over to energy crops or laying out new plantations, direct and indirect land conversions cause irreparable damage to vulnerable ecosystems. These are chiefly natural and semi-natural ecosystems rich in carbon such as primary and secondary tropical forests, peat bogs, savannahs (Brazilian Cerrado) prairies, steppes and watery areas (the mouth of the Tana River in Kenya). Palm oil plantations are the leading cause of the disappearance of the primary forest in Indonesia and Malaysia. In addition to a considerable quantity of greenhouse gases emissions, the destruction of these habitats means a great loss of biodiversity (for instance, the Orang-utan is now an endangered species).

[49] **In addition to the greenhouse gas balance, the ecological criteria must also guarantee the preservation of biodiversity (including indirect effects) and of the quality of the environment (soil, water and air) and water availability. Furthermore, a clear definition of degraded land is also needed.**

Social Criteria, food security, food sovereignty and food safety.

[50] The European Commission's proposal for a directive on renewable energy sources calls on every Member State to ensure that 10% of the end use of energy in the transport sector will by 2020 stem from renewable sources of energy. The directive provides for defining sustainability criteria, more specifically for biofuels, that have to be met in order to be able to count these biofuels for attaining the 10% objective. The proposed criteria pertain to greenhouse gas emissions and protection of land with a large biodiversity value and a sizeable rapeseed oil stock (cf. introduction).

[51] Certain members³⁰ find that the current criteria, as proposed by the European Commission, do not provide sufficient guarantees on the ecological and social level. On the ecological level, they regret that the greenhouse gas balance is too weak, and thus inducements for developing the most efficient biomass are lacking. These members propose a greenhouse gas balance of at least 60%. They moreover underscore that not taking indirect effects (in terms of changed land use and farming practices) into account gives a distorted picture of the impact of biofuels on greenhouse gas reduction. **The inclusion of a risk adder (or risk coefficient) in the**

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calculation of the greenhouse balance is a way of taking account of these indirect effects. These members also point to the need for a clear definition of degraded land, **where due account is taken of the biodiversity value and socio-economic value of fallow land. A clear definition in European legislation as to what is understood by “degraded lands” is also needed in connection with the food security, as lands are often jointly owned and it is the most destitute people in developing countries that use these lands to generate their daily income.** The members moreover point out the social aspects of production are not broached in the sustainability criteria. These members stress that social criteria must ensure that human rights are respected, that workers can work in good conditions, that the biofuel production has no impact on local communities and indigenous populations, that land rights are respected, small companies are treated fairly and that the right to food is safeguarded. Furthermore, informing and consulting the local population is an absolute requirement. Biofuels produced in a way counter to these principles may not qualify for attaining the European fuel objectives either in the RED or in the FQD.

These members²⁸ point to the numerous international agreements and principles on which social criteria for the sustainable production of biofuels must be based. They refer to Appendix 4 of this opinion for a summary of these international agreements and principles. Compliance with these ILO and UN agreements and provisions on economic, social, cultural and political rights are an absolute minimum. The ratification of these socio-economic treaties may not, however, be considered as a sufficient condition. The effective implementation thereof must also be a criterion. Sufficient verification is also necessary.

These members²⁸ also point out that the criteria in the table in Appendix 4 are social criteria that must be implemented at the plantation level. Criteria at the plantation level are however not sufficient to guarantee that the negative impact of production on sustainable development will be limited in scope. We are thinking in particular of macro-economic effects on food security. Thus, up to 30% of food prices increases are attributed to biofuel production (cf. IMF, IFPRI), with dire consequences for food importing countries and for the food security of the poorer members of society who have to spend a larger part of their income on food.

These members²⁸ therefore believe that there is an urgent need for defining indicators for food security and food sovereignty. The impact of policy on food security must be monitored continuously, in line with the FAO Right to Food Guidelines. The production and consumption of biomass for energy purposes may not have a negative impact on these indicators. The import of agricultural products or biofuels must be limited to such products as can be produced in a sustainable way with respect for the food security, food sovereignty and food safety. If the policy has a negative impact on these indicators, the policy objectives must be adapted.

[52] Other members³¹ take the view that the **sustainability criteria for (non food) biomass must concentrate on local aspects specific to the exploitation of agriculture and forestry.**

- These include **local aspects** that can be attributed to the specific operation. Aspects of a more macro-economic nature on both the socio-economic and environmental front must be approached at the level of the policy itself, and specific instruments must be provided for that purpose;
- They also include **aspects specific to the exploitation of agriculture or forestry** such as, e.g. the depletion of soils, a direct consequence of such practices. More cross-sectional problems that are not specific to biofuels are subject to a specific policy and specific instruments, as is the case for the ILO standards.

According to these members²⁹ the ILO task package comprises, as the ILO itself specifies, also the verification of compliance with its standards: "The ILO international recommendations and conventions cover a wide range of topics relating to labour, employment, social security, social policy and human rights. The application of international labour standards is examined regularly by the supervisory bodies of the ILO among others (...) Proceedings for claims and complaints

may be introduced against the Member States that do not comply with conventions that they have ratified. Under special proceedings, the Trade Union Freedom Committee examines complaints about violations of trade union freedom, whether a Member State has or has not ratified the conventions concerned.”³²

Furthermore, “countries that have ratified a convention are required to apply it in law and in practice and to report on the application thereof at regular intervals.”³³ The same applies to agreements at UN level.

According to these members²⁹ the various standards of international organisations (ILO, UN, etc.) are applicable only to all activities in a country that are not specific to the exploitation of agriculture or forestry. They integrate in criteria pertaining to environmental sustainability criteria for biomass that can even be counterproductive. For that matter, not authorising biomass from certain countries – because their exploitation, for instance, does not meet all the social standards – **can discourage countries that have undertaken a clear commitment to improve respect for social standards and lead them to favour other trading partners** (US, China, ...) so that the attaining of each European objective becomes even more difficult. **Furthermore, the focus on biomass** (social criteria would apply only to biomass but not to other activities) **could be seen as a trade-distorting measure.**

Finally, these members²⁹ opine that irrespective of the criteria for biomass, **they must be developed in cooperation with countries from the South concerned.**

WTO problem

[53] Criteria on the environmental and social front are often problematic within the framework of the World Trade Organisation (WTO). It is important that the WTO recognise the criteria used, so an international agreement has to be reached on such criteria. The UN provisions and the social criteria of the ILO conventions must provide a direction for such an agreement. The current WTO framework must take account of these provisions and criteria.

[54] In this connection, the FRDO-CFDD refers to previous opinions in which it made statements about the role of the WTO.

[55] A number of exception rounds, included under Article XX of GATT pursuant to the basic principle the WTO on non-discrimination, could prove relevant.

1.4.4 Implementation of sustainability criteria by certification

[56] The implementation of sustainability criteria is a learning process. **Criteria constitute a necessary step for guaranteeing the sustainability of biomass, but cannot, in and of themselves, offer any guarantee for real sustainability.** The actual blocking of non-sustainable biomass from a certain region is the logical attitude when certain sustainability criteria cannot be verified or controlled.

[57] Sustainability criteria must therefore be combined with sufficient supervision to ensure compliance with the criteria. In other words, there is a need for certification and accreditation of the certifying institutions.

[58] Certification systems develop and new labels can come on the market. A certification system consists of 4 components: 1) the development of the standard, 2) the certification, 3) the accreditation and 4), the chain of custody and labelling. When certification systems are assessed, these 4 components are evaluated. Furthermore, it is also important to look at certification from an international perspective³⁴ and the competent certification bodies must be independent.

³² http://www.ilo.org/global/What_we_do/InternationalLabourStandards/lang--fr/index.htm

³³ http://www.ilo.org/global/What_we_do/InternationalLabourStandards/Introduction/Co

³⁴ Cf. [FRDO-CFDD opinion on a circular on the federal purchasing policy of sustainable extracted wood \[49\]](#).

[59] **The certification should therefore be elaborated on the basis of existing initiatives.** Different systems are being developed at this time, but they must still be tested in practice.

[60] **The FRDO-CFDD calls for the harmonisation of existing systems of green electricity certification in Belgium and in Europe.** It is important that a European project supervise the development of new or the improvement of existing green electricity labels, and try to harmonise the existing labels in the different Member States.

[61] The council here follows the working group on biomass of the “Spring of the Environment” to ensure that the attainments of GSC in Belgium can be maintained.

[62] Different initiatives on certification for biomass exist or are being developed at this time (RSPO, RSB, PEFC, FSC, cf. 1.4.2). In this opinion, the FRDO-CFDD does not address the expediency or credibility of these systems, but does believe that these can be a starting point for the development of an ideally global or an EU certification system.

[63] Various new policy initiatives (EU Commission, Cramer, RTF Act in the United Kingdom, ...) propose to work with *track and trace*, mass balance or *book and claim* systems, or to proceed to a case by case evaluation. Furthermore, the EU's proposal for a directive on renewable energy proposes the use of a mass balance.

[64] Furthermore, the EU Commission proposes that bilateral and multilateral agreements or national or international standardisation schemes can be sufficient to declare biomass compliant with the specific provisions of the Renewable Energy Directive.

[65] It comes down to developing a European or international certification system.

1.5 Developing countries

[66] **In developing countries, the production and use of biomass can thus contribute to the reduction of poverty and energy generation in areas that are difficult to access.** The cooperation for development from industrialised countries can thus pay attention to the growing market of alternative energy. It can play an important role to support the local population in capitalising fully on opportunities that energy cultivation entails and to protect it against the risks thereof.

[67] **There is a need for investment, capacity enhancement, and the transfer of sustainable technologies and support measures – especially for small producers** (e.g. to comply with sustainability criteria so as to apply for certification). In this way, decentralised systems for renewable energy can be developed to meet the energy needs and to stimulate a local sustainable development. **Projects geared to local energy supply must take priority here.** The transfer of sustainable technologies to developing countries is therefore necessary to give these countries a chance to make the leap to a sustainable energy and transport sector

2. What role for Belgium in an international context

[68] **The FRDO-CFDD takes the view that Belgium must support and promote the recommendations from Chapter 1 at international level. Belgium must cooperate and plead at international level for:**

- **A sustainable production of biomass;**
- **A hierarchical structure in the use of biomass, where the right to sufficient and healthy food takes priority;**
- **A hierarchical structure in the use of biomass for energy purposes, where the technology that has the greatest energy potential and can achieve the climate objectives in the most cost-effective manner must be given priority (cf. [14] – [17]);**

- An energy and mobility policy that is primarily geared to energy conservation and efficiency;
- A coherent international policy geared to dealing with macro-economic effects;
- The development of a set of sustainability criteria and accompanying certification system, based on existing initiatives;

The review of the 10% objective of the EU and a percentage objective regarding the reduction of greenhouse gas emissions from fuels;

Belgium must moreover:

- Play a pioneering role in research and development for new technologies and innovation in term of bio-energy applications for the sake of sustainability;
- Cooperate actively in developing a single methodology for calculating the greenhouse gas balance;
- Press for an active development policy geared to corporate social responsibility.

All of the foregoing, with due account of the remarks made and conditions set by the council to that end in Chapter 1.

[69] In March 2007, the European Council fixed a minimum objective for biofuels. By 2020, at least 10% of the energy needed for transport must come from biofuels. The Council attached conditions thereto: *“the production must be sustainable, the second generation biofuels must be commercially available, and the Directive on the quality of fuels must be adapted to be able to mix corresponding quantities.”* **Belgium must play a pioneering role at European and international level to streamline the development of sustainability criteria and certification and to strive for a global agreement.**

[70] **In the council’s view, it is not indicated to define required minimum objectives in terms of volume for the use of biofuels. Cf. [42].**
The FRDO-CFDD therefore points out that biofuels are not the most efficient manner to reduce greenhouse gases.

[71] The FRDO-CFDD therefore reiterates that attention must be paid in the Belgian development policy to the issue of biomass for energy purposes. In developing countries, biomass offers opportunities for a sustainable, local agricultural sector, for reducing poverty and for the local production of energy at areas that are difficult to access. There is a need for investment, capacity enhancement, transfer of sustainable technologies and support measures – especially for small producers. Projects geared to local energy supply must be given priority. Cf. also [66] and [67].

[72] **Furthermore, Belgium must call for attention to this issue in the European stance within the WTO and in bilateral and regional trade agreements. More attention should be paid, within the WTO framework, to the social and ecological criteria that states wish to apply. This is also beneficial to competition relations with countries that apply less strict standards than Belgium and the EU. Belgium must in particular point out the possibilities for sustainability criteria that the current WTO regime already allows.**

[73] **Some members³⁵ want Belgium to call for attention to the coherence of the policy.** Belgium must in particular chart the side-effects of non-sustainable production of biomass within the internal policy frameworks with a view to the establishment of international principles and standards.

These members³³ take the view that Belgium must plead for sufficient sustainability rules for all energy biomass. Only when an agreement has been reached on this matter, can the discussion on objectives per sector be initiated.

These members³³ also point out that a drop of greenhouse gas emissions in the transport sector can in the short term be best achieved through energy efficiency, in particular by downsizing cars. These members also take the view that Belgian and European policy must be geared to the

development of decentralised systems for renewable energy that can meet the local energy needs and stimulate a local sustainable development.

According to these members³³ the aim is not to have the Belgian and European policy to lead to the expansion of large-scale, non-sustainable production of biofuels in the South and to an increase in the trade of these non-sustainably produced biofuels. Such a policy and trade do not contribute to the development of the South, where the poorest segments of the population, family farmers and plantation workers, are already experiencing the social and environmental consequences of large-scale production of biofuels.

These members³³ opine that, in connection with the millennium goals, Belgium must help to ensure a policy that addresses the needs of 1.6 billion people in developing countries, who still do not have access to essential energy services, usually living in remote rural areas. International cooperation must develop a perspective on the role of biomass for local rural development.

[74] **In connection with the government's policy geared to supporting foreign trade and investment, the FRDO-CFDD refers to its opinion on the draft action plan for corporate social responsibility:** *"The FRDO-CFDD considers it useful that, in providing support for investments abroad, the government uses sustainable development as a frame of reference. In the event of increased transparency of the criteria for international commitments and undertakings, care must be taken to protect commercially sensitive information and to guarantee a level playing field for Belgian companies in respect of their foreign competitors. The government must on this front urge an active policy for corporate social responsibility at international level."*³⁶

[75] As Belgium is a transit country where many basic raw materials enter Europe, it has an important role to play for certification and inspection.

³⁶ [Opinion on the draft action plan on corporate social responsibility](#), [18].

APPENDIX 1: Federal Council for Sustainable Development **[FRDO-CFDD]**

Background Note on Biomass

- Preparation by the ad hoc working group on Biomass
- This note was originally drawn up in Dutch

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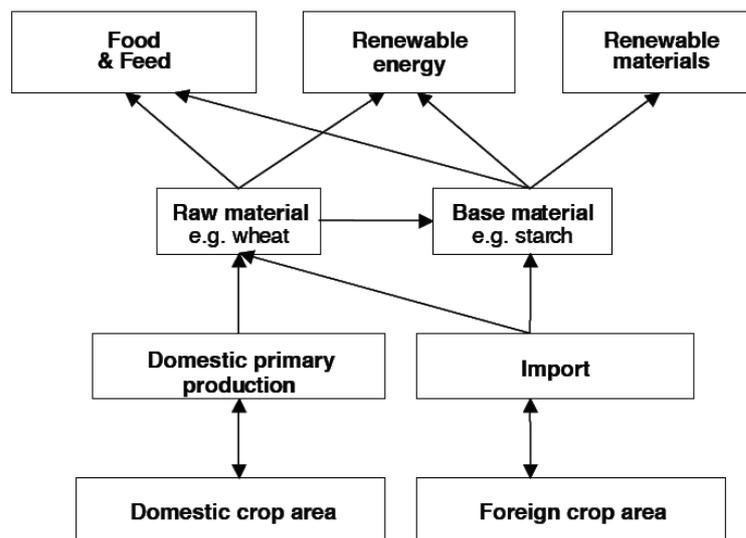
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Introduction: Set-up and Structure

1. After the internal seminar of 3 October 2007, the Board of the FRDO-CFDD decided to explore the issue of biomass for energy use further in a reflection note: a basic document on the facts, with a survey of the most important elements, pressure points and the problems of the use of biomass – from the perspective of sustainable development.

Biomass: definition and use

2. “Biomass’ means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.”³⁷ This biomass is used by humans for food, feed for animals, as a source of construction materials, a source of energy...Finally, a range of chemical products can also be co-produced from biomass in what are known as biorefineries.³⁸
3. The diversity in the use of biomass can lead to competition between the different applications. The difference between these applications is not clear. For, in certain cases, one does not exclude the other (e.g. use as material and then recycling or converting to energy). The most sustainable use of biomass must be assessed in view of the full life cycle of the product.



Source: Bringezu et al. 2007

Figure 1 Competing Biomass applications (Presentation of Justus von Geibler, internal seminar of FRDO-CFDD).

Biomass: energy application

4. Biomass is a renewable source of energy, provided that the use does not exceed the sustainable production capacity. This application has received a great deal of attention in recent years, for various reasons:
 - a. The rise in energy prices has revived interest in renewable sources of energy. Biomass provides an alternative for generating electricity and heat and for transport fuels.

³⁷ Definition in [the European Commission's proposal for a directive on the promotion of the use of energy from renewable sources](#).

³⁸ [IEA, Bioenergy development project & biomass supply](#).

- b. Energy certainty and energy security are high on the agenda. The rapidly growing demand for fossil fuels, not only in our regions but also in Asia, and the unstable political climate in the Middle East are giving rise to concern about the availability of oil and gas and are having an impact on the price. Domestic production of biomass and the import of bioenergy offer a possible alternative.
 - c. Faced with globalisation, countries are challenged to revise their agricultural policies thoroughly. Non-food applications of biomass can provide new opportunities and generate revenues for the agricultural sector. This is no established pattern.³⁹
 - d. Countries are undertaking commitments to reduce greenhouse gas emissions in view of the climate change. The use of biomass as an alternative to fossil fuels can reduce greenhouse gas emissions. This, too, however, is no certainty.⁴⁰
5. As regards the biomass for energy use, a distinction can roughly be drawn between biomass for waste products (organic waste), biomass from by-products (sludge from water treatment installations, manure, etc.) and biomass from energy crops (both specific energy crops and forestry products, micro-algae, etc.). Companies that process such biomass are already using these flows to generate energy and heat both for their own use and for export.
6. Three distinctions are by and large drawn in the modern use of biomass for energy purposes:
- o The use of biomass for heating;
 - o The use of biomass for generating electricity;
 - o The use of biomass for the transport sector (biofuels).

Biomass in the global energy context

7. Renewable energy is playing an increasingly more important role within the context of the energy question. Biomass meets about 11% of the total energy need worldwide at this time. In industrialised countries, the share of energy generated from biomass is below 10% of the total energy generation. In developing countries, this figure is 20 to 30%. In a number of countries this share is as high as 50% or even 90%.⁴¹ This large share is explained by the traditional use of biomass (wood, manure, etc.) for cooking and heating in households.
8. Of the 11% production worldwide, about 9% falls under the traditional household use (household heating, cooking, etc.).⁴² The commercial energy generation (the remaining 2%) is mostly marked for the generation of heat and electricity.
9. Biofuels, especially ethanol from sugarcane, corn and maize, and to a lesser extent, biodiesel from oil-containing crops, accounted for only 0.17% of the total consumption of transport fuel worldwide in 2005. This application of biomass is gaining in importance everywhere. The worldwide production of ethanol has doubled, and the production of biodiesel tripled since 2000. By comparison, crude oil production increased by 7% during the same period.⁴³

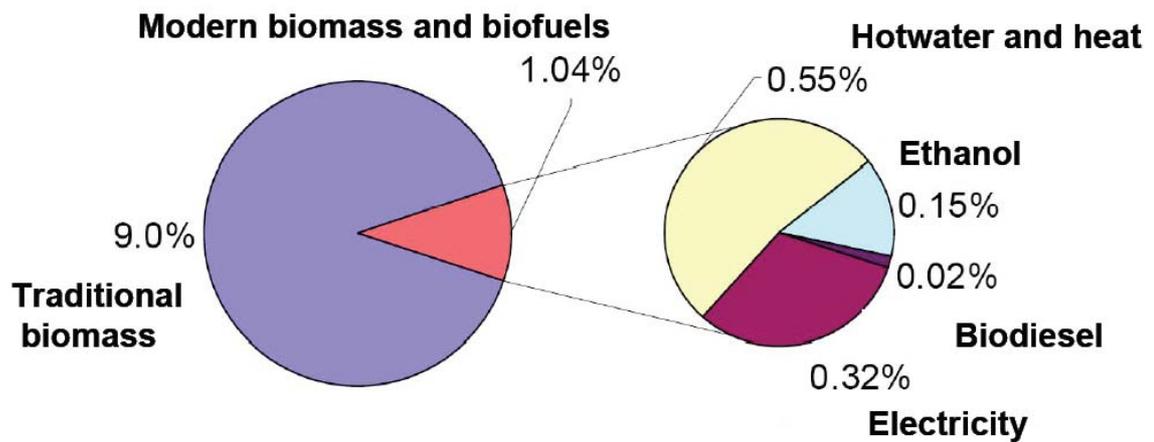
³⁹ Cf. [25] and [32] – [37]

⁴⁰ On the contribution of biomass to reduced greenhouse gas emissions, cf. [26] ff.

⁴¹ International [Energy Agency](#) and [presentation of Kyriakos Maniatis at the internal seminar of 3 October](#) and [Potential contribution of bioenergy in the world's energy demand](#), IEA Bioenergy, 2007.

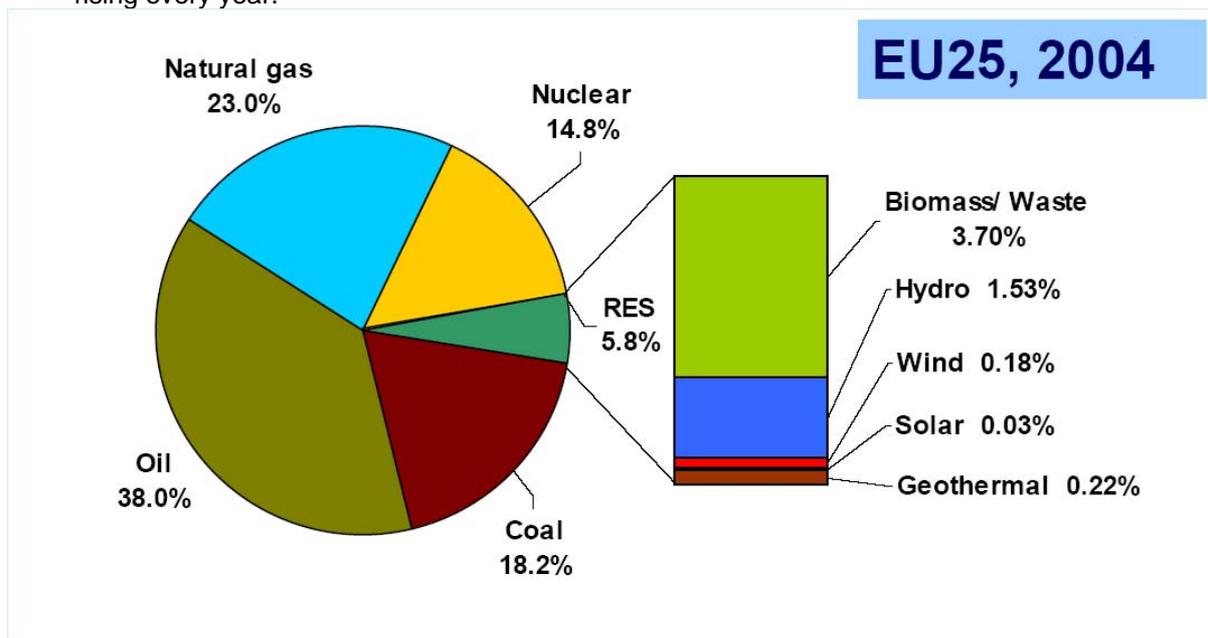
⁴² International [Energy Agency](#) and [presentation of Kyriakos Maniatis at the internal seminar of 3 October](#).

⁴³ [Potential contribution of bioenergy in the world's energy demand](#), IEA Bioenergy, 2007 and presentation of Justus von Geibler at the FRDO-CFF internal seminar.

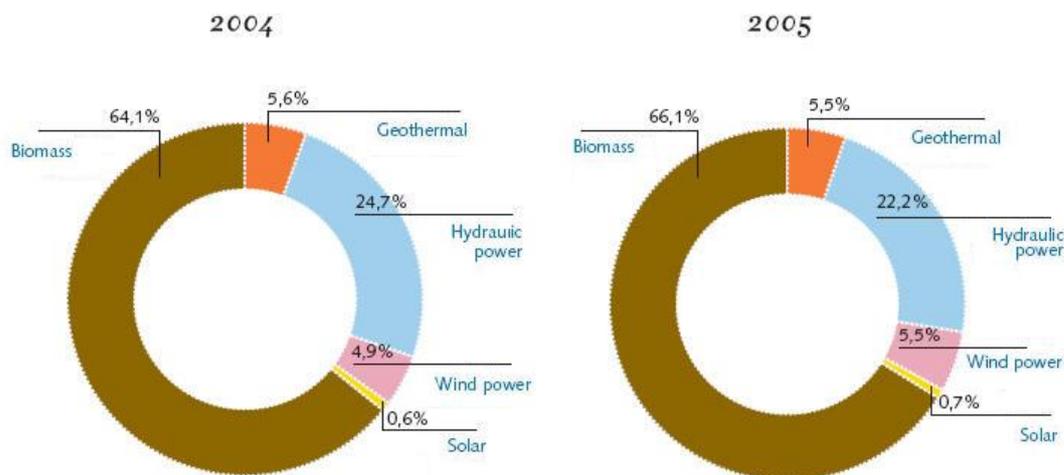


Graph 1: Use of biomass (Presentation of Justus von Geibler, FRDO-CFDD internal seminar)

10. In the EU, biomass provides about 3.7% of the total energy consumption. Its share is rising every year.



Graph 2: Share of energy from biomass in the EU (Kiriakos Maniatis, FRDO-CFDD internal seminar).



Graph 3: Rising share of biomass in the total generation of renewable energy in the EU (EU Commission website).

11. In Belgium, the share of renewable energy in energy generation is currently at $\pm 2.5\%$ (renewable and recovered fuels, figures 2005). The precise share of biomass is not clear.

Energy consumption by source of energy (1979-2005)								
In % of the total	1979	1995	2000	2001	2002	2003	2004	2005
Total consumption of primary energy (a)	48,161	52,268	59,407	58,857	56,282	58,939	57,721	56,205
Solid fuels	22.8%	19.1%	14.1%	13.1%	11.6%	10.5%	11.1%	9.7%
Petroleum and petroleum products	51.9%	39.2%	39.9%	40.8%	39.7%	41.0%	38.9%	39.5%
Natural gas	19.4%	20.4%	22.6%	22.0%	23.8%	24.5%	25.3%	25.2%
Nuclear energy	6.2%	20.6%	21.1%	20.5%	21.9%	20.9%	21.4%	22.1%
Renewable and recovered fuels (b)	N/A	N/A	1.6%	1.7%	1.7%	2.1%	2.1%	2.5%
Other	N/A	N/A	0.7%	1.4%	1.2%	1.0%	1.2%	1.0%

(a) Ktoe: 1,000 tons of oil-equivalent – 10^{10} kilocalorie.

(b) As of 1999.

N/A: not available.

Source (required mention): [FOD Economy, SMEs, Self-employed and Energy, Directorate General for Energy.](#)

Table 1: Energy consumption by source of energy (NSI)

Biomass: Policy objectives

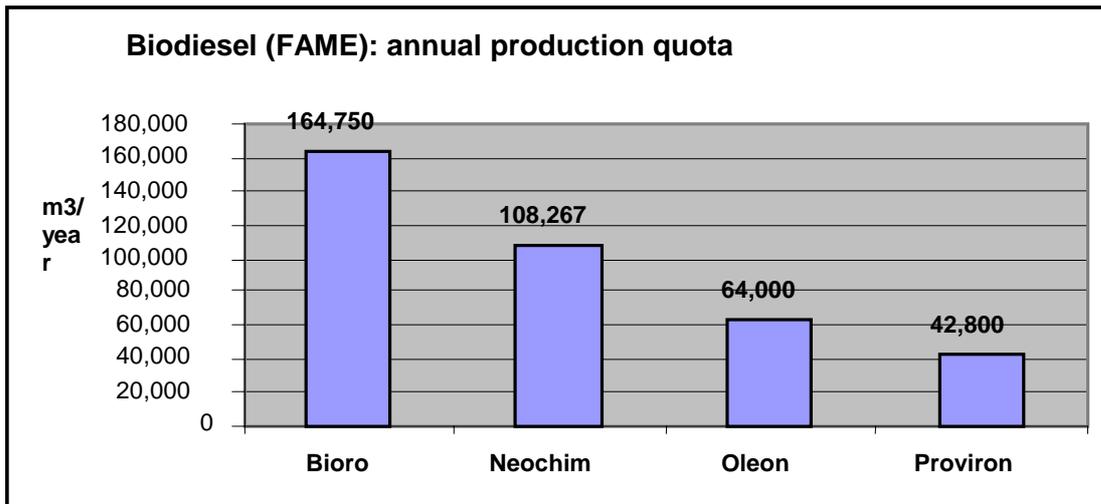
12. The current proposals for European objectives on renewable energy are defined as follows:
- 20% renewable energy in the total EU energy consumption
 - A minimum target figure of 10% of biofuels of the total volume of transport fuels for each Member State
 - A reduction of 20% to 30% of greenhouse gas emissions
 - 20% energy savings
- by 2020.⁴⁴ In January 2008, the European Commission published a proposal for a directive on renewable sources of energy that confirms these objectives.

13. The Fuel Quality Directive (FQD) is also being reviewed at this time. Dating from 1988, this directive defines standards for petrol, diesel and gas fuels for vehicles. In the beginning of 2007, the Commission proposed a revision of the directive to:
- Take account of technological developments;

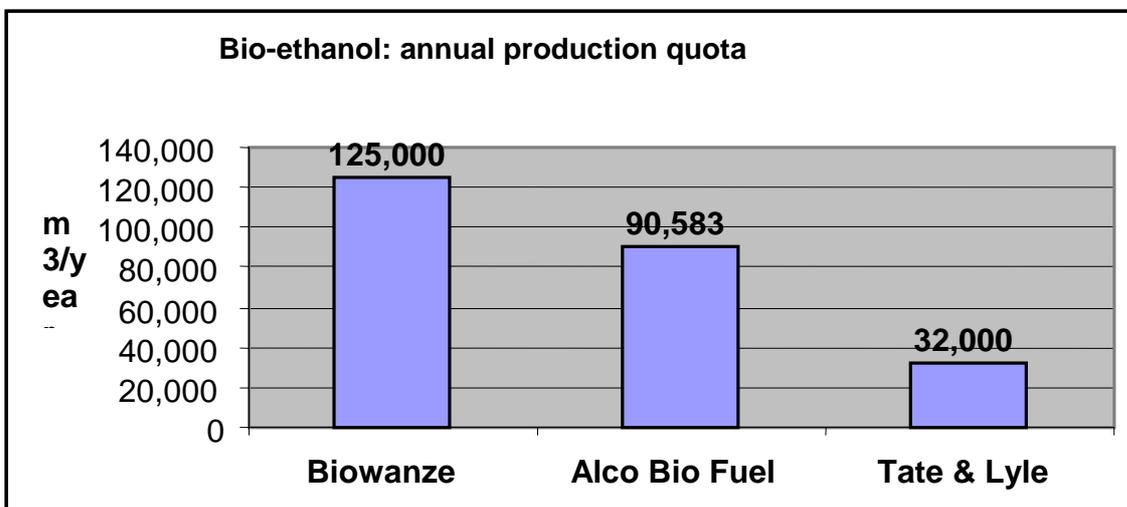
⁴⁴ For an extensive summary of the policy on biomass, cf. Annex 2.

- b. Contribute to the fight against climate change by promoting the development of fuels with lower CO₂ emissions
 - c. Attain the air quality objectives of the Clean Air Strategy of 2005.
14. The revised directive should make it possible to mix higher percentages of biofuels to fossil fuels. The Commission provided for compulsory monitoring of and reporting on lifecycle greenhouse emissions as of 2009. Furthermore, fuel suppliers will be required to offer guarantees that greenhouse gas emissions from their product for the entire life cycle drop by 1% per year between 2011 and 2020.
15. Sustainability criteria for biofuels are to be set in both cases (Directive on Renewable Sources of Energy and FQD). A working group within COREPER is drawing up a proposal for these sustainability criteria. The results of this special COREPER working group are expected for June 2008.
16. For Belgium, the EU proposed objective is 13% of renewable energy by 2020. In addition to the generation of renewable energy of 2.2% (the difference with the 2.5% from Table 1 can be explained by the share of recoverable fuels, reference year 2005), an additional effort of 5.5% (valid for all EU Member States), and of 5.3% (based on per capita GDP) must be made. As in the case of all EU Member States, the target of 10% of biofuels in the total volume of transport fuels by 2020 applies.
17. The federal government is encouraging the mixing of biofuels and fossil fuels through tax inducements. Oil companies that bring mixed fuel on the market are granted tax relief to offset the extra costs for mixing biofuels with fossil fuels (equal to an exemption of excise duties for the biofuel part), on condition that the biofuel component is bought from recognised producers (of bioethanol for petrol and FAME for diesel). The Belgian government has certified a limited number of producers for biofuels (3 for ethanol, 4 for FAME or biodiesel), and assigned an annual production quota for each of these producers for the period between 1 October 2007 and 30 September 2013. These quotas must make it possible to obtain a mixture of 5% FAME in diesel and 7% ethanol in petrol.
18. The mixing limit of the biofuel component in fossil fuel is fixed in European standards that are applicable in Belgium. The quality standards for petrol (NBN EN 228) authorise a mixture of:
- Ethanol up to a maximum 5% of the volume
 - ETBE up to a maximum of 15% of the volume (the equivalent of about 7% volume ethanol)⁴⁵
19. According to the quality standards currently in force in Belgium and in Europe, the 7% mixture of bioethanol in petrol can be reached only by mixing in ETBE form (ethanol mixing is limited to 5%). The quality standards for diesel (NBN 590) authorise a FAME mixture of at most 5% of the volume.

⁴⁵ ETBE is an ignition inhibitor that allows a higher octane content in petrol. Bioethanol can be turned to ETBE by means of a chemical process.



Graph 4: Annual quota for biodiesel (FAME)



Graph 5: Annual quota for bioethanol

20. In addition, two royal decrees are currently under preparation: a draft royal decree on compostable and biodegradable materials, and a draft royal decree on quality standards for fixed renewable fuels (such as, e.g. wood pellets). These royal decrees are intended to set quality standards for both types, and authorise and regulate alternative use.⁴⁶

Biomass: opportunities and limitations

21. The production and use of biomass has all sorts of consequences for and interfaces with various policy areas. The subject is ever topical: there are daily reports on the positive (climate, energy, the economy, etc.) and negative (climate, energy, agriculture, food problems, food prices, etc.) consequences of using biomass for energy purposes. Biomass has the potential of meeting part of the energy need and offers opportunities. At the same time, however there are reports of serious problems in the production and use of biomass.
22. Irrespective of the end use of biomass, the production thereof must in any event be carried out in as a sustainable way as possible. The FRDO-CFDD has reiterated that, in its view, the agricultural sector may not be approached as a purely economic sector. *“In addition to providing food security (through its own production and trade), agriculture also has a number of non-trade concerns (multi-functionality of agriculture) which are expressed in different types of*

⁴⁶ Explanation by Dominique Perrin (FPS of Public Health, Food Chain Security and Environment) at FRDO-CFDD.

agriculture, including: rural employment, the development of the countryside, management of natural resources, protection of cultural individuality, quality production, production according to social and environmental standards, protection of biodiversity, animal welfare and landscape management.” Failure to take such non-trade concerns into account can have negative social (e.g. loss of employment) and ecological consequences (e.g. deforestation with an impact on biodiversity, soil erosion, increasing use of pesticide). It remains crucial for developing countries to meet their food basic needs through their own production and through trade.”⁴⁷

23. The FRDO-CFDD also states that countries have the right to “*develop a sustainable, multi-functional agriculture geared in particular to the production of healthy food, to maintaining and developing sustainable production methods, to maintaining the ecosystem and fertility of the soil in the long term, to developing the quality of life in the countryside, fair compensation of all costs, including environmental costs, quality work in the sector and fair access to the means of production. In other words, agriculture must be productive concurrently from the economic, ecological and social point of view.*”⁴⁸
24. The great demand for biomass may, “*in countries with important comparative production, lead to an over-exploitation of natural resources as well as a change in production methods and techniques (rising use of pesticides and hormones, contamination hazard, etc.). How serious these negative effects will be if agriculture is liberalised depends in large measure on the regulating and institutional social and ecological framework in the different countries. Most countries with comparative advantages in agricultural production (presence of natural resources, climate, etc.) do not always have such a framework, however. An institutional framework worldwide is consequently necessary so as to limit in particular the negative economic, social and environmental effects of liberalisation and to prevent a possible downward spiral. Europe is increasingly pursuing a policy that prods farmers to internalise the concerns of citizens and consumers in their production. To make such a reorientation of agriculture possible, it is necessary to strive for a sustainable agriculture model worldwide.*”⁴⁹
25. The focus in this reflection note is on the production and use of biomass for energy purposes.

Energy certainty and energy security

26. Energy security and energy certainty are high on the agenda worldwide. The reasons are the rapidly growing demand for fossil fuels, especially from Asia, and the unstable political climate in the Middle East. These phenomena have an impact on the price and raise concerns about the availability of oil and gas. The prices of fossil commodities have risen spectacularly in the last year in particular <http://markets.ft.com/markets/commodities.asp>. A rise in oil prices leads to renewed interest (after the interest that arose during the oil crises of the 1970s) in renewable sources of energy in industrialised and developing countries alike. Together with solar and wind energy, biomass is an alternative for generating electricity, heating, transport fuel, etc. Biomass has moreover the advantage that it can be easily stored. Domestic production of biomass and the importance of bioenergy from abroad are therefore becoming more attractive in terms of energy certainty and security. Nevertheless, the trade in biomass is still limited at this time, as shown in Graph 6.

CRUDE OIL	ROTTERDAM OIL PRODUCTS
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⁴⁷ FRDO-CFDD opinion for the Hong Kong WTO ministerial conference in 2005, chapter 4.1.

⁴⁸ FRDO-CFDD opinion for the Hong Kong WTO ministerial conference in 2005, chapter 4.1.

⁴⁹ FRDO-CFDD opinion for the Hong Kong WTO ministerial conference in 2005, chapter 4.1.

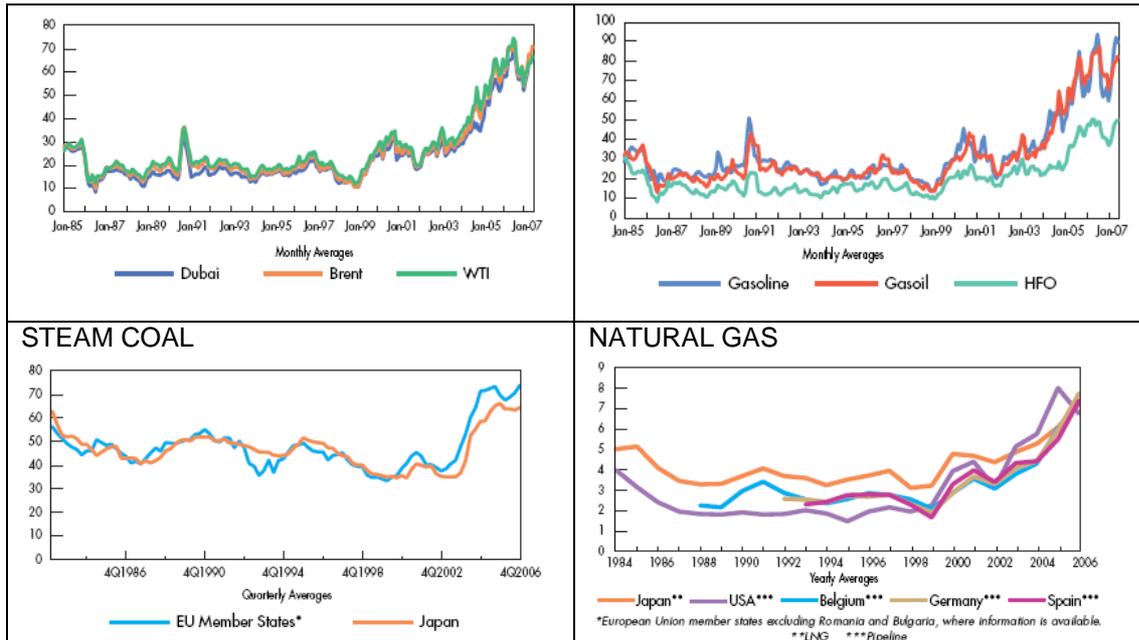
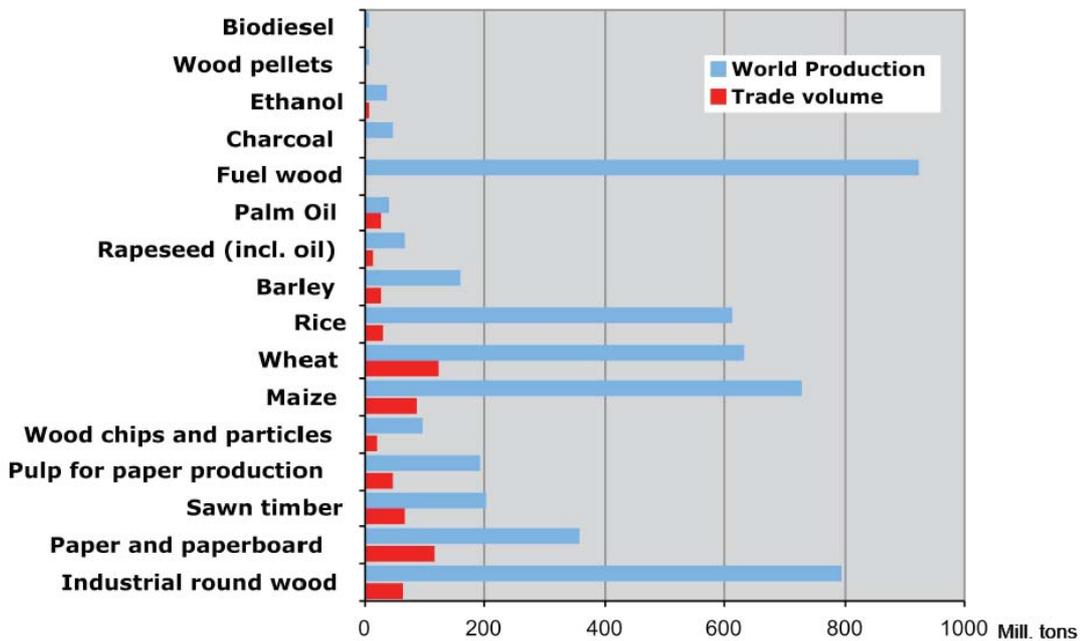


Table 2: Graphs showing price trends in fossil fuels up to 2006.

Prices rose even sharper last year. Cf. <http://markets.ft.com/markets/commodities.asp>. For an overview of price trends, cf. http://www.iea.org/textbase/nppdf/free/2007/key_stats_2007.pdf



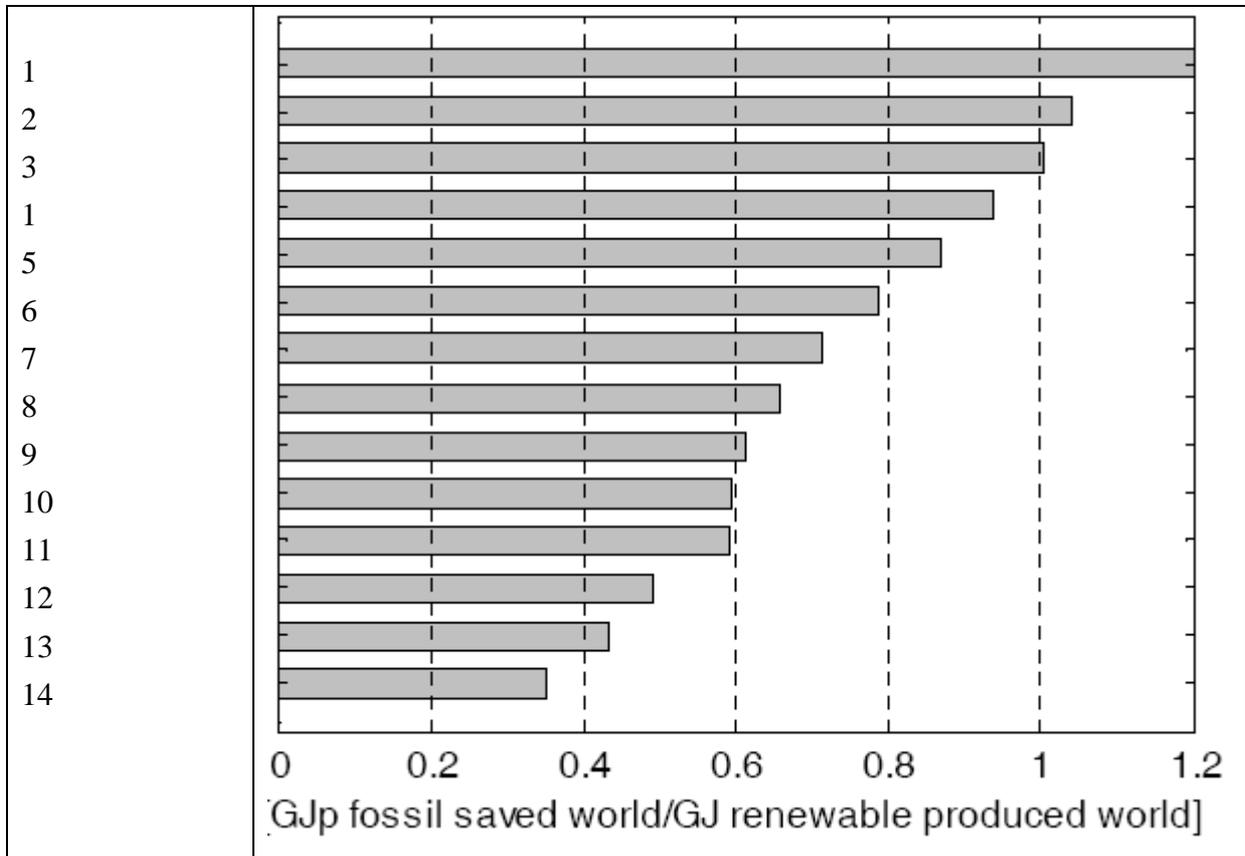
Graph 6: Worldwide production and a limited international trade volume of biomass (presentation of Justus von Geibler, FRDO-CFDD internal seminar)

27. Of importance is the investigation as to which application is the most efficient. The IEA has compared different conversion techniques.⁵⁰ Energy efficiency techniques have been examined for different scenarios in Belgium as well. Graph 7⁵¹ from this study shows the energy efficiency obtained worldwide. The energy balance appears to be positive for the various conversion techniques. The best score was obtained from converting wood to heat or to heat and electricity. The efficiency rose even over 100% by comparison with fossil alternatives. This is possible thanks to the advantages of combined heat and power (CHP) and a positive

⁵⁰ Cf. tables in Annex B

⁵¹ Cf. Scientific Policy Publication, Project CP/53 - "[Liquid biofuels in Belgium in a global bioenergy context](#)" SPSPD II - Part I - Sustainable production and consumption patterns – Energy 3/12.

balance in production and transport requirements. From the energy efficiency perspective, the use of imported ethanol and then of biodiesel (FAME, PPO, RME) follows..... Sugar beet obtains the lowest score here. This can be explained from the high energy use for distilling and drying the pulp. If the pulp is still used for energy recovery, the efficiency of this application rises slightly (not shown in the graph).



Graph 7: Cost-effectiveness of biomass applications

1: Wood for CHP (gasification and suction motor, short rotation wood); 2: Wood for heating (short rotation wood); 3: Wood for co-combustion (short rotation wood); 4: Imported ethanol; 5: Vegetal oil for FAME; 6: Rapeseed for PPO (local); 7: Wood for FT diesel (short rotation wood); 8: Rapeseed for RME (local); 9: Corn for ethanol (straw is burnt); 10: Wood for ethanol (short rotation wood); 11: Rapeseed for RME (import); 12: Corn for ethanol (straw is used for bedding); 13: Corn for ethanol (import); 14: Sugar beet for ethanol

28. The use of biomass for generating heat or combined heat and power using modern techniques generally seems to yield the most energy-efficient applications.

Opportunities for development

29. The use of biomass for energy purposes can also offer opportunities for economic development, in particular through the development of new technologies (subsequent generations of biofuels, and new and improved conversion techniques for heat and power). Enhanced demand can stimulate the agricultural sector, create jobs, and open new markets. Furthermore, the local energy needs can be met sustainably through the use of biomass. In developing countries, the production and use of biomass can thus contribute to the reduction of poverty and energy generation in areas that are difficult to access.

Climate and air quality

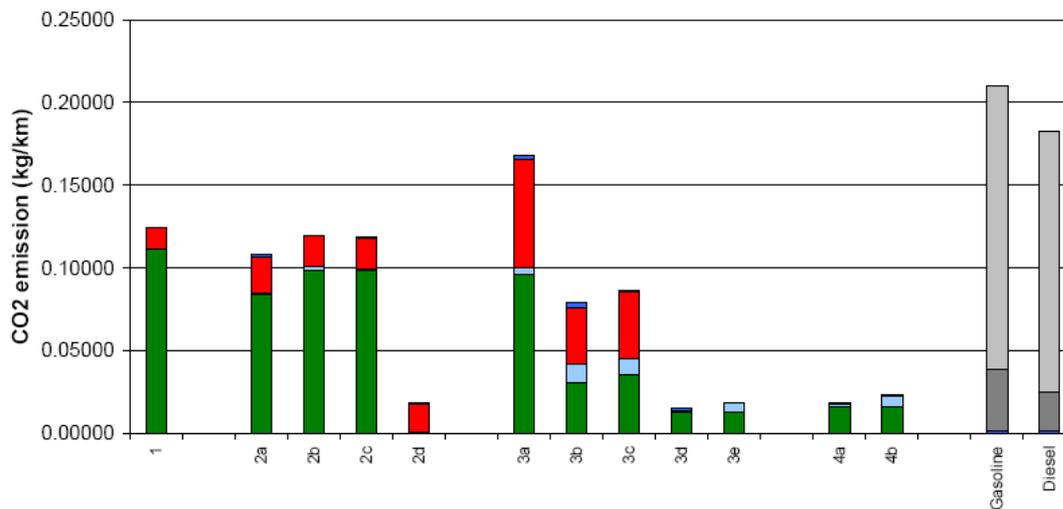
30. The EU has undertaken the commitment to reduce greenhouse gas emissions sharply. This boosted the interest in new technologies. Biomass seems a possible option. However, biomass is not completely CO₂ neutral: A quantity of fossil energy is needed for the

production, conversion and transport. If changes in land use are also taken into account, biofuels can cause higher greenhouse emissions than the fossil fuels that they replace:

- a. The conversion of low-land tropical rainforest in Indonesia and Malaysia to palm oil plantations has resulted in a carbon debt of 86 years;
- b. The production of biodiesel from soya on plantations that have replaced parts of the Amazonian forest has resulted in a carbon debt of 320 years.⁵²

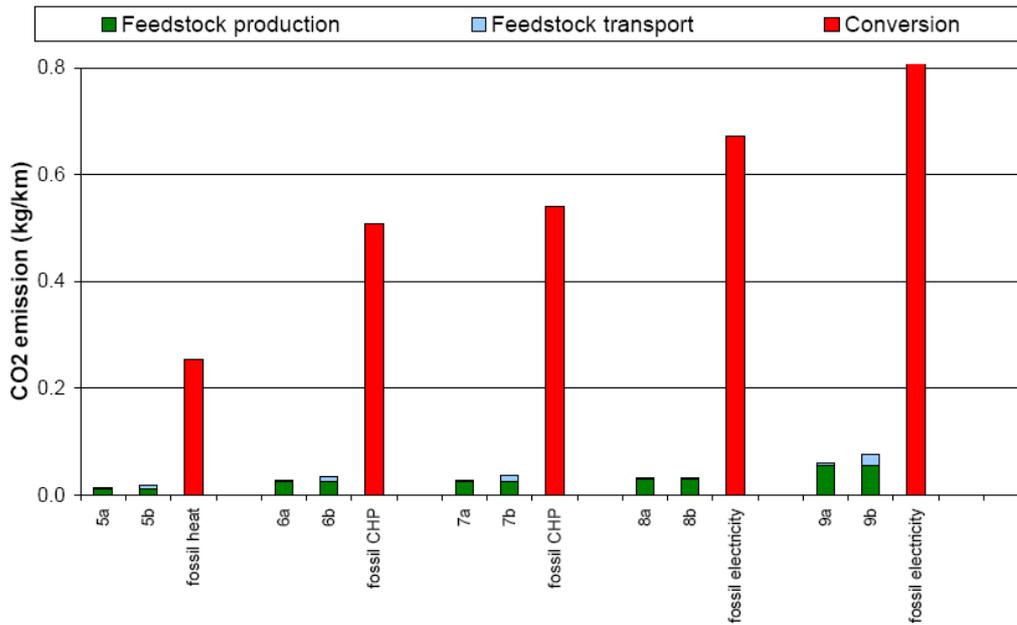
31. The layout of new plantations also increases greenhouse gas emissions, in particular through deforestation. Consequently, the land use change as a result of a rising demand for biomass is a cause of the aggravation of the current problem of worldwide deforestation. Such deforestation is responsible for about 20% of the global emissions of greenhouse gases and entails the loss of substantial carbon sinks.⁵³ There is a perverse effect, whereby tropical forests, moor lands, savannahs and steppes are disappearing – with massive accompanying greenhouse gas emissions – to make room for plantations for energy crops for the production of bioenergy, because of their (smaller) emission reduction potential. An analysis of the entire life cycle (including land use change) is therefore necessary. The potential for reducing greenhouse gases is closely connected to the energy yields and energy efficiency of the crops used.

32. Various studies from such a life-cycle approach have shown that the use of biomass, certainly when (direct and indirect) changes in land use are taken into account, does not necessarily lead to reduced emissions of greenhouse gases. Graphs 8 and 9 compare the CO₂ emissions from energy from biomass with the emissions from fossil applications, without taking land use changes into account. In Graph 8, different biofuels are compared with petrol and diesel. Graph 9 compares the emissions from combined heat and power generation with the fossil equivalent. Graph 10 shows the additional effect (direct or indirect) land use change.

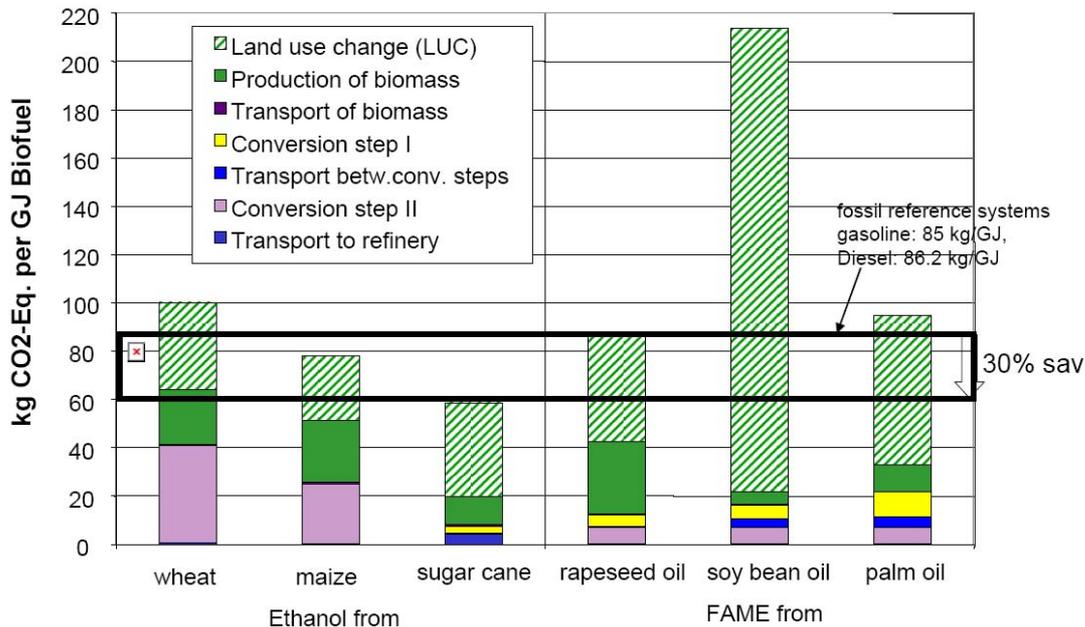


⁵² Timothy Searchinger et al., Use of US croplands for biofuels increases GHG through emissions from Land Use Change, *Science*, 7 February 2008.

⁵³ Intergovernmental Panel on Climate Change (IPCC) 2007 *Climate Change 2007: The Physical Science Basis: Summary for Policymakers* <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>



Graphs 8 and 9: Comparison of CO2 emissions from different energy sources. Cf. Scientific Policy Publication, Project CP/53 - "[Liquid biofuels in Belgium in a global bioenergy context](#)" [SPSD II - Part I - Sustainable production and consumption patterns – Energy 3/12](#). 1: PPO, 2: Biodiesel from rapeseed (a: local, b: import, c: oil import, d: frying oil), 3: Ethanol (a: corn, b: sugar beet, c: import, d: local SRF, e: import), 4=FT diesel (a: local SRF, b: import). Emissions of greenhouse gases compared with fossil emissions. 5: heat boiler, 6: ORC, 7: fixed bed gasifier/suction motor, 8: co-combustion, 9: steam cycle, a: local SRF, b: import.

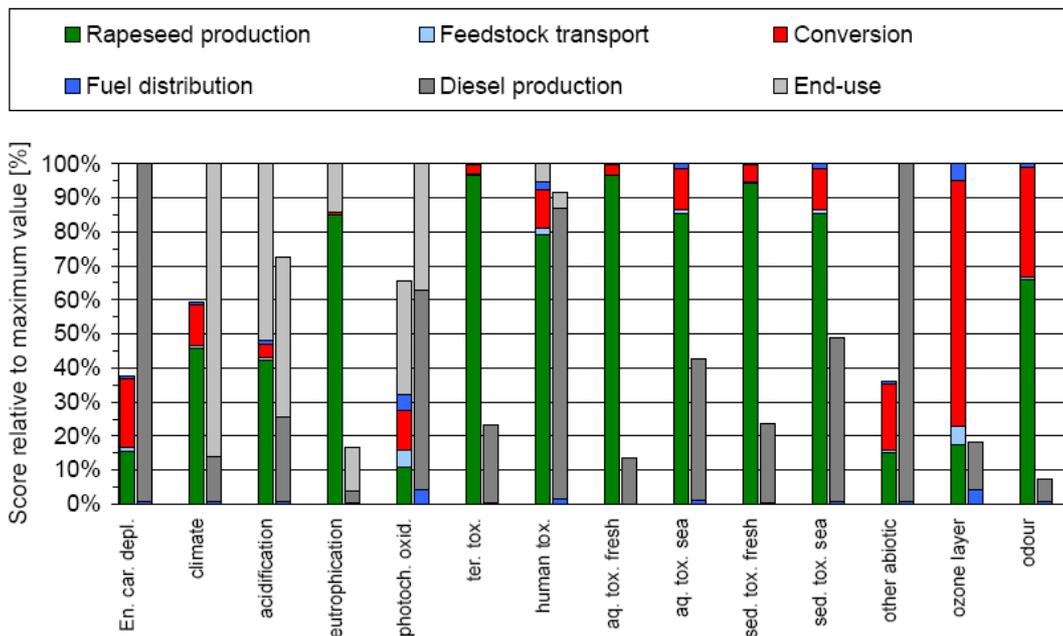


Graph 10: Comparison of CO2 emissions from different energy sources, including land use changes. Cf. presentation of Dominique Perrin at the FRDO-CFDD.

33. The use of biomass for energy purposes may also lead to an increased negative effect through emission of other harmful (sub)particles.⁵⁴ Graph 11 shows this emission of RME

⁵⁴ Cf. [Project CP/53 - "Liquid biofuels in Belgium in a global bioenergy context" SPSD II - Part I - Sustainable production and consumption patterns – Energy 3/12](#) and *Assistance with identifying environmentally beneficial ways of using biomass for energy in Europe*, Vienna University of

biodiesel by comparison with the fossil equivalent. The cited study also makes the same comparison for bioethanol from wheat and sugar beat with comparable results.



Graph 11: Emissions of harmful (sub)particles. Comparison of rapeseed-based biodiesel and normal diesel.¹⁸

Rising prices

34. The price of quite a lot of agricultural raw materials and food produces is rising worldwide. The popular tortillas in Mexico have become very expensive all of a sudden, in particular because the price for corn (maize) has risen sharply in the United States. In Morocco, olive oil, a basic ingredient in food, has never been so expensive. In addition to disappointing harvests worldwide, other causes are cited for the price rises:

- a. The European Commission mentions the greater demand from growing economies, such as China and India. An ever higher proportion of their population is achieving a greater level of prosperity, and as a result, food consumption has never been so great.
- b. In addition, the price of raw materials and production factors has also gone up, in particular through speculation, raising the prices of agricultural and food products.
- c. The damage caused to crops that year (drought, storm, etc.).

In Belgium and the EU, an increase in agricultural raw materials has had a lesser impact on prices for the consumer. Moreover, here, high energy prices caused the price of food products to go up.

Technology, Institute of Power System and Energy Economics. The UN report entitled *Sustainable Bioenergy: A Framework for Decision-makers* also cites the problem with domestic change in this connection (e.g. heating with wood).

FAO Food Price Index						
	Meat ¹	Dairy ²	Cereals ³	Oils and Fats ⁴	Sugar ⁵	Food Price Index ⁶
2000	100	106	87	72	105	93
2001	100	117	89	72	111	95
2002	96	86	97	91	88	94
2003	105	105	101	105	91	102
2004	118	130	111	117	92	114
2005	121	145	107	109	127	117
2006	115	138	125	117	190	127
2007	122	247	172	174	129	157
2007 January	118	166	147	135	141	136
February	119	176	153	136	136	139
March	121	186	152	138	134	140
April	119	213	148	150	125	142
May	119	222	150	161	121	145
June	120	252	159	170	119	151
July	120	277	160	175	131	156
August	123	287	172	181	126	162
September	124	290	196	190	125	172
October	122	297	202	202	128	176
November	126	302	204	221	130	181
December	130	295	225	226	137	190
2008 January	136	281	239	250	154	200

¹ Meat Price Index: Consists of 3 poultry meat product quotations (the average weighted by assumed fixed trade weights), 4 bovine meat product quotations (average weighted by assumed fixed trade weights), 3 pig meat product quotations (average weighted by assumed fixed trade weights), 1 ovine meat product quotation (average weighted by assumed fixed trade weights); the four meat group average prices are weighted by world average export trade shares for 1998-2000.

² Dairy Price Index: Consists of butter, SMP, WMP, cheese, casein price quotations; the average is weighted by world average export trade shares for 1998-2000.

³ Cereals Price Index: This index is compiled using the grains and rice price indices weighted by their average trade share for 1998-2000. The grains Price Index consists of International Grains Council (IGC) wheat price index, itself average of 9 different wheat price quotations, and 1 maize export quotation; after expressing the maize price into its index form and converting the base of the IGC index to 1998-2000. The Rice Price Index consists of three components containing average prices of 16 rice quotations: the components are Indica, Japonica and Aromatic rice varieties and the weights for combining the three components are assumed (fixed) trade shares of the three varieties.

⁴ Oils and Fats Price Index: Consists of an average of 11 different oils (including animal and fish oils) weighted with average export trade shares of each oil product for 1998-2000.

⁵ Sugar Price Index: Index form of the International Sugar Agreement prices.

⁶ Food Price Index: Consists of the average of 6 commodity group price indices mentioned above weighted with the average export shares of each of the groups for 1998-2000; in total 55 commodity quotations considered by FAO Commodity Specialists as representing the international prices of the food commodities noted are included in the overall index.

Table 3: FAO food price index.

35. In the meantime, the markets seem to have stabilised again.

36. In a joint report, the FAO and the OECD indicate that the growing demand for energy from biomass and biofuels in the future could lead to price rises of 20% to 50% for food products in the next 10 years.⁵⁵

⁵⁵ Cf. the presentation of Richard Doornbosch at the internal seminar of 3 October. Biofuels: is the curse worse than the disease? 'OECD-FAO Agricultural Outlook 2007-2016', Organisation for

37. The effects of price rises are mixed. On the one hand, it can be positive for farmers whose income from agricultural raw materials goes up, although there is a chance that the price rises will be offset by the rise in energy prices, manure and spray prices, rising seed and young plant costs, rising land and lease prices, poor harvests and water shortage owing to climate change, etc. The price rises are thus passed on to consumers, who must spend more money to meet the food needs. This has a great impact in developing countries in particular. It should also be borne in mind that many farmers, in Africa for instance, are not net producers but net consumers of food.
38. In developing countries in particular, the consequences vary widely for small farmers, large companies and plantation workers. The effect of price rises on poverty reduction in development countries will depend on the position that small farmers can assume in the chain. The market power of family-owned and operated farms is very limited because of the concentration of the buyers in the chain. As a result, small farmers are often price takers with regard to large customers. They have little negotiation power, no access to price information and contracts are often not transparent.
39. The little attention to and investments in the agricultural sector of developing countries from the cooperation for development of other countries, has had a negative effect on survival agriculture and the capacity of countries to produce food for their own population. The disorganisation of the agricultural sector in these countries is a very important factor that has led to the problems that are now surfacing.
40. Many developing countries depend on the export of a few agricultural raw materials for their income, which makes them very vulnerable to strong price fluctuations.
41. In industrialised countries, the higher food prices have had a rather limited impact up to now. Although the average household in Belgium spends, on average, 13% of its budget on food, there are problems for lower-income households.
42. The production of biomass for energy purposes must therefore also take into account the effects of food certainty and the environment, as well as social consequences. It must be in line with sustainable production that takes account of the challenges posed by food certainty and food security.
43. In addition to increased food prices, increased prices of biomass have also had consequences for the industrial use of biomass. A recent study has shown that the expected demand for wood in Europe as a result of the renewable energy objectives will exceed supply by far. This will have an unavoidably great impact on the European forestry sector, in particular for the sector of the wood industry, such as companies from the paper sector.⁵⁶

Land use

44. The production and use of biomass has its limits. For there is only a limited amount of land available: 1.4 billion hectares of arable land, 135 million hectares with a permanent agricultural crop, and 3.45 billion hectares of grassland. This is some 38% of the total land surface area worldwide. An increased demand for the reasons cited in [30] could bring more pressure to bear on natural resources and the environmental capital.
45. The use of biomass (wood crop or organic soil improver) can have serious consequences for the soil quality – in particular when the residual flows of forestry and agriculture are considered. This organic “residual” material is absolutely necessary to maintain the structure and fertility, as well as the storage of carbon. When these residues are removed, the nutritional properties must be replaced by other fertilisers.

46. Various structures have calculated the theoretically possible production potential of biomass for energy purposes.⁵⁷ The figures in these studies depend also on the conditions and expected developments in the crops used, and technology and production methods used. In any event, even if the farming lands are used efficiently, the production of biomass remains limited by the physical boundaries to a certain quantity.
47. A study has shown that, for Belgium⁵⁸ too, the available agricultural and forestry area can cover only a few percentage points of our energy needs. It then becomes a matter of production on agricultural land that can be cleared without affecting the current food production. This is attributable to the intensive agriculture (high demand per surface area) in Belgium, combined with the limited agricultural acreage available. The possible production potential of biomass in Europe and the rest of the world, however, offers broader possibilities.
48. With such figures on the available area, a cautious approach is needed. These are theoretical models that do not tally with reality because, in the end, the farmer himself decides what he is going to produce.
49. The internal production of the EU can certainly not meet the proposed objectives at present. Consequently, if Belgium and the EU want to achieve their objectives, certainly as regards biofuels, they will have to import biomass or bioenergy.⁵⁹ This in turn leads to more pressure on land use worldwide at this time.
50. The large-scale production of biomass, both for food production and for energy purposes, is often accompanied by intensive agricultural practices, characterised by large-scale monocultures, increased use of pesticides and fertilisers, the introduction of GMOs, intensive water use, soil depletion, etc., and often has a negative impact on the environment and the (agricultural) diversity.

Biodiversity

51. The use of biomass and, in particular, the development of biofuels have had important consequences for biodiversity. When switching to energy crops or laying out new plantations, direct and indirect land use changes cause irreparable damage to vulnerable ecosystems. These are chiefly natural and semi-natural systems that are rich in carbon, such as primary and secondary tropical forests, moor lands, savannahs (Brazilian Cerrado), meadows, steppes and water regions (the Tana River delta in Kenya). Palm oil plantations are the prime reason for the disappearance of primary wood in Indonesia and Malaysia. In addition to considerable greenhouse gas emissions, the destruction of these habitats results in a great loss of biodiversity (the survival of the Orang-utan is endangered, for instance).
52. The scale, above all, is alarming: DG AGRI⁶⁰ has pointed out that with the current objectives, by 2020, 15% of the agricultural acreage in the EU will be reserved for the production of biofuels. The commission assumes that 20% of the biofuels will be imported, and in 2020, second generation biofuels will have a share of 30%. The JRC⁶¹ points out that 10% of the EU diesel replaced by first generation biodiesel, would claim about 19% of the world production in vegetal oil. 10% ethanol in place of petrol claims about 2.5% of the world grain production. As a result, more changes are constantly taking place in land use.

⁵⁷ EEA: 16% gross energy consumption by 2030; Oko-instituut: up to 10% of EU production through sustainable agriculture. Alternative fuels contact group: up to 15%. IEA: 20% share worldwide by 2030. Technology platform on biofuels: +20% in 2030.

⁵⁸ Cf. Scientific Policy Publication, Project CP/53 - "[Liquid biofuels in Belgium in a global bioenergy context](#)" SPSPD II - Part I - Sustainable production and consumption patterns – Energy 3/12.

⁵⁹ Cf. [Project CP/53 - "Liquid biofuels in Belgium in a global bioenergy context" SPSPD II - Part I - Sustainable production and consumption patterns – Energy 3/12](#)

⁶⁰ http://ec.europa.eu/agriculture/analysis/markets/biofuel/impact042007/text_en.pdf

⁶¹ http://ec.europa.eu/dgs/jrc/downloads/jrc_biofuels_report.pdf

53. The pressure on traditional family farmers to switch to energy crops is moreover causing a loss in biodiversity, which is enormous at this moment. In Europe, 44% of birds normally found in agricultural areas disappeared between 1980 and 2005 ([birdlife international](#)). In 2008, the European Commission decided to put 10% of fallow land back to use without providing compensation for the loss of biodiversity. The intensification of agricultural practices for biofuels has also had an impact on the landscape, an impoverishment of the soil (because biomass is no longer used as a soil improver), and an impoverishment of microbiological organisms in the ground. The intensification of agriculture, and the production of biomass in particular, often go hand in hand with the introduction of GMOs.

Social issues

54. The production of raw materials often entails the violation of the land rights of the local communities and indigenous people. The UN has warned that:⁶² “The maintenance of the integrity of the forests is crucial for indigenous peoples as it represents the past, present, and future aspects of how to live in mutual reciprocity among themselves and with nature. As large-scale monoculture plantations became an integral part of the economic growth strategy of most countries, rampant expropriation or taking of indigenous lands occurred. Social conflicts associated with large-scale industrial logging (both legal and illegal) and monocropping plantations are basically conflicts about who has the right to own, use and manage the forests. The main protagonists are indigenous peoples versus the state and its machineries (military and police forces, departments of forestry, environment, mining, agriculture, local governments, etc.), the logging, plantation or carbon trading companies and sometimes even NGOs. Expanding plantations for biofuels or energy crops and for carbon sinks are recreating and worsening the same problems faced by indigenous peoples with large-scale monocropping.” The UN also warns that 60 million indigenous people who depend fully on forests for their survival are threatened by all activities that endanger said forests, including direct and indirect land conversion for the benefit of the cultivation of biofuel crops.⁶³
55. In its Global Employment Trends of 2008, the ILO mentions that “the decent work deficit in the world is still enormous. With five out of ten people in the world in vulnerable employment situations and four out of ten living with their families in poverty, despite working, the challenges ahead remain daunting. Economic progress does not automatically lead to progress in the world of work. Active engagement and the proactive decision to put labour market policies at the centre of growth and macroeconomic policies are needed to ensure that economic progress is inclusive and does not lead to increasing inequality. And, only if countries use their labour markets to make growth inclusive, will their progress have a real chance of being sustained.”⁶⁴

Food certainty and food security

56. The production of biomass on large-scale plantations also threatens family agriculture. The prime aim of said family agriculture is the production of food, and is carried out in large part by the farming population. The rush for biofuels is exerting greater pressure on farming land. There is a risk that small farmers will in the end be forced to leave their farming land, and in so doing lose their most important source of income. Together with an increase in price, this leads to an increase in food uncertainty and food insecurity.

⁶² http://www.un.org/esa/socdev/unpfii/documents/6session_crp6.doc .

⁶³ *Report of the Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people, Rodolfo Stavenhagen,*

<http://daccessdds.un.org/doc/UNDOC/GEN/G07/110/99/PDF/G0711099.pdf?OpenElement>

⁶⁴ Cf. <http://www.ilo.org/public/english/employment/strat/download/get08.pdf>.

ANNEX A Preparation of the note

Meetings held to prepare the note

The ad hoc work group on biomass drafted the note after the internal seminar of 17 October 2007. The work group met on 17 December 2007, 14 January, 18 February, 17 March, 7 April and 28 April 2008 to draw up this note.

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ANNEX B Energy efficiency: different applications

Concept	Energy efficiency (HHV) + energy inputs	
	Short-term	Long-term
Hydrogen: via biomass gasification and subsequent syngas processing. Combined fuel and power production possible; for production of liquid hydrogen additional electricity use should be taken into account.	60% (fuel only) (+ energy input of 0.19 GJe/GJ H ₂ for liquid hydrogen)	55% (fuel) 6% (power) (+ 0.19 GJe/GJ H ₂ for liquid hydrogen)
Methanol: via biomass gasification and subsequent syngas processing. Combined fuel and power production possible	55% (fuel only)	48% (fuel) 12% (power)
Fischer-Tropsch liquids: via biomass gasification and subsequent syngas processing. Combined fuel and power production possible	45% (fuel only)	45% (fuel) 10% (power)
Ethanol from wood: production takes place via hydrolysis techniques and subsequent fermentation and includes integrated electricity production of unprocessed components.	46% (fuel) 4% (power)	53% (fuel) 8% (power)
Ethanol from sugar beet: production via fermentation; some additional energy inputs are needed for distillation.	43% (fuel only) 0.065 GJe + 0.24 GJth/GJ EtOH	25-35
Ethanol from sugar cane: production via cane crushing and fermentation and power generation from the bagasse. Mill size, advanced power generation and optimised energy efficiency and distillation can reduce costs further in the longer term.	85 litre EtOH per tonne of wet cane, generally energy neutral with respect to power and heat	95 litre EtOH per tonne of wet cane. Electricity surpluses depend on plant lay-out and power generation technology.
Biodiesel RME: takes place via extraction (pressing) and subsequent esterification. Methanol is an energy input. For the total system it is assumed that surpluses of straw are used for power production.	88%; 0.01 GJe + 0.04 GJ MeOH per GJ output. Efficiency of power generation in the shorter term, 45%; in the longer term, 55%	

Conversion option	Typical capacity	Net efficiency (LHV basis)	Investment cost ranges (€/kW)	Status and deployment
Biogas production via anaerobic digestion	Up to several MWe	10-15% electrical (assuming on-site production of electricity)		Well established technology. Widely applied for homogeneous wet organic waste streams and waste water. To a lesser extent used for heterogeneous wet wastes such as organic domestic wastes.
Landfill gas production	Generally several hundred kWe	As above.		Very attractive GHG mitigation option. Widely applied and, in general, part of waste treatment policies of many countries.
Combustion for heat	Residential: 5-50 kWth Industrial: 1-5 MWth	Low for classic fireplaces, up to 70-90% for modern furnaces.	~100/kWth for logwood stoves, 300-800/kWth for automatic furnaces, 300-700/kWth for larger furnaces	Classic firewood use still widely deployed, but not growing. Replacement by modern heating systems (i.e., automated, flue gas cleaning, pellet firing) in e.g., Austria, Sweden, Germany ongoing for years.
Combined heat and power	0.1-1 MWe 1-20 MWe	60-90% (overall) 80-100% (overall)	3500 (Stirling) 2700 (ORC) 2500-3000 (Steam turbine)	Stirling engines, steam screw type engines, steam engines, and organic rankine cycle (ORC) processes are in demonstration for small-scale applications between 10 kW and 1 MWe. Steam turbine based systems 1-10 MWe are widely deployed throughout the world.
Combustion for power generation	20->100 MWe	20-40% (electrical)	2.500 –1600	Well established technology, especially deployed in Scandinavia and North America; various advanced concepts using fluid bed technology giving high efficiency, low costs and high flexibility. Commercially deployed waste to energy (incineration) has higher capital costs and lower (average) efficiency.
Co-combustion of biomass with coal	Typically 5-100 MWe at existing coal-fired stations. Higher for new multifuel power plants.	30-40% (electrical)	100-1000 + costs of existing power station (depending on biomass fuel + co-firing configuration)	Widely deployed in various countries, now mainly using direct combustion in combination with biomass fuels that are relatively clean. Biomass that is more contaminated and/or difficult to grind can be indirectly co-fired, e.g., using gasification processes. Interest in larger biomass co-firing shares and utilisation of more advanced options is increasing.
Gasification for heat production	Typically hundreds kWth	80-90% (overall)	Several hundred/ kWth, depending on capacity	Commercially available and deployed; but total contribution to energy production to date limited.
Gasification/ CHP using gas engines	0.1 – 1 MWe	15-30% (electrical) 60-80% (overall)	1.000-3.000 (depends on configuration)	Various systems on the market. Deployment limited due to relatively high costs, critical operational demands, and fuel quality.
Gasification using combined cycles for electricity (BIG/CC)	30-200 MWe	40-50% (or higher; electrical)	5.000 – 3.500 (demos) 2.000 – 1.000 (longer term, larger scale)	Demonstration phase at 5-10 MWe range obtained. Rapid development in the nineties has stalled in recent years. First generation concepts prove capital intensive.
Pyrolysis for production of bio-oil	10 tonnes/hr in the shorter term up to 100 tonnes/hr in the longer term.	60-70% bio-oil/feedstock and 85% for oil + char.	Scale and biomass supply dependent; Approx 700/kWth input for a 10 MWth input unit	Commercial technology available. Bio-oil is used for power production in gas turbines, gas engines, for chemicals and precursors, direct production of transport fuels, as well as for transporting energy over longer distances.

ANNEX C Policy at EU level

A large part of the political attention is focused on biofuels for the transport sector. The [Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels and other renewable fuels for transport](#) sets indicative objectives for the EU Member States for the replacement of fossil motor fuels by biofuels. By the end of 2010, these fuels should have a market share of 5.75%. This directive was accompanied by another Directive ([2003/96/EG](#)) of [27 October 2003](#) which authorises a tax exemption for biofuels.

A [biomass action plan followed in 2005](#). A clear link was drawn in this action plan between biomass and growth and employment (Lisbon), sustainability and globalisation. According to the Commission, it is important, in an energy policy, against the background of economic growth, to scale down the demand for energy, to make greater use of renewable energy, to stress the potential for producing energy locally and in a sustainable manner, to diversify production and to bolster international cooperation. The use of biomass can be stimulated by developing market mechanisms and by removing obstacles. The potential is estimated at 150 Mtoe by 2010 (produced sustainably). This is in line with the EU's indicative objectives to obtain 12% of energy from renewable sources by 2010; 21% if only electricity generation is considered, and 5% when biofuels are considered. This would have a favourable influence on diversification, greenhouse gas emissions reduced to 209 million tons of CO₂ equivalent, employment for 250 000 to 300 000 people, and a downward pressure on the fossil fuel price.

The biomass action plan also referred to the importance of biofuels for reducing greenhouse gas emissions in the transport sector. It was said, that in this case, it was an expensive solution, but that it would create the largest number of new jobs and secure the greatest gain in energy security. For its part, a focus on electricity generation leads to the largest reduction in greenhouse gas emissions and is most advantageous for the heating and cooling generation. The Commission did decide to stimulate each of these three areas. As to biofuels, the Commission believes that a self-sufficient approach would be neither possible nor desirable. It has preferred a balance between import and own production. Clear standards are however needed that take care of health, the environment and the objectives of the directive. It has moreover explored options to promote the use of ethanol and to reduce the demand for diesel.

The relevant [impact assessment](#) focuses above all on economic and environmental effects for boosting production and the import of biomass as an energy source. According to the impact study, benefits include: a diversification of the energy mix and energy certainty, a reduction of greenhouse gas emissions, job creation and the stabilisation of rural areas. The price tag is €2.1 to €16.6 billion, depending on the prices of fossil fuels. If the EU's objectives on bioenergy are to be achieved, it is necessary to have far more biomass on the market. This cannot really be done without a series of initiatives and measures (in particular directives of RES electricity, energy-performance buildings, biofuels for transport, tax on energy products, combined heat and power). Six main obstacles to this have been defined:

- The reticence of energy and fuel suppliers, vehicle and boiler manufacturers
- Varying levels of ambition in the Member States
- The Cost of technology
- The lack of awareness among users
- The complexity of the fuel chain
- Slow development of the market and trade

The EU's [Energy Green Paper of 8 March 2006](#) sketches a new situation on the energy front. (investments are needed, dependence is rising, stocks are getting more and more concentrated, world demand is going up, prices are going up, there is global warming, there are still no fully competing internal energy markets). The impact assessment of this green paper stresses the following items: competitiveness and the internal energy market, the need for diversification, the need for solidarity within the EU, the importance of sustainable development, innovation and technology, external policy.

The EU Commission has calculated in its [fuel strategy for 2006](#) that to achieve the objective of a 5.75% share of biofuel by 2010, some 18 Mtoe (million tons oil equivalent) are needed. In this connection, the Commission has studied three possible scenarios to meet this need:

- Scenario 1: minimum import
The Commission considers that this strategy would run up against the technical barriers of biofuel potential. It would also lead to enormous disadvantages in international trade, high costs for internal production and insufficient inducements to promote the use of biofuel worldwide.
- Scenario 2: maximum import
Use of cheap biomass through import would lower considerably the threshold for implementing the use of biomass. The disadvantage is that the environment in the production regions would come under enormous pressures.
- Scenario 3: balanced approach
The Commission sees the possibility to circumvent the problems that arise in the two previous scenarios. This scenario assumes a balance between import and own production to avoid trade problems and introduce minimum sustainability standards as a precondition for authorised biofuel.

It is clear that the Commission is aiming for the third scenario. Under this balanced approach, the Commission expects that

- The price dynamics of energy crops can be taken care of;
- The largest part will come from own production;
- The developing countries will also get the opportunity to become a player on the EU market;
- Deforestation and the destruction of habitats will be avoided.

The commission's own [impact assessment](#) for the EU strategy for biofuel states that "there will be increasing pressures on eco-sensitive areas, notably rainforests, where several millions of hectares could be transformed into plantations". A free-trade scenario (maximum import) will have the greatest impact. A business-as-usual scenario (minimum import) would have minimum effects. But the impact assessment moreover indicates that "these effects are likely to occur regardless of EU policy towards biofuels, as increased demand from elsewhere (China, Japan) will have similar effects. However, EU demand will add to and magnify these effects". In other words: the EU is not the only player and if negative effects are to be avoided, international arrangements will have to be made.⁶⁵

A number of decisions about the European energy policy were taken at the spring summit of the European heads of government in early March 2007:

- A binding target figure of 20% for renewable energy in the total energy use by 2020;
- A binding minimum target figure of 10% that all Member States have to achieve for the share of biofuels by 2020;
- A commitment to reduce greenhouse gas emissions by at least 20% by 2020, compared with 1990, and even by 30% if other major powers cooperate; and finally
- 20% energy savings by 2020.

On 23 January 2008, the European Commission published a [proposal for a new Directive on the promotion of use of energy from renewable sources](#). These objectives were confirmed and the necessary attention was paid to biomass and biofuels in that proposal. A number of sustainability criteria were included in Article 15:

- there must be a minimum CO₂ reduction of 35% for biofuels;
- biofuels may not be produced from biomass stemming from forests where there has been no human activities, areas designated for nature protection purposes and highly diverse grassland, and from areas with a high CO₂ concentration.
- Biomass that is produced in Europe for biofuels must be harvested according to the European environmental regulations and the Code of Good Practices.

If the biofuels meet these conditions, they are included in the EU's objectives for renewable energy. Article 15, point 6 states that "*Member States shall not refuse to take into account, for the purposes*

⁶⁵ CEC (2006) An EU strategy for biofuels. Com (2006) 34 final. The IA is attached as SEC (2006) 142.

referred to in paragraph 1, biofuel and other bioliquids obtained in compliance with this Article, on other grounds of sustainability.” Member States may therefore not refuse to include biofuels in the objectives of the EU on the grounds of other sustainability criteria. The Commission will produce a report on what is needed in order to draw up a sustainability scheme for energy from biomass, other than biofuels and bioliquids, by 31 December 2010. Where appropriate, this report will include proposals for a sustainability scheme for other energy applications of biomass. To verify which biomass qualifies, the Commission mentions verification measures in article 16 (by requiring economic operators to use a mass balance system in each Member State) that will be assessed in 2010.

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APPENDIX 2: RSPO, RSB, FSC, PEFC

The FRDO-CFDD does not address the expediency or credibility of these certification systems.

Roundtable on Sustainable Palm Oil (RSPO)

The demand for palm oil has risen sharply since 1990. To meet this demand, the acreage of the plantations has increased by half. At the end of the 1990s, major forest fires and social conflicts with the local population were related with the expansion of these plantations. The producers of palm oil are aware that the palm oil industry must grow in a sustainable manner. To this end, the Roundtable on Sustainable Palm Oil (RSPO) was established, an initiative by producers, traders and users of palm oil who represent an international group with banks, investors, environmental organisations and social organisations. The working group's tasks are to:

- Develop criteria for the sustainable production and use of palm oil;
- Pursue demonstration projects for promoting sustainable applications;
- Seek solutions to practical problems for the implementation and supervision of sustainable applications for plantations, trade, and logistics;
- Obtain funds for the financing of projects;
- Carry out communication;

In 2006, "RSPO Principles and Criteria for Sustainable Palm Oil Production" was published. Sustainability is shown on the basis of 8 principles and 37 criteria that must be verified by an independent organisation. A Verification Working Group monitors the process of audits. See table:

<p>Principles and Criteria RSPO for sustainable palm oil production, Annex 14, Draft 'Overview of recent developments in sustainable biomass certification, IEA Bioenergy Task 40, van Dam J., Junginger M., Faaij A., Jürgens I., Best G., Fritsche U., December 2006</p> <p>Principle 1: Commitment to transparency</p> <ul style="list-style-type: none">- Criterion 1.1 Oil palm growers and millers provide adequate information to other stakeholders on environmental, social and legal issues relevant to RSPO Criteria, in appropriate languages & forms to allow for effective participation in decision-making- Criterion 1.2 Management documents are publicly available, except where this is prevented by commercial confidentiality or where disclosure of information would result in negative environmental or social outcomes. <p>Principle 2: Compliance with applicable laws and regulations</p> <ul style="list-style-type: none">- Criterion 2.1: There is compliance with all applicable local, national and ratified international laws and regulations- Criterion 2.2: The right to use the land can be demonstrated, and is not legitimately contested by local communities with demonstrable rights.- Criterion 2.3: Use of the land for oil palm does not diminish the legal rights, or customary rights, of other users, without their free, prior and informed consent. <p>Principle 3: Commitment to long-term economic and financial viability</p> <ul style="list-style-type: none">- Criterion 3.1 There is an implemented management plan that aims to achieve long-term economic and financial viability. <p>Principle 4: Use of appropriate best practices by growers and millers</p> <ul style="list-style-type: none">- Criterion 4.1 Operating procedures are appropriately documented and consistently implemented and monitored.- Criterion 4.2 Practices maintain soil fertility at, or where possible improve soil fertility to, a level that ensures optimal and sustained yield.- Criterion 4.3 Practices minimize and control erosion and degradation of soils.- Criterion 4.4 Practices maintain the quality and availability of surface and ground water.- Criterion 4.5 Pests, diseases, weeds and invasive introduced species are effectively managed using appropriate Integrated Pest Management (IPM) techniques.- Criterion 4.6 Agrochemicals are used in a way that does not endanger health or the environment. There is no prophylactic use, and where agrochemicals are used that are categorized as World Health Organization Type 1A or 1B, or are listed by the Stockholm or Rotterdam Conventions, growers are actively seeking to identify alternatives, and this is documented.- Criterion 4.7: An occupational health and safety plan is documented, effectively communicated and implemented.- Criterion 4.8: All staff, workers, smallholders and contractors are appropriately trained. <p>Principle 5: Environmental responsibility and conservation of natural resources and biodiversity</p> <ul style="list-style-type: none">- Criterion 5.1: Aspects of plantation and mill management that have environmental impacts are identified, and plans to mitigate the negative impacts and promote the positive ones are made, implemented and monitored, to demonstrate continuous improvement.- Criterion 5.2 The status of rare, threatened or endangered species and high conservation value habitats, if any, that exist in the plantation or that could be affected by plantation or mill management, shall be identified and their conservation taken into account in management plans and operations.- Criterion 5.3 Waste is reduced, recycled, re-used and disposed of in an environmentally and socially responsible manner.- Criterion 5.4 Efficiency of energy uses and use of renewable energy is maximized.



- Criterion 5.5 Use of fire for waste disposal and for preparing land for replanting is avoided except in specific situations, as identified in the ASEAN guidelines or other regional best practice.
 - Criterion 5.6: Plans to reduce pollution and emissions, including greenhouse gases, are developed, implemented and monitored.
- Principle 6: Responsible consideration of employees and of individuals and communities affected by growers and mills**
- Criterion 6.1: Aspects of plantation and mill management that have social impacts are identified in a participatory way, and plans to mitigate the negative impacts and promote the positive ones are made, implemented and monitored, to demonstrate continuous improvement.
 - Criterion 6.2 There are open and transparent methods for communication and consultation between growers and/or millers, local communities and other affected or interested parties.
 - Criterion 6.3 There is a mutually agreed and documented system for dealing with complaints and grievances, which is implemented and accepted by all parties.
 - Criterion 6.4: Any negotiations concerning compensation for loss of legal or customary rights are dealt with through a documented system that enables indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.
 - Criterion 6.5 Pay and conditions for employees and for employees of contractors always meet at least legal or industry minimum standards and are sufficient to meet basic needs of personnel and to provide some discretionary income.
 - Criterion 6.6: The employer respects the right of all personnel to form and join trade unions of their choice and to bargain collectively. Where the right to freedom of association and collective bargaining are restricted under law, the employer facilitates parallel means of independent and free association and bargaining for all such personnel.
 - Criterion 6.7 Child labour is not used. Children are not exposed to hazardous working conditions. Work by children is acceptable on family farms, under adult supervision, and when not interfering with education programs.
 - Criterion 6.8: The employer shall not engage in or support discrimination based on race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, or age.
 - Criterion 6.9 A policy to prevent sexual harassment and all other forms of violence against women and to protect their reproductive rights is developed and applied.
 - Criterion 6.10 Growers and millers deal fairly and transparently with smallholders and other local businesses.
 - Criterion 6.11 Growers and millers contribute to local sustainable development wherever appropriate.
- Principle 7: Responsible development of new plantings**
- Criterion 7.1 A comprehensive and participatory independent social and environmental impact assessment is undertaken prior to establishing new plantings or operations, or expanding existing ones, and the results incorporated into planning, management and operations.
 - Criterion 7.2 Soil surveys and topographic information are used for site planning in the establishment of new plantings, and the results are incorporated into plans and operations.
 - Criterion 7.3 New plantings since November 2005 (which is the expected date of adoption of these criteria by the RSPO membership), have not replaced primary forest or any area containing one or more High Conservation Values.
 - Criterion 7.4 Extensive planting on steep terrain, and/or on marginal and fragile soils, is avoided.
 - Criterion 7.5 No new plantings are established on local peoples' land without their free, prior and informed consent, dealt with through a documented system that enables indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.
 - Criterion 7.6 Local people are compensated for any agreed land acquisitions and relinquishment of rights, subject to their free, prior and informed consent and negotiated agreements.
 - Criterion 7.7 Use of fire in the preparation of new plantings is avoided other than in specific situations, as identified in the ASEAN guidelines or other regional best practice.
- Principle 8: Commitment to continuous improvement in key areas of activity**
- Criterion 8.1 Growers and millers regularly monitor and review their activities and develop and implement action plans that allow demonstrable continuous improvement in key operations.

Roundtable on Sustainable Biofuels (RSB)

The **Roundtable on Sustainable Biofuels** is an international initiative that brings together farmers, companies, NGOs, experts, governmental authorities and intergovernmental organisations that want to ensure the sustainability of production and processing of biofuels. The roundtable organises a number of meetings, teleconferences and online discussions to arrive at a global multi-stakeholder consensus on principles and criteria for a sustainable biofuel production by June 2008. Cf. <http://cgse.epfl.ch/page65660-en.html>.

FSC and PEFC

FRDO-CFDD opinion on the circular for sustainably extracted wood:

[14] The *Forest Stewardship Council* is an international non-governmental organisation (NGO) that is supported by numerous social organisations and environmental movements, wood importers, merchants and processes, foresters and forest groupings, organisations for the rights of indigenous peoples, etc. The task of the FSC consists of promoting forest management worldwide that is



ecologically responsible, has a social dimension and is economically feasible. Participation is on a voluntary basis. The FSC has drawn up a list of 10 principles and 56 criteria for responsible forestry. These apply to all types of forest. They are always adapted to the local situation by a national or regional FSC working group.

[15] The *PEFC Council* is an independent, non-profit, non-governmental organisation. It promotes the certification of sustainable forest management that is assessed by an independent third party. To promote forestry (and to fix the regional policy measures), the PEFC relies on the criteria set by the Ministerial conferences for the protection of forests in Europe held in Helsinki (1993), Lisbon (1998) and Vienna (2003). These criteria have led to 35 indicators and 44 recommendations.

(VBO) The international conferences of Rio in 1992 and of Helsinki in 1993, as well as the Lisbon ministerial conference in 1998 on the protection of European forests have led to the establishment of European indicators and criteria for the sustainable management of forests. These indicators and criteria serve as a basis for numerous national forest policies in Europe, and constitute the basis of forest sustainable management and certification systems.

The two main certification systems are:

- The Programme for the Endorsement of Forest Certification Schemes (PEFC): this system certifies that national certifications meet the criteria of the international PEFC, itself based on criteria established at international level. In 2007, the PEFC represented 70% of the acreage certified at national level.
- The Forest Stewardship Council (FSC) is organised round an international accreditation body, which sets modular international criteria at national level and accredits verifiers. In 2007, the FSC represented 24% of the acreage certified at world level.

The criteria for sustainable forest management are based on 6 major planks:

1. Conservation and improvement of forest resources and their contribution to the world carbon cycles;
2. Maintenance of the health and vitality of forest ecosystems;
3. Maintenance and encouragement of forest production functions (wood and non wood);
4. Maintenance, conservation and appropriate improvement of biodiversity in forest ecosystems;
5. Maintenance and appropriate improvement of the protection functions in forest management (as regards the soil and water);
6. Maintenance and other benefits and socio-economic conditions (VBO)



APPENDIX 3: Initiatives in EU Member States

Netherlands: Sustainability criteria in the Cramer report

In the Netherlands, after a broad social discussion, six themes were fixed in the Netherlands for sustainability criteria for biomass⁶⁶:

- *The greenhouse balance must be positive*: the net emission reduction compared to the fossil reference is at least 30% for biofuels and 50-70% for electricity generation. These must be tested using computing methodology. Greenhouse gas performance is measured over the entire chain (including application) and is therefore dependent on the fossil reference.
- *Biomass production for energy may not endanger the food supply and local biomass applications (energy, medicines and building materials)*. It is therefore necessary to obtain an insight into the change in land use and the prices of food and land in the region and, at the request of the Dutch government, reporting is required to support monitoring at national level.
- *Biomass production must not be at the expense of protected or vulnerable species and strengthen biodiversity where possible*. It is necessary to check that: there are no violations of national rules and laws, no encroachment on biodiversity in protected areas with a high biodiversity value, maintenance or repair of biodiversity in biomass production units, strengthening biodiversity where possible.
- *In the production and processing of biomass, soil, water and air quantity must be maintained or improved*. This is tested on the basis of the following indicators: no violation of national rules and laws, application of best practices, use of residual products is not contrary to other local functions for the preservation of the soil, no water used from non-renewable sources, no fires as part of the layout or management of biomass production units.
- *Production of biomass contributes to local welfare*. To test this, a positive contribution is expected from specific company activities to the local economy and local business, and reporting is expected on the basis of a number of economic performance indicators of the *Global Reporting Initiative*
- *Production of biomass contributes to the well-being of employees and the local population*. This must be checked on the basis of the following criteria: no negative effects on the working conditions of workers and human rights, no violation of official ownership and use, and ordinary law, positive contribution to the well-being of the local population, no violation of integrity.

United Kingdom: Sustainability reporting under the Renewable Transport Fuel Obligation in the UK

In the UK, thought is currently given only to a system for biofuels for transport applications. Work commenced on 2006, and the system is expected to be operational in April 2008. A reporting obligation has been introduced, but there are no minimum requirements to be met. The reported data are made public, so as to bring a certain moral pressure to bear. There is also monthly reporting with more confidential data, as well as a yearly report available to the public. For the environment, the important criteria are rapeseed storage, biodiversity, soil and water quality and air pollution. Furthermore, reporting is required on weather conditions and land rights. There are no other social criteria included, because then there are problems with the rules of the World Trade Organisation (WTO). An effort is made to integrate existing systems as much as possible. The government has proposed sustainability objectives. If these are not attained, more compulsory measures will be considered.

Germany and France

⁶⁶ Cf. Ella Lammers's presentation at the FRDO-CFDD and Stefanie Huglier's *note on Certification*.



In Germany, the discussion is focussed on the *Entwurf der Biomassenachhaltigkeitsverordnung* [Draft biomass sustainability regulation] and France announced a pause in the use of 1st generation fuels, and wants social and environmental criteria for (imported) biofuels of subsequent generation.

Green Electricity Labelling in the EU

Criteria have been set in a number of European countries to attribute a label to green electricity. Green Electricity labelling goes further by setting additional criteria. These criteria often pertain to biomass because large-scale application can have an impact on the environment. There are already 11 labels for green electricity:

1. Eugene Standards – Europe
2. Austrian Ecolabel – Austria
3. Bra Miljöval - Sweden
4. Ecoenergie - Finland
5. Gruener Strom Label – Germany
6. ok-power – Germany
7. Milieukeur – Netherlands
8. Naturemade – Switzerland
9. Green Power – Australia
10. Green-e – USA
11. Environmental Choice - Canada

APPENDIX 4: Social criteria and criteria for the right to food

The following list of social principles and criteria for sustainable biofuel production has been derived wherever possible with reference to relevant international law and conventions. It also references existing sustainability standards. Principles in bold are fundamental.

Principle	Criteria	Relevant Agreements ⁶⁷	Comment
Compliance with national laws and ratified international laws (whichever are better) on employment conditions and workers' rights	Applicant must comply with all national laws and ratified international laws (whichever are better) concerning employment conditions and workers' rights		Production must be compliant with relevant laws and ratified conventions, and should exceed them as necessary in order to meet subsequent criteria.
Employees are provided with fair legal contracts	Applicant must provide all types of employee (including temporary workers) with a fair legal contract in which relevant criteria below are registered	International Agreements: ▪ ILO Convention 110	
Workers are informed about their rights	Applicant must show evidence that all workers are informed about their rights, including bargaining rights.	International Agreements: ▪ ILO Convention 87 ▪ ILO Convention 98	Companies and plantations must inform workers of their rights and provide them with the necessary means to exercise these rights.
	Applicant must show evidence of a mutually agreed and documented system for dealing with complaints and grievances which is implemented and accepted by all parties.	Sustainability Standards: ▪ FSC ▪ RSPO ▪ Basel Criteria	
Proper subcontracting	Applicant must demonstrate that any subcontractors are properly licensed and provide services meeting the same criteria as those listed here	International Agreements: ▪ ILO Convention 181 ▪ ILO Convention 110	A large proportion of plantation agriculture is subcontracted through gangmasters, resulting in exploitation and bonded labour in the worst cases.

⁶⁷ CEAFRD Convention on the Elimination of All Forms of Racial Discrimination
 ICCPR International Covenant on Civil and Political Rights
 ICESCR International Covenant on Economic, Social and Cultural Rights
 ILO International Labour Organization of the United Nations
 UDHR Universal Declaration of Human Rights
 UNCRC United Nations Convention on the Rights of the Child
 UNDRIP United Nations Declaration on the Rights of Indigenous Peoples
 UNNRTC United Nations Norms on Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights



Principle	Criteria	Relevant Agreements	Comment
Freedom of association and right to collective bargaining	Applicant must guarantee the rights of workers to organise and negotiate their working conditions. Workers exercising this right should not be discriminated against or suffer repercussions. Where this is restricted by law, employers should facilitate alternative independent means of free association and collective bargaining.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 87 ▪ ILO Convention 98 ▪ ILO Convention 110 ▪ ILO Convention 141 ▪ ICCPR Article 22 ▪ ICESCR Article 8 ▪ UDHR Article 23(4) ▪ UNNRTC Section D 9 Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ FSC ▪ Basel Criteria 	Freedom of association is a fundamental human right recognise in the Universal Declaration of Human Rights and also recognised in various ILO conventions including fundamental conventions.
Working hours are not excessive	Working hours comply with national laws, and benchmark industry standards, whichever affords greater protection. In any event, workers shall not on a regular basis be required to work in excess of 8 hours per day. Overtime shall be voluntary, shall not be demanded on a regular basis, and shall always be compensated at a premium rate. Workers will enjoy in every period of seven days a period of rest comprising at least 24 consecutive hours.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 1 ▪ ILO Convention 110 ▪ ICESCR Article 7 (d) ▪ UDHR Article 24 	
No discrimination	There is no discrimination (distinction, exclusion or preference) practised that denies or impairs equality of opportunity, conditions, or treatment based on individual characteristics and group membership or association. For example, on the basis of: race, caste, nationality, religion, disability, gender, sexual orientation, union membership, political affiliation, age, marital status, working status (i.e. temporary, migrant, seasonal), HIV/AIDS.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 100 ▪ ILO Convention 111 ▪ ICESCR Article 2 and Article 7 (a) ▪ ICCPR Article 2 ▪ UDHR Article 23 (2) ▪ UNDRIP various Articles Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	Based upon an ILO fundamental convention and internationally recognised human rights



Principle	Criteria	Relevant Agreements	Comment
<p>Fair wages and compensation rules</p>	<p>Workers must be paid wages at least equivalent to the legal national minimum wage or the relevant industry standard, whichever is higher. In any event, wages should always be enough to meet basic needs and to provide some discretionary income.</p>	<p>International Agreements:</p> <ul style="list-style-type: none"> ▪ ILO Convention 95 ▪ ILO Convention 110 ▪ ICESR Article 7 (a) ▪ UDHR Article 23 (3) ▪ UNNRTC Section D 8 <p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	
	<p>All workers should be informed of their wages before entering into employment, and at each pay period.</p>		
	<p>Workers must be paid in cash, or in a form that is convenient to them, in a regular and timely manner.</p>		
	<p>The applicant should pay the workers for unproductive time due to conditions beyond their control.</p>		
	<p>Deductions from wages as a disciplinary measure are not permitted nor shall any deductions from wages not provided for by national law be permitted without the expressed permission of the worker concerned. All disciplinary measures should be recorded.</p>		
	<p>Housing and other benefits shall not be automatically deducted from the minimum wage/or relevant industry wage as a payment in kind.</p>		
	<p>In instances of piecework, the pay rate must permit the worker to earn at least the minimum wage or relevant industry standard (whichever is higher) during normal working hours and under normal working conditions.</p>		



Principle	Criteria	Relevant Agreements	Comment
<p>No forced labour</p>	<p>The applicant does not engage in or support forced labour, including bonded labour. The company does not retain any part of workers' salaries, benefits, property or documents in order that they remain in production. The company must also refrain from any form of physical or psychological measure in order to keep workers employed. Workers are free to leave their employer after reasonable notice. Spouses and children of contracted workers cannot be required to work in production.</p>	<p>International Agreements:</p> <ul style="list-style-type: none"> ▪ ILO Convention 29 ▪ ILO Convention 105 ▪ ILO Convention 110 ▪ ICESCR Article 6 ▪ ICCPR Article 8 ▪ UDHR Article 4 ▪ UNNRTC Section D 5 <p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ Basel Criteria 	<p>Based upon an ILO fundamental convention and internationally recognised human rights</p>
<p>No child labour</p>	<p>Applicant must guarantee that no children below the age of 15 are employed, and that no hazardous or dangerous work is carried out by workers under the age of 18.</p>	<p>International Agreements:</p> <ul style="list-style-type: none"> ▪ ILO Convention 138 ▪ ILO Convention 182 ▪ ICESCR Article 10 (3) ▪ UNCRC Article 32 ▪ UNNRTC Section D 6 <p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	<p>Based upon two ILO fundamental conventions and internationally recognised human rights</p>
<p>Access to ground and surface water is not diminished through either depletion or pollution.</p>	<p>Evidence of compliance with national and local regulations or industry standards relevant to contamination and depletion of water sources with respect to:</p> <ul style="list-style-type: none"> • Waster storage and handling • Pesticides and agro-chemicals • Fertilisers • Irrigation and water usage • Mill effluent <p>Documented water management plan and annual documentation of applied Good Agricultural Practices with respect to efficient water use, responsible use of agro-chemicals, waste discharge.</p>	<p>International Agreements:</p> <ul style="list-style-type: none"> ▪ ICESCR Article 12 ▪ Stockholm Convention ▪ UNNRTC Section E 12 <p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	<p>Water stress will be one of the most significant challenges faced by agriculture in coming years, and many biofuel crops are particularly thirsty, requiring extensive irrigation. The impacts of such practices on surrounding communities can be severe.</p>



Principle	Criteria	Relevant Agreements	Comment
Air quality is maintained	Evidence of compliance with national and local regulations and Good Agricultural Practice with respect to: <ul style="list-style-type: none"> • Air Emissions • Waste management • Burning practices 	International Agreements: <ul style="list-style-type: none"> ▪ ICESCR Article 12 ▪ Stockholm Convention Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	Indiscriminate spraying of agrochemicals or burning practices can have serious implications for the health of nearby communities and workers.
	Evidence that no burning occurs as part of land clearing, harvesting or waste disposal.		
Soil conservation	Evidence of compliance with national and local regulations and Good Agricultural Practice with respect to: <ul style="list-style-type: none"> • Waste storage • Pesticides and agro-chemicals • Fertiliser • Soil erosion 	International Agreements: <ul style="list-style-type: none"> ▪ ICESCR Article 12 ▪ Stockholm Convention ▪ UNNRTC Section E 12 Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	
Health & Safety	All applicants are required to meet basic needs including potable water, clean toilet facilities, a clean place to eat and store food, adequate protective equipment, and access to adequate (physically and financially) medical care. Accommodation, where provided, shall be clean, safe, and meet the basic needs of the workers.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 155 ▪ ILO Convention 161 ▪ ILO Convention 184 ▪ ILO Convention 110 ▪ ICESCR Article 7 (b) ▪ UNNRTC Section D 7 Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ FSC ▪ Basel Criteria 	Health and safety standards on plantations or in processing plants may be seriously lacking, particularly regarding use of dangerous chemicals, or access to basic needs such as water.
	All applicants must ensure workers and smallholders receive regular health & safety training appropriate to the work they perform.		
	The applicant shall assign responsibility for health & safety to a senior management representative.		



	All applicants must identify hazards and inform workers and smallholders accordingly, and also adopt appropriate preventative measures to minimise hazards. All applicants must maintain records of accidents.		
Responsible use of chemicals	<p>No evidence of adverse effects of chemical use upon workers, smallholders or nearby communities.</p> <p>No evidence of pollution of soil, air or water through chemical use.</p> <p>Compliance with the FAO International Code of Conduct on the Distribution and Use of Pesticides.</p> <p>Compliance with the Stockholm Convention on the list of forbidden chemicals.</p>	<p>International Agreements:</p> <ul style="list-style-type: none"> ▪ Stockholm Convention ▪ FAO Code of Conduct on the Distribution and Use of Pesticides ▪ ICESCR Article 12 <p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	
Plantations, mills and distilleries should deal fairly with smallholders and other local businesses	<p>Evidence that all parties understand contractual agreements they enter into, and that contracts are fair, legal and transparent, and that all costs, fees and levies are explained and agreed in advance.</p> <p>Current and past prices for produce are publicly available.</p> <p>Pricing mechanisms for produce, inputs and services are clearly documented.</p> <p>Agreed payments to suppliers and smallholders are made in a timely manner.</p> <p>Debt repayment schemes are fully transparent and operate on a fair rate of interest.</p> <p>There is no discrimination between men and women smallholders in any of the above.</p>	<p>Sustainability Standards:</p> <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria 	<p>The potential of equitable smallholder agriculture to contribute to rural poverty alleviation is widely recognised. However, whilst many biofuel crops may be suitable for smallholder cultivation, smallholders face huge power imbalances when dealing with large agribusiness or plantations. Consequently, they are easily exploited.</p> <p>In order the small farmers might benefit from biofuel production, and to avoid scenarios in which they get caught in cycles of debt, standards that require large companies to treat farmers fairly and transparently are needed.</p>



Principle	Criteria	Relevant Agreements	Comment
Free, Prior and Informed Consent	The right to use the land can be demonstrated and is not legitimately contested by local communities with demonstrable legal or customary rights.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 169 ▪ UNDRIP Article 10 and Article 32(2) ▪ ICESCR Article 1 (1) ▪ ICCPR Article 1 (1) ▪ CEAFRD Article 5 (c) ▪ UDHR Article 17 Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ Basel Criteria for Soy ▪ FSC 	The right to Free, Prior and Informed Consent is widely acknowledged in international law, conventions and declarations. For example the UN Committee on the Elimination of Racial Discrimination, which interprets the International Convention on the Elimination of Racial Discrimination, has recommended that to fulfil their obligations under the Convention, states should “ensure that members of indigenous peoples have equal rights in respect of effective participation in public life and that no decisions directly relating to their rights and interests are taken without their informed consent.” Free, Prior and Informed Consent is also explicitly recognised in the UN Declaration on the Rights of Indigenous Peoples and ILO Convention 169.
	Local people are compensated for any agreed land acquisitions and relinquishment of rights, subject to their free, prior and informed consent and agreements negotiated through their own institutions.		
	Use of the land for biomass cultivation does not diminish the legal rights, customary rights or traditional rights of other users without their free, prior and informed consent.		
Consultation and communication with local communities	There are documented and implemented policies and procedures for open and transparent communication with local communities and other affected stakeholders before commencement of any project and on an ongoing basis on for example, plans for expansion, construction, sale of the plantation, restructuring etc.	International Agreements: <ul style="list-style-type: none"> ▪ ILO Convention 169 ▪ UNDRIP Article 10 and Article 32(2) ▪ ICESCR Article 1 (1) ▪ ICCPR Article 1 (1) Sustainability Standards: <ul style="list-style-type: none"> ▪ RSPO ▪ FSC ▪ Basel Criteria 	It is also inherent to other human rights reflected in international law, including the right to development and the right to self-determination as set out in the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, and the UN Charter.

Finally, it is important to note that certification schemes and standards, such as that proposed by the Commission for biofuels can represent a significant barrier to entry for smallholder farmers, either because the standards are developed with plantations in mind, or because the farmers lack the resources or other means necessary to engage with audit processes and ensure compliance. Therefore inadvertently, certification schemes may prevent smallholder farmers from engaging with new markets and lifting themselves out of poverty.

It is therefore absolutely critical that any set of standards, whether for environmental or social criteria, provide provisions for smallholders, such as specially designed criteria, financial support, or group certification schemes.



Food Security

The Right to Food is a fundamental human right recognised in international law, most notably in Article 11 of the Covenant on Economic, Social and Cultural Rights. Furthermore, the first Millennium Development Goal aims to reduce by half the people living in hunger by 2015⁶⁸ to which the EU has repeatedly committed itself. The 2006 progress report however found that the number of people going hungry in the developing world was increasing. Things are now getting worse. Current high food prices are seen by experts as representing a structural change in commodity prices⁶⁹. The drivers for this are manifold, most notably increasing demand in Asia, however rising demand for biofuels has been identified by many observers, including the IMF⁷⁰ and the FAO⁷¹, as a significant contributory factor. Most recently, the Director General of the International Food Policy Research Institute estimated that biofuel demand was responsible for about 30% of recent food price inflation⁷². Meanwhile the cereal import bill for Low Income Food Deficit Countries is predicted by the FAO to increase by 35% for the second consecutive year, with an even higher increase for Africa⁷³. Higher food prices are felt most by the world's poor, who typically spend fifty to eighty percent of their income on food⁷⁴. And recently, hamstrung by rising food prices, the World Food Programme announced it may begin rationing food aid, at precisely the time when it is needed most⁷⁵.

Studies estimate that for every single percentage point rise in the price of food, 16 million more poor people become hungry, meaning that by some estimates global biofuel demand may result in an extra 600 million people being hungry in 2025 than was previously estimated⁷⁶. For the EU's part, the Joint Research Centre of the Commission has estimated that the 10% target will have an impact on World cereal prices of *at least* +4%. Mariann Fischer-Boel, Commissioner for Agriculture estimates the price impact at up to 6%. This translates as something like 60-100 million more people going hungry as a result of the EU's biofuel policy.

Proponents of the target may argue that it will increase improve food security in rural areas by raising incomes, but this is a gross oversimplification. In reality the majority of rural households are net consumers of food, and so stand to lose from higher food prices.

Therefore, the impact of the policy on food security must be continually monitored with respect to:

- International food prices, and in particular the import bills of Low Income Food Deficit Countries and Least Developed Countries
- Access to, and availability of, food in poor producer countries

In the event that the policy is found to be having adverse consequences for hunger, demand should be curtailed, the overall target reduced to a sustainable level, and aid directed to the worst affected areas in the meantime.

⁶⁸ Relative to a 1990 baseline

⁶⁹ OECD-FAO Agricultural Outlook 2007-2016.

⁷⁰ *Biofuel Demand Pushes Up Food Prices*, IMF Survey Magazine: IMF Research, October 17, 2007.

⁷¹ *UN Warns on Soaring Food Prices*, BBC, 17 December 2007.

⁷² *Feed the World? We are Fighting a Losing Battle, UN Admits*, The Guardian, February 26, 2008.

⁷³ *Crop Prospects and Food Situation No. 1*, FAO, February 2008.

⁷⁴ *Growth and Poverty Reduction: the Role of Agriculture*, Department for International Development of the UK, December 2005.

⁷⁵ *High Food Prices May Force Aid Rationing*, The Financial Times, 24 February 2008.

⁷⁶ *Biofuels Expansion: Challenges, Risks and Opportunities for Poor People*, IFAD, 2008.

APPENDIX 5: Approval at the general meeting of 4 July 2008

- The 4 chairmen and vice-chairmen;
- The 6 representatives of the non-governmental organisations for environmental protection;
- 5 of the 6 representatives of the non-governmental organisations for cooperation for development;
- The 2 representatives of the non-governmental organisations that defend the interests of users;
- 5 of the 6 representatives of the workers' organisations;
- The 6 representatives of the employers' organisations;
- The 2 representatives of the energy producers;
- The 6 representatives from scientific circles;

Total: of the 38 voting members

Remark: One representative has not yet been designated among the workers' organisations and among the development organisations.

Meetings for the preparation of this opinion

The ad hoc working group on biomass met on 28 April, 19 May, 13, 20 and 27 June 2008 to prepare the opinion.

Persons who took part in the preparation of this opinion.

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