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(AGRINERGY)

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A specific support action (SSP) under the 6th EU Framework Research Programme May 2007 to November 2009

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Please note that all presentations can be downloaded at the AGRINERY website at www.ecologic.eu/agrinergy

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1 Background and introduction

With the EU Commission's energy and climate change package of January 10, 2007 Europe's renewable and bioenergy policies have taken an important step forward. The package established the target that 20 percent of all EU energy consumption should come from renewable sources by 2020. It also established a "minimum target" for biofuels to represent 10 percent of the petrol and diesel market share by 2020. At the spring meeting of the European Council in Brussels on March 8–9, 2007, the EU heads of state and government endorsed both targets as binding, under the condition of sustainable production of biofuels accounting for the 10% target and the availability of second generation biofuels.

In 2008, several major decisions on EU level will further influence and shape European bioenergy policies. First of all, the **Commission's proposal on a Directive on the use of renewable energies** is likely to have significant impacts. It covers the three renewable energy sectors of electricity, heating and cooling, and transport. It would amend the Directive 2003/30/ EC on biofuels and introduce the 10% biofuel target for 2020. With regard to bioenergy, the main elements of the proposal are provisions on the sustainability of biofuels, how to meet the 20% target, a burden sharing of how the 20% target could be divided among Member States and the requirement of national action plans.[1] Another important policy process with direct impact on bioenergy issues is the **CAP Health Check** scheduled for 2008, with possible implications on set aside obligations, the energy crop premium, cross compliance and rural development measures, Furthermore, the revision of the European **Fuel Quality Directive**[2] is also directly affecting the production of biofuels by containing the target to reduce GHG emissions from transport fuels by one percent each year from 2011 onwards and to increase the current limit for the incorporation of biofuels in fossil fuels from 5% by volume up to 10%.

However, there is growing public debate about the potentially negative impacts of the European biofuels targets which have been analysed and described in many recent studies[3].

Centre of the concern is that the substantial rise in the use of biomass from agriculture and forestry for producing energy can result in negative impacts on the environment (e.g. water and biodiversity), changing land-use patterns, socio-economic impacts and additional GHG emissions. Moreover, since meeting the ambitious EU bioenergy targets will require a considerable amount of imports, the European bioenergy policy has to take impacts on international level into account.

While the proposal of a directive on the use of renewable energies aims to address these issues, there is broad criticism[4] that the proposal may not provide adequate means to provide protection against these impacts. Consequently, a growing number of critics call for a reduction or even abandonment of the mandatory 10% biofuel target.

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[1] See Eanmon Bates issue tracker, December 2007, Proposal for a Directive of the European Parliament and of the council on the promotion of the use of energy from renewable sources (draft January 10, 2008); ENDS Europe DAILY 2457, 08/01/08: Commission firms up renewables trading plan.

[2] Directive of the European Parliament and of the Council amending Directive 98/70/EC; Council Directive 1999/32/EC and repealing Directive 93/12/EEC. European Commission, Brussels, 31 January 2007

[3] E.g. OECD 2007: „Biofuels – Is the cure worse than the disease?", Richard Doornbosch and Ronald Steenblik, Paris, September 2007; JRC 2008: unpublished biofuels working paper on the impacts and costs of the EU biofuel policy (see Financial Times, January 14, 2008 „EU scientists query bloc's biofuel strategy" and http://www.euractiv.com/en/transport/commission-scientists-blast-eu-biofuels-policy/article-169668).

[4] See for example Friends of the Earth Europe, Press Release "EU Commissioners sound warning over Agrofuels. FoEE calls for moratorium on proposed target", 14. January 2008, signed by 17 environment and development organisations.

In the light of the recent developments outlined above, the conference "Reality Check on EU Bioenergy targets" aimed to provide a forum to discuss the future of Europe's bioenergy targets and use from a socio-economic and policy perspective with experts and stakeholders from science, administrative bodies and NGOs. In order to prepare the conference, three background notes were produced to provide information for the discussions in the Working Groups[5].

The conference is organized as part of the Agrinergy project. AGRINERGY is a **specific support action** under the 6th EU Framework Research Programme, which runs from May 2007 to November 2009. The project was launched to analyse and understand the socio-economic, environmental and societal issues of EU bioenergy policies and assesses the effects of environmental policies, the future Common Agricultural Policy (CAP), and the development of sustainable rural development. The project also builds a link to international trade of biomass and its respective environmental and social impacts.

2 Opening and Introduction

The conference was opened by **Piero Venturi** from DG Research, who gave a short introduction on the importance of this conference for the further development of the EU Research on bioenergy in the particular field of biomass. Participants were also welcomed by **Thomas Dworak** (Ecologic - Vienna) on behalf of the AGRINERGY consortium, explaining the main objectives and achievements of the project so far.

As the first speaker of the first plenary session, **Paul Hodson** (DG TREN) presented the Commission's proposal on a Renewable Energy Directive, including regulations on biofuels. Cornerstones of this proposal are a set of sustainability standards for biofuels in order to reduce the risk of increased GHG emissions and impacts on biodiversity. Moreover, it provides specifications for a burden sharing among Member States to meet the overall aim of 20% renewables in 2020 depending on their national capacities. In the following discussion, Paul Hodson explained why sustainability criteria are currently limited to only few environmental aspects. He stated that social issues of biomass trade are cross cutting in nature and should be dealt with under the general WTO negotiations. Regarding the widely discussed sustainability problems of biofuel production he drew on the current knowledge gaps in policy making, in particular the limited availability of reliable land use studies and the link between food prices and bioenergy production. Moreover, impacts of bioenergy production are generally similar to those of agricultural production patterns and can therefore not be dealt with separately. Eventually, Paul Hodson reiterated the Commission`s position of sticking to the 10 % target since there would be no other means than biofuels to reduce GHG emissions in the transport sector. He also encouraged the scientific community to provide answers to the unsolved issues as mentioned in order to allow for better policy making.

The second presentation was given by **Andreas Pilzecker** from DG AGRI. He mainly focused on the "Health Check" and its potential impacts for bioenergy policies. From the agricultural perspective, the production of bioenergy from agricultural crops is seen as a new challenge requiring meaningful amendments to the current CAP (e.g. in regard to the abolishment of set aside land, the energy crop payments and investment subsidies)[6]. Moreover, impacts on rural areas and employment opportunities are not yet well researched. Andreas Pilzecker also stressed the risk of further environmental pollution due to changes in land use and agricultural practices. FDG Environment and DG Agriculture are working on solutions how to maintain environmental benefits after the abolishment of set aside regulations, e.g. the launch of an initiative to ensure that "environmental corridors" are preserved. A critical statement from the audience raised the fact that no investment controls are given to ensure GHG savings of new bioenergy plants.

[5] Available at www.ecologic.eu/agrinergy
[6] For details on the health check see http://ec.europa.eu/agriculture/healthcheck/index_en.htm

The third speech of this session was held by **Christian Hey** (European Environment and Sustainable Development Advisory Councils (EEAC)) who addressed the challenges and downsides of the EU biofuels target at a global scale. Referring to the much higher costs compared to other renewable energy options, he considered biofuels as "the luxury pathway" to mitigate GHG emissions. Moreover, he highlighted the unsolved questions of how to deal with indirect land use in certification schemes for biofuels and commented on the proposed sustainability criteria. Biofuels, he stated, are a major threat for food security in many parts of the world since productivity increase of land use is much lower than the increase of biofuel production. He also voted for an obligation for biomass importers to the EU to sign the international convention biological diversity (CBD), the UNFCCC and other international agreements. In his concluding remarks, Christian Hey called for the abolishment of the EU biofuels target, integrated biomass and renewables policies that ensure national responsibility for the delivery of national REN targets and where Member States define shares for different uses; and the application of the sustainability criteria for all bioenergy use options, not only biofuels, In the following discussion Christian Hey proposed to establish an overall land use planning scheme in countries which produce biofuels in order to tackle the problem of indirect land use change. This planning scheme could be promoted by international conventions such as the CBD.

3 Results from the Working groups

3.1 International dimension of the EU-bioenergy policies

Bioenergy is an already widely available energy source and, if used efficiently, has the potential to create employment and economic growth, reduce demand for petroleum and address a whole range of environmental problems. However, concerns about the potential negative effects of large scale biomass production and trade, for example deforestation or competition between food and energy production, have led to the demand for sustainability criteria and certification systems that can regulate production and trade.

As this topic is very complex and opinions are very diverse, the key objectives of the first working group were to explore current knowledge in this area and to provide a platform for interesting parties to exchange ideas, opinions and contextual information. Furthermore, we aimed to explore the need and interest for future actions by providing strategic policy recommendations on how to proceed with a concept of international trade in biomass.

In particular, two presentations were given followed by discussion. **Andre Faaij** from Copernicus Institute for Sustainable Development gave a presentation on the ‘Models and limitations to quantify technically and sustainably available biomass potentials’. Besides other aspects, he drew attention to many uncertainties and knowledge gaps regarding biomass potentials and the impacts of further expansion of biomass production. Certification schemes do not address numerous aspects, especially macro effects like land replacements. Afterwards, **Francis Johnson** from the Stockholm Environment Institute gave a speech on issues related to the ‘Challenges of international biomass trade’. He said, *inter alia*, that international trade of biomass has to be properly linked to local and regional bioenergy use in order to balance benefits among different levels.

Some of the key messages from the presentations and the following discussion include the main driving forces for bioenergy development and North-South collaboration. The policy recommendations formulated are:

- Rural development – creation of sustainable livelihoods
- Relieving resource pressures and stresses
- Socioeconomics of urbanisation and migration
- Energy security: local – regional – global
- Rural health issues – indoor air

- Urban health issues – air quality
- Future competitiveness of agro-industries
- Kyoto Annex 1 – countries seeking carbon credits
- Developing countries looking for foreign investment through Clean Development Mechanism (CDM)
- Dependence on fossil fuels in increasingly volatile market
- Reduced vulnerability of poor farmers through diversification of production.

Moreover, 2nd generation bioenergy can play a leading role in the global transition to clean and sustainable energy due to two decisive advantages over other renewables: biomass is stored energy and it can produce all forms of energy including heat, electricity and fuels for transport.

To secure a long and sustainable supply and demand for bioenergy, a well functioning market should be established where local use of forest and agriculture residues remains possible, assuring proper waste treatment, processing of residues and energy efficiency. Infrastructure and national markets should also be developed through supportive policies and incentives. Overall, the creation of a global commodity market could potentially increase the scale of overall production followed by decreasing costs.

However, major barriers still remain for the bioenergy markets in most developing countries. These include barriers related to infrastructure, investment, and institutions. For example, developing countries are characterised by low technical capacity for the adaptation of technical standards and getting products to regional and international markets is still difficult. Moreover, demand is too small for local markets to develop or attract investments, and well-defined regulative framework regulations for energy firm ownership and operation are lacking. Finally, government and administrative capacity is still low for the implementation of bioenergy policies and compliance with sustainability standards for biofuels certification.

Therefore, in these countries biomass potential is often high but it can only be realised under particular conditions. To overcome challenges such as food security and biodiversity protection, a broader perspective is needed, focusing not only on biofuels but also on other forms of bioenergy. Also different aspects related to bioeneryg such as poverty and development has to be considered. Key issues are also land use management as well as technological learning for developing countries.

Overall, policies should incorporate a variety of targets (e.g. sustainable agricultural production, modernization of energy generation, poverty reduction) which can only be achieved with a governance framework created in parallel to the target setting dimension. That is, certification schemes are one tool, but they have to be complemented by capacity building and an institutional framework, which should be established in exporting countries and in the EU, applying a mix of measures and strategies among different countries and regions. These measures should be designed in accordance with the evolving willingness of big biomass producers to apply sustainability standards to their core business.

Targets, which were set only for biofuels, should be suspended and replaced by integrated, more holistic but also regionally adapted bioenergy concepts. Finally, synergies should be identified between the development of local and global markets, showing best practices from developing countries.

3.2 Technological Pathways

The aim of the workshop was to get a more comprehensive view on the different technological pathways for bioenergy production. Three presentations were given, followed by discussion. The first presentation was by **Robert Edwards** of the Joint Research Centre. His main message was that second generation biofuels are very unlikely to become competitive with first generation biofuels in the foreseeable future, while biomass in the EU is better used for heat and electricity instead of biofuels. Second generation biofuels in Europe will become competitive at a price of about $220 per barrel crude oil, while European biodiesel will be competitive with crude oil at a crude oil price of about $160 per barrel. The opportunities for using agricultural waste are highly overestimated, because most of the commercially usable waste products are already used

for non-energy purposes, while the other part has too high costs in collecting and transporting or is required to maintain the soil quality. That is why, it is much more efficient to import biofuels from tropical countries, even if it is jus exporting the problem of food conflicts and soil carbon stock out of EU boarders.

The existing process to transform lingo-cellulosic biomass into biofuels is the same that the one to transform coal into liquid: plants are easy to cost and there are restricted possibilities of improvement. With this figures, and prices of wood imported from tropical countries, the minimum size for production plants is 1 GW to make economies of scale: investment amount is extremely high and only few places are available to implement such structures.

The second presentation was by **Herwig Ragossing** from the European Biomass Association (AEBIOM) about the outlook on biopower technologicy developments. He gave an overview of different technologies to produce electricity, gas and heat from biomass. Currently almost all bio-electricity is produced with steam turbines, having a low efficiency. A number of technologies seem to be promising. Examples are the Sterling engine (with low efficiencies between 15% and 30%), gasification, especially in combination with carbon capture and storage, and pyrolysis. Combined heat and power generation requires a demand for heat. Finally, anaerobic digestion towards biogass is efficient from the point of view of production per hectare (6 toe/ha in contrast with 1 toe/ha for first generation biofuels), but remains relatively expensive. According to Ragossing, optimal biomass project are integrated and decentralized projects with secure fuel supply and a need for heat and electricity.

The third presentation was by **Ayla Uslu** from the European Environment Agency (EEA) about the environmental priorities for biomass to energy conversion. She was very optimistic about the potentials for biomass. The EU-potential is up to 600 Mtons when all potential is used. Heat and electricity production are better suited than biofuels, while perennials are much better from a nature conservation perspective. Detailed environmental guidelines have to become an integral part of planning processes of bioenergy. In the discussion it became clear that the projections of the EEA study were based on relatively optimistic assumptions.

In the discussion there was attention for the efficiency of biorefineries. The question is to what extent there will be enough demand for the byproducts produced.

In summarizing the results, it was concluded that efficiency for heat and electricity is much higher than biofuels for transport,

Optimism about potentials for biomass production in Europe differs a lot. Projections for potentials are very sensitive for assumptions about land productivity developments, and incorporating restrictions like water availability in the estimates. Furthermore, a lot of productivity projections seem to be based on exponential extrapolation, while history shows for a lot of crops a decreasing growth rate of land productivity. So, much research is required to better underpin this type of assumptions. Some people suggested that both input and output prices for biofuels are very uncertain, making investment very risky. Some guarantees from the side of government may help investment, or attempts should be made to stabilize the markets.

It is much more efficient to produce biofuels from crops in tropical countries. Transportation costs in many cases are very low compared with differences in production costs. In Western Europe using waste seems to be the best option, although the amount of useful waste available is limited. Some people suggested that with second generation biofuels the CAP subsidies should become less important for biofuels, because no food crops are involved.

Communication to the public on the the difference between first and second generation biofuels (with all environmental impacts), and fuels from waste for heat and electricity, is important.

Based on the discussion above, the following research suggestions were generated. First, because uncertainty in projections is very high, a deeper investigation of plausible developments in bioenergy technology and opportunities for increases in crop productivity is required. Especially, crop productivity on

non-arable land is derived from research on crop productivity on arable land, while it is assumed that non-arable land will be mainly used for second generation biofuels. Research on crop productivity on non-arable land is therefore important in order to get good estimates of second generation productivities and realistic evaluation of impacts on water and carbon stock of the soil. Second, current policy is focused on specific regulations, like a share of biofuels in transport fuels, and not on rewarding different solutions with respect to their effect on the broader policy aims. Therefore, research into institutions that may help to create a level playing field for all GHG or crude oil dependency reducing options is required. This requires also research into the life cycle effect of different energy options, including the indirect land use effects of those options.

3.3 Bioenergy policy – Implementation and best practice on the regional level

The aim of this working group was to analyze implementation at regional/local level in order to discuss the different ways to achieve bioenergy targets. Three main topics were addressed:

- How can different policy objectives be combined into an integrated approach on regional level? What are the limitations and how to set priorities?
- What are suitable approaches to avoid/solve land use conflicts on the regional level?
- Which measures and support schemes could be the most efficient to achieve the national targets?

In order to get a better insight on the state of play four presentations were held. The first presentation, given by **Kyriakos Maniatis** from the European Commission (DG TREN), addressed the experiences made from National Biomass Action plans. From this presentation it became clear that while most MS and the EU level have agreed ambitious bioenergy targets, there is still a considerable gap in implementation, with only four countries that submitted a national Biomass Action Plan and three more that have tabled a biomass strategy. Also, best practice examples, at the national level on how to implement regional bioenergy projects are still scarce. Mr. Maniatis was therefore recommending actions for MS, such as the development of integrated national Action Plans, the use of successful examples where available and their regional adaptation and a broader focus on biomass instead of bioenergy as well as a rigorous implementation of sustainability criteria.

The second presentation from **Edita Vagonyte** (AEBIOM) described the situation in Styria Austria mainly with regard to biomass use for heating. This region has a high number of local biomass plants (heating and gas). In the discussion participants from other Member States reported that the involvement of farmers and the general public in designing local bioenergy solutions is comparably low to the Austrian example. A potential reason for this was identified in the different mentalities in different regions. Therefore, it will be important not only to adapt best practice examples and policies to the respective regional circumstances, but also to focus more on awareness raising and education and not only policies.

This was followed by a lecture given by **Katrin Heinsoo** from the Estonian University of Life Sciences on implementation and best practice on the regional level in the New Member States. As for Estonia, good experiences have been made with pre purified waste water in short rotation coppices. She also described the main technical and non-technical barriers related to short rotation coppice, eventually calling for investment subsidies and best practice guidelines for new MS.

Finally, a Swiss example on how to use LCA information for tax exemption for biofuels and policy making was presented by **Mireille Faist** from EMPA – Materials Science and Technology. She described the calculation and results of LCA, that allowed an comparison between different biofuels and their origin in terms of GHG emissions vs. total environmental impact. The presentation lead to a short debate on the comparability of environmental impacts between fossil fuels and biofuels. Concerns were raised that lifecycle assessment frameworks for “fossil versus biofuels" are not fully comparable, so results obtained have to be used carefully in policy making.

The general discussion, based on the three questions (as outlined above), resulted in the following concluding points:

- It is important to develop integrated national/regional action plans as they can trigger the development of a comprehensive and integrated approach, which requires detailed land use plans and discussions on conflicting interests for biomass and not only bioenergy. At the same time, realistic approaches have to address the issue of food and non food biomass. Therefore, Member States should learn from existing examples such as Austria and adapt them to national conditions. Furthermore, small demonstration projects should be established to show the different options and possible ways of implementation
- The second important point is that there is a need to create security for investment by long term (policy) commitments. This applies to farm level (stable prices for commodities, long term contracts to sell their agricultural products, particularly of perennial crops) and to industrial investments (security of supply).
- Third, it was highly recommended by all experts that it is important to investigate the different technology pathways, considering the different regional context and in particular agricultural and forestry resources and production patterns as well as consumption patterns.
- There was an agreement that the current debate on biofuels in the press is a partly misleading and the "black and white" view is not very sufficient to achieve sustainable solutions. In order to achieve a more sustainable level, the focus of discussion should be changed towards a more holistic view (e.g. footprint for all production patterns, link agriculture to GHG emission trading)

4 EU Biomass production in a broader view

After the report back from the working group, the discussion lead to a more general view of biomass production. In this plenary session, **Jan Erik Petersen** (EEA) presented and evaluated bio-energy production-analytical choices, direct and indirect effects results from the most recent EEA studies[7] and gave information on available analytical tools to estimate the impacts of increased bioenergy production and their main drawbacks. A main part concerned the evaluation of the influence of available tools and system boundaries, focusing on indirect impacts. He showed that there are several analytical challenges which are very complex and require further investment in models and data. For instance, interactions between the environmental, food and energy domains are insufficiently explored in a global dimension. As for the further development of bioenergy policies, there is an urgent need to consider indirect land use change, climate effects and carbon management on international level, as well as to shift from technological assessments to analysis that includes socio-economic and governance factors.

Theo van de Sande (Directorate General for Development Cooperation, Netherlands Ministry of Foreign Affairs) particularly focused on international trade issues related to bioenergy and the sustainability criteria as foreseen in the proposal for the renewable energy directive. In his presentation he called for better information in order to make consumers aware of the global problems related to agricultural production and pointed to the difficulties of current certification schemes and sustainability standards. This would allow consumers to make more knowledgeable decisions. However, such an approach would require the application of sustainability criteria for all agricultural production in and outside the EU to ensure equal transparency.

Thereafter, **Rudy Lumuru** (Sawit Watch) and **Ana Filippini** (World Rainforest Movement) presented environmental and social impacts of increased bioenergy production and demand in Indonesia, and South America, respectively. In both cases, impacts are drastic and mostly related to massive land use changes (e.g. logging of rain wood forest or converting grassland into eucalyptus plantations). They also reported

[7] See EEA (2007): Estimating the environmentally compatible bioenergy potential from agriculture

depopulation of rural areas and scant employment under precarious conditions of large-scale biomass production, leading to broad resistance of farmers and rural peoples in many places. Finally, both called for the EU to act more responsible from a global perspective. Approaches presumed to be suitable to solve European energy problems might lead to massive impacts in other places of the world. EU policy therefore needs to consider these impacts in their targets and policy measures.

5 Concluding discussions

Reflecting on the different topics and discussions during the conference the final panel discussion moderated by Andreas R. Kraemer (Ecologic- Berlin) was centered on two main questions

- What are the most urgent research questions in bioenergy for the future?
- Which policy recommendations can be drawn from the conference?

Panelists included **Ana Filippini, Nina Holland** (Corporate Europe Observatory), **Theo van de Sande, Rudy Lumuru, Jean-Marc Jossart** and **Jan Erik Petersen**.

The following research needs and questions have been identified by the panelists:

- More research on local and regional approaches to implement the national EU targets is needed. This has to address implementation measures on administrative level, impacts on job creation and environment, but also the utilization of different energy crops in accordance with other regional needs such as food, recreation etc. Best practice of good implementation has to be identified and disseminated among Member State administrations.
- Research platforms of experts (such as the European Bioenergy Technology Platform) need to be (more) transparent and should be open to civil society groups.
- More research and investment into reliable data is needed in order to make viable policy scenarios and make responsible decisions. Better agro-economic modeling in combination with food demand forecasts are needed in order to estimate how much biomass will be realistically available for bioenergy use.
- All possible biomass uses (including additional options for bioenergy) should be assessed in a system analysis approach. Research on (sustainable) bioenergy and renewable policies has to be implemented with an integrated approach, i.e. with a broader focus on biomass (not only for fuels but also for food, feed fibre, pharmaceuticals etc.), but also taking into consideration global impacts and interrelations, e.g. in terms of (indirect) land use change, the understanding of global markets etc.
- Biomass research always has to be accompanied with socio-economic assessment of national and regional conditions. In general, simplification of complex conditions has to be avoided.
- Research is needed on how to extend sustainability standards to overall use of biomass including biomass for food, feed, and non-food purposes? How can the WTO be used as a platform to negotiate international valid sustainability standards for biomass use?
- Which governance approaches other than standards and certification schemes are suitable to accompany further expansion of bioenergy and which conditions have to be fulfilled in developing countries for a sustainable growth of bioenergy?
- Identify ways of how citizens could be made more aware of the global impacts of their consumption patterns.

Policy recommendations given by the panellists include:

- European policy decisions should be in accordance with international conventions such as the UNFCCC and CBD
- Certification schemes alone can not ensure sustainable productions of bioenergy crops, additional policy measures are needed.
- Different opinions were raised about the 10% target and if it should be reduced or even banned.
- The (administrative) burden to ensure sustainability should not only apply to the biofuel-sector but should relate to biomass in general.
- Discussions on the sustainability ob biofuels/ bioenergy need to be put in the broader context of fossil fuels, biomass in general and consumption patterns in order to come to integrated and sustainable policy solutions.
- From the southern perspective a broad discussion of lifestyle and basic human needs (food vs. fuels) was demanded.
- In terms of biomass imports from developing countries bioenergy policy has to be linked to developing and trade policies.
- Policies need to exploit efficiency potentials of (renewable) energy including bioenergy to a greater extent.
- In terms of energy policy much higher emphasis should be put on demand driven measures. For the transport sector, for instance, restrictions on car emissions would have higher effects on GHG reduction than the promotion of biofuels. Also, a general change in transport infrastructure may be needed.
- The focus for bioenergy options to be supported by policies has to be laid on climate-friendly pathways to which biofuels do not belong to in first priority according to the majority of Life Cycle Assessments.
- European decision-makers have to be aware of the fact, that there is a major gap between targets and policy making and the implementation of measures on national and regional level.
- The EU decision-making process has to consider the voices from various stakeholder-groups like farmers and rural peoples from southern countries and it has to ensure much broader public involvement.EU policy should guarantee high transparency on lobbying activities of companies.

6 Annex 1: Programme

DAY one – 19 May 2008

12:00	Registration
13:00–14.30	**Session I – Opening and Introduction**
	• Opening: *Piero Venturi, European Commission, DG Research* • AGRINERGY- What is it about?*: Thomas Dworak, Ecologic-Vienna* • European Bioenergy policy – Recent developments: *European Commission, DG TREN, Paul Hodson* • Bioenergy as a promoter for sustainable development and innovation in rural areas in Europe*: Andreas Pilzecker, European Commission, DG Agriculture* • Challenges and downsides of the biofuel target*: Dr. Christian Hey, European Environment and Sustainable Development Advisory Councils (EEAC)*
14:30	Coffee break
15:00 – 17.00	**Session II – Working groups** • Introduction/Background to the working groups *(Ecologic), 15 min*
	(1 moderator, 1 rapporteur, 2-3 speakers with short notes) • **WG 1: International Dimension of EU Bioenergy Policies** Moderator: *Prof. Johann Swinnen, CEPS* - Introduction (10 min): Models and limitations to quantify technically and sustainably available biomass potentials – *Andre Faaij, Copernicus Institute for sustainable development* - Introduction (10 min): Challenges of international biomass trade: *Francis Jonson (SEI)* • **WG 2: Technologies and pathways of bioenergy production** Moderator: *Geert Woltjers, LEI* - Introduction (10 min): Potentials of second generation biofuel technologies: *Robert Edwards, Joint Research Centre* - Introduction (10 min): Outlook on bioenergy technology developments: *Herwig Ragossnig (AEBIOM))* - Introduction (10 min): Biomass to energy - environmental priorities: *Ayla Uslu, European Environment Agency (EEA)* • **WG 3: Bioenergy policy – Implementation and best practice on the regional level** Moderator: *Thomas Dworak, Ecologic* - Introduction (10 min): Experience from National Biomass Action Plans – *Kyriakos Maniatis, European Commission, DG TREN* - Introduction (10 min): Experiences from Austria: Edita Vagonyte, *AEBIOM, Landeskammer für Land- und Forstwirtschaft Steiermark* - Introduction (10 min): Experiences from New Member States*: Katrin Heinsoo, Estonian University of Life Sciences* - Introduction (10 min): LCA information into tax exemption for biofuels *Mireille Faist, EMPA – Materials Science and Technology*
18.00	End of day one
19.30	**Reception**

DAY two –20 May 2008

9:00	**Session III – Reality check - Biomass production in a broader view** Chair:
	• Evaluating bioenergy production - analytical choices, direct and indirect effects - *Jan-Erik Petersen, European Environment Agency, Copenhagen* • Outlook on international biomass trade – *Theo van de Sande, Directorate General for Development Cooperation, Netherlands Ministry of Foreign Affairs* • How EU biomass hunger affects developing countries – *Rudy Lumuru, Sawit Watch (Indonesia)* • How EU biomass hunger affects developing countries – *Filippini, Ana (World Rainforest Movement): Uruguay*
10.15 – 10.30	Coffee
10:30	**Session IV – Report back from first day workshops** ***Chair:***
11:15	**Session V – Concluding discussions and outcomes** *Chair: R. Andreas Kraemer, Ecologic* • Panel discussion on the outcomes • Conclusions and lessons learned for further research and policy making
13.00	End of day two