IEA Bioenergy

ExCo 63 Doc 13.11

TASK 40

Sustainable International Bioenergy Trade: Securing Supply and Demand

Work programme for the 2010-2012 Triennium

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Working Period 2010-2012

Task Title: **Sustainable International Bioenergy Trade: Securing Supply and Demand**

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Background and rationale for Task proposal

The need to reduce GHG emissions, secure energy supplies, and achieve rural development come together in bioenergy. Many national policies and global scenario's target bioenergy (for heat, power, fuels, as well as biomaterials) to make a major contribution to achieving such goals. The IPCC for example included biomass use as a mitigation option in about any relevant sector, highlighting that the energy potential may ultimately be developed to 200-400 EJ (compared to some 490 EJ global primary energy use today and well over a 1000 EJ in 2050). Biomass shares in total energy supply are hoped to achieve 20-30% looking at long term strategies and scenarios of countries as well as on a global scale.

However, without the development of biomass resources (e.g. through energy crops) and a well functioning international biomass markets that can assure a reliable and lasting supply, such ambitions will not be met. A lack of availability of good quality (and competitive) biomass resources has proven to be a structural showstopper for many market initiatives in the past. International trade of biomass and biofuels and market development has been a major trend over the past years and a major stabilising factor for the bioenergy sector worldwide.

Than, in 2008, the whole bioenergy and biofuels sector has ended up in turmoil during the food crisis. Partly as a result from this crisis, securing sustainable production of biomass and biofuels has become a key topic globally and is likely to remain a leading issue for years to come. Given that in various ways, new policies are now implemented to introduce sustainability criteria for bioenergy (e.g. the EC proposal, various roundtables (sugar, soy, palm oil) and various national proposals), it is of vital importance to improve our understanding how the current proposals and their expected development will affect trade and markets of biomass and biofuels.

Furthermore, there is strong policy pressure to introduce and implement second generation biofuels on a large scale on shortest possible term. Task 40 acknowledged that a breakthrough and strong support for 2nd generation biofuels will have major impacts on markets and trade. The same may be true for new biochemicals by development of advanced biorefineries. Supplying large-scale second-generation plants with sufficient biomass will in most cases require advanced logistics and international sourcing of (lignocellulosic) feedstock.

It is also observed that more and more investment is taking place in developing regions and economies in transition for biomass and biofuel production with export as a main target.

At the same time, the financial crisis strongly affects the investments in alternative energy in general. Whether the government support for renewable energy and bioenergy in particular will be sufficient to drive developments for bioenergy further in the coming year's remains a major uncertainty at present and requires urgent attention in international networks like IEA Bioenergy.

On the positive side, various countries (key ones being represented in Task 40) now have considerable experience with building biomass markets and developing available resources in balance with market demand. Over the past decade or so, international trade of biomass resources and biofuels has become indispensable in the portfolio of market parties and volumes traded worldwide increase at a very rapid pace with an estimated doubling of volumes in several markets over the past few years. In 2007, it was estimated that already 10% of global bioenergy production involved internationally trade biomass resources and fuels. In specific markets (e.g. wood pellets) up to one third of the global demand is nowadays traded internationally. The fact that those international markets are growing means that more and more resources are becoming available from regions were biomass use was low or absent so far and supply risks for biomass users have reduced due to more diverse and reliable supplies. International bioenergy trade is in that sense a stabilising and enabling factor for developing the bioenergy option at large on a global scale.

This proposal for an extension of the current Task 40 under the IEA Bioenergy Agreement builds on the experience of what is today seen as an outstanding international platform in the field with 13 countries and the EC represented.

Objectives and scope

Clearly, the strongly growing demand for biomass and biofuels make clear that there is a growing need to develop biomass resources and exploit biomass production potentials in a sustainable way and to understand what this means in different settings. In some markets, prices of biomass resources and fuels are already rising, including indirect effects on price of raw material prices for e.g. the forest industry as well as on food (e.g. sugar). Biomass markets are still immature and this is in particular true for the demand side of the market; many biomass markets, e.g. for solid fuels, rely on policy objectives and incentives, that prove to be volatile.

It is particularly important to develop both supply and demand for biomass and energy carriers derived from biomass in a balanced way and avoid distortions and instability that can threaten investments in biomass production, infrastructure and conversion capacity. Our understanding of how this is best organised and managed needs further improvement. International biomass markets have been mapped by Task 40, but to date available analyses, statistics and modelling exercises still have limitations

The **core objective** of the Task remains:*' to support the development of a sustainable, international, bioenergy market, recognising the diversity in resources, biomass applications'*

Developing the sustainable and stable, international, bioenergy market is a long-term process. The Tasks aims to provide a vital contribution to such (policy making) decisions in the coming years for market players, policy makers, international bodies as well as NGO's. It aims to do so by providing high quality information and analyses, providing overviews of developments, be a linking pin between different arenas involved in the debate, a clearinghouse for information and by targeted dissemination activities.

Key elements of the work programme and outputs

Objective 1: biomass supplies: To deliver refined insights in availability and potential production and supply of biomass resources on regional, national and global level. This explicitly includes a range of biomass residue streams, land use, and competition for land and on various markets worldwide (i.c. including developing regions). This objective is in particular to be tackled by inter-task collaboration.
For Task 40 the focus will lay on development of supplies at large in relation to various drivers (demand development, improvements in production and logistics) and barriers (e.g. lack of investment, sustainability concerns).

Objective 2: Sustainability and certification: To determine how the sustainability of biomass supplies, use and trade can be secured optimally and efficiently, in particular from a market perspective, with specific attention for the impacts of certification/verification on international biomass and biofuels trade.

Objective 3: trade, market and demand dynamics: To map and provide an integral overview of biomass markets and trade on global level, as well as for specific regions, identify and map new markets and products (such as Jathropha oil, demand from industry, heating markets, biorefining and future 2nd generation biofuels production). Improve the understanding on how biomass trade and markets respond to fluctuating (fossil) energy prices, developments on global markets for food and forestry products, emission trading, and policies of different countries. Specific attention is paid to the balance between demand and supply aspects versus structures, institutions, drivers, technologies, etc. influencing demand and how to organise biomass trade under uncertainties observed in the market.

Objective 4: transport, Logistics, and trade: Provide (further) insights in international biomass supply lines and logistic requirements (including new producing regions, i.e. developing countries and Eastern Europe) and these can be optimised over time. This includes increasing our understanding on how costs of biomass production, pre-treatment and transport can be reduced over time, e.g. through better organisation and applying more efficient technology. Such work includes advanced forecasting exercises on required logistic capacity to facilitate increased biomass use and trade.

Objective 5: Outreach and dissemination: High quality dissemination; the Task is to provide a key international platform (with a diverse range of stakeholders) for bioenergy trade and markets (covering supply and demand, sustainability, financial products etc.). Findings of the Task are translated in analysis and advice for industry and entrepreneurs, policy makers and other stakeholders (such as NGO's).

It aims to do so by delivering high quality information and analyses, providing overviews of developments, be a linking pin between different arena's involved in the debate, a clearinghouse for information and by targeted dissemination activities. Opportunities for industry and research partnerships are specifically sought after, aiming to more networking type events to draw in business.

Management
Task Leaders: Andre Faaij, assisted by Martin Junginger: Copernicus Institute –Utrecht University – the Netherlands and Peter-Paul Schouwenberg. Nidera Handelscompany BV – The Netherlands

Annual Budget: US$238,000 (assuming 14 members)
Annual Budget per participant: US$17,000 (calculated from 12,500 Euro budget at March 2009)

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1. BACKGROUND AND RATIONALE

The need to reduce GHG emissions, secure energy supplies, and achieve rural development come together in bioenergy. Many national policies and global scenario's target biomass (for heat, power, transport fuels, as well as biomaterials) to make a major contribution to achieving such goals. The IPCC for example included biomass use as a mitigation option in nearly all sectors, highlighting that the energy potential may ultimately be developed to 200-400 EJ (compared to some 490 EJ global primary energy use today and well over a 1000 EJ in 2050). Biomass shares in total energy supply are hoped to achieve 10-30% looking at long term strategies and scenarios of countries as well as on a global scale.

However, without the development of biomass resources (both energy crops and biomass residues and wastes) and a well functioning biomass market that can assure a reliable and lasting supply, such ambitions will not be met. A lack of availability of good quality competitive and sustainable biomass resources has proven to be a structural showstopper for many market initiatives in the past.

And in 2008, the whole bioenergy and biofuels sector has ended up in turmoil due to the food crisis and critical public and scientific discussions on the overall sustainability of bioenergy. Partly as a result from this crisis, securing sustainable production of biomass and biofuels has become a key topic globally and is likely to remain a leading issue for years to come. Given that in various ways, new policies are now implemented to introduce sustainability standards for bioenergy (e.g. the EU Renewable Energy Directive, various roundtables on sugar, soy, palm oil and various national proposals), it is of vital importance to improve our understanding how the current proposals and their expected development will affect trade and markets of biomass and biofuels.

Furthermore, there is strong policy pressure to introduce and implement second generation biofuels on a large scale on shortest possible term. Task 40 acknowledged that a breakthrough and strong support for 2nd generation biofuels will have major impacts on markets and trade.

It is also observed that more and more investment is taking place in developing regions and economies in transition for biomass and biofuel production with export to global markets as a main target.

At the same time, the financial crisis seems to strongly affect the investments in alternative energy in general. Whether governmental support for renewable energy and bio-energy in particular will be sufficient to drive developments for bioenergy further in the coming years remains a major uncertainty at present and requires urgent attention in international networks such as IEA Bioenergy.

On the positive side, various countries (with key ones being represented in Task 40) now have considerable experience with building biomass markets and developing available resources in balance with market demand. Over the past decade, international trade of biomass resources and biofuels has become indispensable in the portfolio of market parties and volumes traded worldwide increase at a rapid pace with an estimated doubling of volumes in several markets over the past years. In 2007, it was estimated that already 10% of global bioenergy production involved internationally trade biomass resources and fuels. The fact that those international markets are growing means that more and more resources are becoming available from regions were biomass use was low or absent so far and supply risks for biomass users are reduced due to more diverse and reliable supplies. International bioenergy trade is in that sense a stabilising and enabling factor for developing the bioenergy option at large on a global scale.

Various drivers of international bioenergy trade have been distinguished by Task 40, which remain important:

- Fuel supply security is currently a prime driver for biomass use and trade. Biomass diversifies the total portfolio of fuels used and imported by countries. This can reduce the risks of supply disruptions both in terms of quantity and in price. This argument is particularly strong for biofuels for the transport sector, as they replace oil imports. Also in countries were oil and natural gas are major fuels sources for residential heating, solid biomass fuels such as wood pellets rapidly gain importance to diversify the fuel portfolio and reduce import dependencies. The price developments on the worlds' oil and gas markets (and to a lesser extent also for coal), prove a strong push.

- A second driver is cost effective emission reduction of greenhouse gasses. At present, the demand for biomass is especially growing due to climate policies of various countries. Import is currently sometimes more attractive than exploiting local biomass potentials in situations where indigenous resources are insufficient (or there are insufficient resources available with specific qualities and costs). In the long run, several world regions would have inherent advantages in producing lower cost biofuels than other parts of the world.
- A third driver is socio-economic development as such. Many institutions and much research have indicated the potential strong positive links between developing bioenergy use and local development. Reliable biomass markets can provide a sustainable source of income for rural communities. Furthermore, for various countries that may export bioenergy in the future, this export may provide substantial benefits for their trade balances. This is evident in for example several African countries such as Mozambique and Tanzania.
- A fourth driver could be sustainable management and the rational use of natural resources. This may be a less clear and obvious argument in favour of international bioenergy trade at first glance, but it may prove to be essential. Large-scale production and use of biomass for energy will require the use of (additional) land and adequate infrastructure. The export market can be the trigger for obtaining benefits, when biomass production can be combined with better agricultural management, and with restoration of degraded and marginal lands. This is clearly the longer term objective of several key proposals with sustainability criteria and certification of bioenergy production.

A reliable and sustainable supply of biomass is vital to any market activity aimed at bioenergy production. Given the high expectations for bioenergy on a global scale and for many nations, the pressure on available biomass resources is increasing rapidly. Especially due to high prices for fossil fuels (especially oil, but also natural gas and to a lesser extent coal) the competitiveness of biomass use has strongly increased. In addition, the development of CO_2 markets (emission trading), as well as ongoing, technological, learning, scale increase and subsequent cost reductions for biomass and bioenergy systems, strengthened the economic drivers for increasing biomass use, production and trade.

The development of truly international markets for bioenergy has become an essential driver to develop available biomass resources and bioenergy potentials, which are currently underutilised in many world regions. This is true for both (available) residues as well as possibilities for dedicated biomass production (through energy crops or multifunctional systems such as agro-forestry). The possibilities to export biomass derived commodities for the world's energy market is creating a stable and reliable demand for rural communities in many (developing) countries, thus creating an important incentive and market access that is much needed in many areas in the world. The same is true for biomass users and importers that rely on a stable and reliable supply of biomass to enable (often very large) investments in infrastructure and conversion capacity.

The desired market stability and proper governance to secure sustainability of biomass production and trade is however far from achieved at present. Markets are immature and volatile and Task 40 has identified and analysed a range of barriers that hamper sound development of (international) biomass markets at the moment and that should be addressed. The current turmoil and volatility in the financial and energy markets as well as expected impacts of global CO2 trading, add to those uncertainties for bioenergy markets and trade.

Task 40 has however also identified various strategies and opportunities for further sound market development and further work and international exchange is highly desired to facilitate market parties and government bodies in the process.

For market parties such as utilities, companies providing transport fuels, as well as parties involved in biomass production and supply (such as forestry companies), high quality knowledge, clear sustainability criteria and identification of promising possibilities and geographical areas are of key interest. Investments in infrastructure and conversion capacity rely on minimisation of risks of supply disruptions (both in terms of volume, quality and price) and increasingly, the capability to comply with complex requirements to meet sustainability criteria in order to guarantee that biomass produced in other parts of the world is supplied on a truly sustainable basis.

Previous Triennia; 2004-2009
Task 40 membership grew considerably over the period 2004-2009 to 14 members and the interest in the field of sustainable international bioenergy trade, development of bioenergy markets, optimisation of supply chains and certification are now established globally. Strong growth of traded biomass and biofuel volumes, ongoing internationalisation of the bioenergy discussion, strongly growing markets for biofuels (solids, liquid as well as gaseous), formulation of policy in many countries (in- and outside the OECD) and at international bodies (such as GBEP) around this topic and a strong involvement of industry and market parties.

Task 40 is to date recognised as a strong and unique international platform in this field, because of its content orientation, neutral position, and involvement of market players. Currently, the Task is considered a relevant and interesting partner for governments, market parties, NGO's, and international bodies.

Overall, Task 40 has succeeded in carrying out a broad work program, produced significant outputs, and received considerable interest internationally.
Progress was particularly good in mapping and understanding international markets, in the certification debate and on delivering unique insights in trading systems and concrete markets and regions, including evaluation of barriers and policies. The events organised to date resulted in considerable exposure, evident from many invitations for presentations and written contributions to journals, newsletters, the use of the Task 40 website (www.bioenergytrade.org) and its structural inclusion in a wide variety of relevant policy and research arena's.

The rapid and hectic development of international bioenergy trade and markets justifies the prolongation of the Task with an up to date work program to support the development of sustainable biomass markets at large.
For several other current member countries of the IEA bioenergy agreement, membership of Task 40 could be of key interest, given the increasing involvement of those countries in international trade, certification activities, related policy formulation and, in particular concrete market developments. Interest at this stage is evident from Denmark, Australia, and Ireland.

2. OBJECTIVES AND SCOPE OF THE TASK

For the <u>previous</u> working period the main objective of the Task was formulated as: *to support the development of a sustainable, international, bioenergy market, recognising the diversity in resources, biomass applications.*
The (further) development of a sustainable and stable, international, bioenergy market is a clearly a long-term process and this process is far from finalised. Eventually, biomass products may develop into commodity markets, which could have multiple benefits, such as much improved market stability and competitive prices. However, also the sustainability of large scale biomass production and trading has to be secured and choices in governance of developing biomass markets are now at a critical stage. At this moment, fundamental policy choices by both developed and developing countries can still be made on how biomass markets are steered, controlled, and governed.

Although the task has made considerable progress on the core areas on understanding and mapping markets and trade, biomass resources, logistics, transport and trade chains and impacts and securing sustainability of biomass production use and trade, all these areas are at present still very dynamic. Activity in the market, policy and research are still increasing and maintaining an overview of developments on the one hand and on the other hand setting the agenda and play a pro-active role in highlighting opportunities as well as barriers for sustainable biomass production, use and trade, is perhaps even more important today. Especially because the sustainability debate is now translated into concrete policy actions in many nations as well as in the market, increased understanding on the mentioned areas remains vital.

Furthermore, a variety of new issues is emerging on the agenda: biomass demand from new players (such as chemical industry as feedstock for e.g. bioplastics), more investment in and involvement of developing countries, technology development (torrefaction, 2nd generation biofuels) and also the level of sophistication of research has increased (more macro-economic analysis, refinement of land use modelling and impact analysis of biomass production and use, etc.). By building on and strengthening the key areas of Task 40 on the one hand and by including key new topics on the other, up to date objectives and activities are formulated below:

As described, essential drivers for bioenergy trade remain security of supply, economics, environmental (GHG mitigation and other) and development at large especially for rural areas (in developing as well as developed countries). Biomass markets are developing fast, but are still immature and many barriers remain.

Fierce debate takes still takes place on the sustainability of large scale use of biomass and international trading. Different perspectives and strategies exist on how biomass and bioenergy markets should be governed and supported and how the sustainability of the resources and use can be secured (e.g. through certification). At this stage, a large number of (policy) initiatives is developed and implemented, with the EU Directive as probably the most important to date.

Clearly, the strongly growing demand for biomass and biofuels make clear that there is a growing need to develop biomass resources, exploit biomass production potentials in a sustainable way and to understand what this means in different settings. In some markets prices of biomass resources and fuels have fluctuated strongly over the past years, including indirect effects on price of raw material prices for e.g. the forest industry as well as on food (and fodder). Biomass markets are still immature and this is in particular true for the demand side of the market; many biomass markets, e.g. for solid fuels, rely on policy objectives and incentives, that prove to be volatile. Understanding the factors that drive demand for biomass and biofuels and how volatility in demand can be dampened is of major importance for building sustainable and reliable supplies and markets.

It is in particular important to develop both supply and demand for biomass and energy carriers derived from biomass in a balanced way and avoid distortions and instability that could threaten investments in biomass production, infrastructure and conversion capacity. Our understanding of how this is best organised and managed needs further improvement. International biomass markets have been mapped by Task 40, but to date available analyses, statistics and modelling exercises still have limitations

The **core objective** of the Task remains:
'to support the development of a sustainable, international, bioenergy market, recognising the diversity in resources, biomass applications'
For the coming triennium we distinguish five up to date key areas to specify the main objectives of the Task:

Objective 1: biomass supplies
To deliver refined insights in availability and potential production and supply of biomass resources on regional, national and global level. This explicitly includes a range of biomass residue streams, land use, and competition for land and on various markets worldwide (including developing regions). This objective is in particular to be tackled by inter-task collaboration.
For Task 40 the focus will lay on development of supplies at large in relation to various drivers (demand development, improvements in production and logistics) and barriers (e.g. lack of investment, sustainability concerns).

Objective 2: Sustainability and certification.
To determine how the sustainability of biomass supplies, use and trade can be secured optimally and efficiently, in particular from a market perspective, with specific attention for the impacts of certification/verification on international biomass and biofuels trade.

Objective 3: trade market and demand dynamics
To map and provide an integral overview of biomass markets and trade on global level, as well as for specific regions, identify and map new markets and products (such as Jathropha oil, demand from industry, heating markets, biomethane, biorefining and future 2nd generation biofuels production). Improve the understanding on how biomass trade and markets respond to fluctuating (fossil) energy prices, developments on global markets for food and forestry products, emission trading, and policies of different countries. Specific attention is paid to the balance between demand and supply aspects versus structures, institutions, drivers, technologies, etc. influencing demand and how to organise biomass trade under dynamic conditions observed in the market.

Objective 4: transport, logistics and trade
Provide (further) insights in international biomass supply lines and logistic requirements (including new producing regions, i.e. developing countries and Eastern Europe) and these can be optimised over time. This includes increasing our understanding on how costs of biomass production, pre-treatment and transport can be reduced over time, e.g. through better organisation and applying more efficient technology. Such work includes advanced forecasting exercises on required logistic capacity to facilitate increased biomass use and trade.

Objective 5: Outreach and dissemination
High quality dissemination; the Task provides a key international platform (with a diverse range of stakeholders) for bioenergy trade and markets (covering supply and demand, sustainability, financial products etc.). Findings of the Task are translated in analysis and advice for industry and entrepreneurs, policy makers and other stakeholders (such as NGOs).

It aims to do so by providing high quality information and analyses, providing overviews of developments, be a linking pin between different arenas involved in the debate, a clearinghouse for information and by targeted dissemination activities.

Opportunities for industry and research partnerships are specifically sought after, aiming to more networking type events to draw in business. Furthermore, the Interlinkages and cooperation with international processes such as the GBEP will be intensified.

In the desired impacts and results of the Task emphasis should lay on:

- Real development of markets, trade and (pilot and demonstration) projects (e.g. between the Task member countries!); with a global perspective, including developing countries.
- Outreach to industry, strategic policy makers, the general public and international circuits. An important element is also increasing and understanding public awareness and perceptions of international bioenergy markets and sustainable development, since this is a vital issue for societal support of using biomass resources from other (world) regions.
- Maximising the collaboration with industry and market, not only in bioenergy but also related fields such as feed and fodder market, forest industry, international logistics and certification. This is in particular true for the events organised by Task 40.

In this proposal more emphasis in put on biomass markets instead of (international) trade. Trade remains and essential component of the work, but in addition, the understanding of developing the demand and supply side for biomass is essential on regional and national level as well. In addition, entrepreneurs and policy makers are now dealing with both development of biomass markets on a regional level in an international context. The balance between opening up market, removing barriers and at the same time building capacity to develop regional resources and demand is at his moment difficult in many situations and requires serious attention. Exchange of information on bioenergy experiences between parties and countries in different stages of market development can than also be facilitated.

This proposed program addresses several key priorities raised by ExCo, recognising that biomass supplies, their sustainability and a working market are key issues for bioenergy at large. The (development of) biomass resource availability is typically a cross-cutting issue for several tasks and structural and well structured inter-task collaboration is therefore desired during the new triennium (see sections 3 and 4).

3. SPECIFICATION OF KEY CONTENT AREAS OUTPUT AND DELIVERABLES

In conjunction with the objectives the identified 5 key areas of work are broken down below into different activities and output. This is a tentative list compiled after involvement of all current national Task leaders, operation agents and a diversity of stakeholders, incorporation of priorities raised by ExCo and issues raised by other Task leaders. Priorities in the list of activities and outputs will be made after the work programme is agreed upon and with the members in scheduled meetings in autumn 2009 and begin 2010 once the task would continue with the than established team.

I. Securing sustainable biomass supplies

To deliver refined insights in availability and potential production and supply of biomass resources on regional, national and global level. This explicitly includes a range of biomass residue streams, land use and competition for land and on various markets. This objective is in particular to be tackled by inter-task collaboration as described above. For Task 40 the focus will lay on development of supplies at large in relation to various drivers (demand development, improvements in production and logistics) and barriers (e.g. lack of investment, sustainability concerns).

Proposed activities:

- Define a set of deliverables on biomass resource availability and supply, jointly with Tasks 29, 30, 31 and 38 to deliver improved biomass resource assessments. This could include several reports that are provided for IEA Bioenergy as a whole with support of the Strategic Fund and set-up as a special project. Such work can be embedded in a (small) series of cross-task events in a fixed period of time (e.g. 1-2 years) to deal with cross-task issues. This work can start from and apply state-of-the-art analysis methods that include sustainability demands and macro-economic drivers, which are being developed in various national and international frameworks. Examples are found in work of UNEP, IFPRI, German, Dutch and Swedish research institutions, as well as analysis work in non-OECD countries.
- Task 40 could in particular focus on overall availability and supplies, land-use and market aspects (more on macro-level) compared to the more biomass production oriented work of tasks 30 and 31. Competition issues with the food and forest product markets integration and modernisation of agriculture, land-use competition are part of this. Assessment reports are a first type of deliverable that can be provided by Task 40.
- Task 40 should also focus on specific biomass streams, such as (improved) availability of biomass residues and on biomass production (and exporting) regions outside the OECD. This can be tackled by concrete case studies, partly covered in ongoing work of the NTL's institutions. In doing this, specific attention is to be paid to required investments and infrastructure to develop potential resources into actually available resources. In analysis work, specific attention can be paid to how demand for biomass affects biomass supplies and availability.
- Task 40 can also go into the organisational aspects of mobilising and sourcing biomass for international trade to identify which approaches have worked and where. This can be tackled by concrete case studies. In addition, such experiences can be scrutinised in the light of new policies for biomass production and trade (e.g. including certification).

II. Sustainability and certification

To determine how the sustainable production, use and especially trade of biomass can be secured optimally and efficiently, in particular from a market perspective, with specific attention for how certification/verification schemes in existence or under development are or may affect trade, and how these can be implemented pragmatically and efficiently.

Proposed activities:

- Maintain the overview in the field of sustainability criteria for biomass, biofuels and trade, with a focus on contents of systems proposed and applied, practical experiences and implications for the market and trade.
- Provide information and develop further dialogue with strategic stakeholders in this field (e.g. GBEP, EC, Roundtables, NGOs such as WWF, etc.), for example by organising dedicated workshops. Harmonisation of sustainability requirements and facilitation of open trade are to be key objectives for such dialogue.
- Advance on understanding how sustainability criteria affect resources, markets and trade by state-of-the-art analyses. T40 could focus on providing an overview of recent analyses, a synthesis of those, as well as by dedicated own work.
- Evaluating practical experiences with certification by market parties, including the pro's and con's of varying approaches (such as track and trace vs. book-andclaim, practical traceability of biomass streams). Concrete proposals for certification and verification can be evaluated by the task and bottlenecks identified.
- Analyse how sustainability criteria and certification affected market activity and international bioenergy trade, with some emphasis on the implications for market players.
- Dedicated workshop(s) could be facilitated or supported by Task 40 in this area in collaboration with mentioned parties and frameworks.

III. trade, market and demand dynamics

To map and provide an integral overview of biomass markets and trade on global level, as well as for specific regions, identify and map new markets and products (such as Jathropha oil, demand from industry, heating markets, biomethane, biorefining and future 2nd generation biofuels production). Deepen the insights on existing key market, especially bio-ethanol, biodiesel/vegetal oils and pellets (the latter including super-pellets and TOPS, and pellets from agricultural feedstocks). Improve the understanding on how biomass trade and markets respond to fluctuating (fossil) energy prices as well as the developments on global markets for food and forestry products and carbon trade and pricing. Specific attention is paid to the balance between demand and supply aspects versus structures, institutions, drivers, technologies, etc. influencing demand and how to organise biomass trade under dynamic conditions observed in the market. Attention for barriers for trade remain important as well.

Proposed activities:

- Map developments in the field of Jathropha (oil) production, as well as other ''new' oil crops.
- Map developments and opportunities in the field of biogas production and trade (focus could lay first on the European gas market). This could include production of gas via upgrading biogas produced from digestion as well as SNG (Synthetic Natural Gas produced via gasification of solid biomass).
- Explorative analysis to map the potential, implications and importance for green electricity trading (from biomass), and compare advantages and disadvantages to the physical trade of biomass
- Explorative studies to increase the understanding of possible additional demand of biomass for the heating market, new biomaterials (biochemicals and new biorefinery concepts in particular), use of biomass as reducing agent in the steel industry a.o. and (future) 2nd generation biofuels.
- Integrating analysis and provision of an integral picture of developments of possible future biomass demand and evaluation of the competition for biomass resources from different markets.
- Assessment and analysis of the possible impacts of emission trading (e.g. under the expected follow-up of the Kyoto Protocol) on physical biomass trade as well as the effects of energy prices; partly to be tackled by modelling and evaluation of available model results.
- Build better understanding of the impacts of policies (targets, incentives, sustainability requirements) on biomass markets and trade. This could partly be tackled by mapping current policies in key countries, analyses using existing state-of-the-art models and partly by covering this topic on or more events.
- Evaluate the use of existing price indices (not exclusive to bioenergy) and possible (contribute to) the development of a new price index for solid biomass. The commoditisation of especially the international pellet markets is a specific point of attention.

IV. transport, logistics and trade
Provide (further) insights in international biomass supply lines and logistic requirements (including new producing regions, i.e. developing countries and Eastern Europe) and these can be optimised over time. This includes increasing our understanding of how costs of biomass production, pre-treatment and transport can be reduced over time, e.g. through better organisation and applying more efficient technology and can include forecasting exercises on required logistic capacity to facilitate increased biomass use and trade. Key themes are increasing the efficiency of biomass supply chains and use of biomass and the required investment and organisation of actually develop biomass potentials into actually available biomass.

Proposed activities:
- Case studies on how infrastructure, supply lines and international transport have been and can be optimised further over time. In particular cost reduction is a major point of attention, e.g. by economies of scale, deployment of advanced technologies (e.g. torrefaction) and by good planning of logistics.
- Analysis (of concrete importing and exporting regions) of logistic capacity to accommodate biomass supplies, biomass derived products and trade and how this can be optimised over time. Such work could focus on regions where increased market activity is or has been observed and go into capacity of transport corridors, harbours, storage, etc. Results could be presented in concrete roadmaps for developing biomass supply, storage, transfer transport and (pre-)treatment capacity. The work should also tackle key preconditions to achieve this, such as capital availability and dealing with uncertainties in capital and commodity markets.
- Evaluate how successful infrastructure and trade has been developed in specific markets and how such experience can be transferred to emerging regions and sectors. This should also include learning from the wider experience in trade in food and forestry products as well as fossil energy as well as the required investments to develop infrastructure and supplies.

V. Outreach and dissemination
High quality dissemination; the Task is to provide a key international platform (with a diverse range of stakeholders) for bioenergy trade and markets (covering supply and demand, sustainability, financial products etc.). Findings of the Task are translated in analysis and advice for industry and entrepreneurs, policy makers and other stakeholders (such as NGO’s).
It aims to do so by providing high quality information and analyses, providing overviews of developments, be a linking pin between different arena’s involved in the debate, a clearinghouse for information and by targeted dissemination activities and cooperation with relevant organisations such as the GBEP.
Opportunities for industry and research partnerships are specifically sought after, aiming at more networking-type events to attract the attention of market parties.

Proposed activities (besides the existing activities and meetings, flow of products, website, etc.):
- Book publication on the working field of the task. Can e.g. systematically cover how international biomass markets have developed and how they are mapped, case studies on international trade chains, case studies on biomass production regions and impacts, developments on certification and how this works out in practice, etc.
- Special Issue for a high quality scientific journal, focusing on the scientifically new insights within the working field of the task.
- Provide tools (e.g. spreadsheet model) for analysis and optimisation of logistic chains.
- Link up the task to industry focused events (i.e. joint workshops/side events at relevant events.
- More popular publications for a wider audience (industry journals, economist, etc.)

Outreach
The strong representation of market parties in the Task and the value of results for market parties make Task 40 relatively unique in the Bioenergy agreement.

One strategy is to stimulate dual NTL's with one representative from academia/research and another from industry. This character should be strengthened but involving more companies in the work (which is currently worked on with involvement of EON (UK) and CHOREN (Germany), organising market oriented events (the concept of business fora should be strengthened) and by carrying out dedicated analyses for market parties; exact products need to be defined by industry.

Another characteristic of Task 40 is the interest and involvement of international bodies. The links to GBEP, the UN system (UNCTAD, UNEP, UNECE and FAO), as well as parties like WTO, the World Economic Forum, WWF and the World Bank, provide unique possibilities for addressing bioenergy trade and market development at high level. Task 40 aims to further strengthen the collaboration with those bodies and strive for formalised contacts (joint participation, exchange, carrying out concrete work) on international level.

4. MANAGEMENT

4.1 Participation.

Current IEA Task 40 Country members are:

- Austria (representing party: TU Vienna)
- Belgium (representing party: VITO)
- Brazil (representing parties: University of Campinas)
- Canada (representing party: Climate Change Solutions/CANBIO)
- European Commission (representing party: DG Environment)
- Finland (representing party: Lappeenranta University)
- Germany (representing party: Oeko-Institut and targeted industry representative: Choren)
- Italy (representing party: Api Nova ENERGIA / ETA-Florence)
- Japan (representing party: AIST)
- Norway (representing party: ENOVA/UMB)
- The Netherlands (representing parties: Nidera / Copernicus Institute – Utrecht University)
- Sweden (representing parties: First Bioenergy AB)
- United Kingdom (representing party: Imperial College and EON as targeted industry representative)
- United States (representing party: Idaho National Laboratories / Kansas State University)

Additional countries that expressed serious interest in IEA Task 40 for the new triennium are: Australia, Denmark and Ireland.

With 14 and perhaps even more members the work of the task may be served by organising specific thematic subgroups (e.g. following the 5 main themes above or by selecting one or more). This is to be discussed in the team.

*Furthermore, it should always be kept in mind that any Task under IEA Bioenergy is first of all a **network** in which activities and knowledge from its members is brought together. The work of the task therefore strongly relies on the input provided based on work done (or collected) by its partners. Providing overviews and assessments of those activities is a first priority therefore. Up to date country reports will for this reason also remain a stable component of the work programme, which serves a variety of (sub-)objectives of the work. In addition, the task funds can facilitate some additional analysis in dedicated task projects, but these are relatively small compared to larger national research and market activities.*

Finally, the work programme should be seen as a framework with flexibility for modifications and concrete specific ideas that are developed by the group over time. Also, there is some 'spare capacity' to deliver responses to 'sudden events' (such as the financial crisis and strong fluctuations in energy and food prices) relevant for the working field of the task.

4.2 Collaboration with Other Tasks
Collaboration and exchange with other IEA Tasks is generally strongly supported by ExCo and over 2004-2009, Task 40 has worked with Tasks 29, 30, 31 and 38. Smaller contributions were made to work of Task 39 and 32.

The issue of biomass resources, impacts of production and utilisation and international trade proves to be an essential area for bioenergy as a whole. This field is extensive and has a strong cross cutting character. Links with a variety of existing IEA Tasks are much desired in order to ensure synergy and good embedding in the ongoing activities of the Bioenergy Agreement.

- The developing markets for biofuels for transport (Task 39) and biochemicals (Task 42) are key fields for joint work, e.g. addressing the development of markets for second generation biofuels and on advanced biomaterials linked to development of biorefineries. Also developments around biogas (including SNG) production, use and trade are a possible area of work with Task 37.
- The role of new or improved technology on development of biomass supplies and demand is a field of collaboration with the technology oriented Tasks (pyrolysis, gasification, and (co-) combustion 32, 33 and 34).
- With Tasks 29, 30 and 31 many key joint issues remain on how biomass production can be realised in a sustainable way in practice.
- An important discussion took place in ExCo 62 on how IEA Bioenergy can deliver strong output on how to secure sustainable biomass production and supplies. It was acknowledged that this is such a broad issue that not one task can tackle this alone. Tasks 29 (socio-economics) 30 (biomass crops), 31 (forestry), 38 (GHG balances) and 40 liaised and proposed that in their respective work programs substantial collaborative efforts would be included on this point. A key element could be the agreement on producing specific joint events and deliverables on behalf of IEA Bioenergy and with support of the strategic fund and the technical coordinator. All tasks involved agreed this would be a good idea. The Task 40 work program therefore contains a separate paragraph dealing with this (see section 3). This paragraph is to be aligned with the other relevant task proposals. With Task 38, joint work on sustainable biomass production, supplies and certification procedures is desired, given the (observed) synergy between certification efforts for biomass trading as well as for CDM projects. This is also true for addressing specific accounting rules for GHG impacts. Under this header, for Task 40 the focus will lay on development of supplies and biomass availability at large in relation to various drivers (demand development, improvements in production and logistics) and barriers (e.g. lack of investment, sustainability concerns).

Collaboration with other circuits
Between 2004 and 2009, events were organised in cooperation with other international projects such as EUBIONETII and bodies such as the world bank and FAO.
Task 40 aims involve various key sectors (agriculture, forestry, NGO's, transportation and logistics) stronger in the events and collaborate on written deliverables.

Collaboration is established with various (research) networks such as EUBIONET-III (ongoing till 2011) and within various EC funded research activities. Such collaboration is to be strengthened, optimised and extended (e.g. to GBEP) further to support the objectives of the Task.

4.3 Suggested work program and outline of possible events
A base frequency for public events is 2 per year, but in practice some 3-4 events are (co-) organised by Task 40 per year. The schedule of events should first of all match with the work program priorities and is ultimately determined by the priorities of the Task members. The mentioned dates and locations are therefore fully tentative.
Furthermore, scheduling events will be combined with other activities such as business fairs, conferences and specific workshops when possible and appropriate.

A possible crude outline of events for the period 2010-2012 is given below:

Suggested date	**Potential content of event**	**Parties/IEA Tasks involved and suggested location (*)**
January 2010	Internal Task kick-off meeting for establishing and organising the work program for 2007-2009.	Largely internal Task 40 event. Netherlands
Spring 2010	In depth workshop on better understanding the forecasting of international biomass markets, bringing together key analysts from e.g. OECD, GTAP, industry (agro-commodities, energy traders) and Integrated Assessment Models	Austria
Winter 2010	Technology and logistics workshop on potential learning potential of international supply lines.	Italy
Spring 2011	Joint IEA Bio-energy wide workshop on securing sustainable biomass resources.	Under discussion
Autumn 2011	Joint workshop with UNCTAD, UNIDO, etc. on state-of-the-art mapping of barriers and opportunities for trade.	Id.
Winter 2011	Joint workshop embedded in GBEP, together with WTO with various Roundtables, UNEP (etc.) on the implications of certification for sustainable biomass production, markets and trade.	Id.
Spring 2012	Industry workshop on risks and opportunities for investment in biomass production for the international market in different regions in the world (tackling Sub-Saharan Africa, Eastern Europe, MercoSur, SE Asia)	Id.
Autumn 2012	Joint event with T39 and T42 on mapping potential new market demands for biomass (in particular 2nd generation biofuels and biochemicals.	Id.

(*) Typically, T40 events roulate among the member countries. Specific conferences, workshops (etc.) organised by non-task parties may justify holding meetings in other locations. Furthermore, internal task meetings art typically held connected to an open event. Regular task meetings normally last 1,5-2 days and allow for detailed discussion and organisation of task work.

4.4 Finance

Annual budget (calculated from Euros' to U$ using exchange rate at median price of: 0.737 Euro/U$ on March 27, 2009 (http://www.oanda.com/convert/classic)) estimates related to the membership and budget for Task funded research activities is given in the table below.

No. of paying members	**Annual fee per member (U$)**	**Total annual budget (U$)**	**Estimated budget for Task funded research activities (U$) (*)**
12	17,000	204,000	48,000
13	17,000	221,000	65,000
14	17,000	238,000	82,000
15	17,000	255,000	88,000
16	17,000	272,000	95,000
17	17,000	289,000	109.000

(*) Includes the 10% reservation of task budget for the Strategic Fund of the Bioenergy Agreement

Cost factors

- Staff costs (personnel capacity): 40%
- Task funded research activities: 10% (up to 25% depending on membership status)
- Accommodation and consumables for meetings: 10%
- Travel Dutch (coordinating) parties and invited (non-Task member) experts: 15%
- Secretariat, dissemination and website (organisation of events, production of integrating Task output for newsletters, papers, etc.): 10%
- Annual reporting (IEA) requirements: 5%
- Budget for IEA ExCo initiated activities (10%)

Annual costs to run the Task (organisation and management, coordination of events, coordination of dissemination, related travel of coordinating parties, quality control of output and provision of (part of the) output is estimated at a stable 85 kEuro/yr.

The expected surplus by some 14 paying members is to be spent on internal Task research and activities to be carried out by the members. Task 40 has developed an efficient working culture of launching short and targeted internal research activities, resulting in very popular and timely analyses and publications.

Mobilising other funds
Research funds should be attracted for more complex issues as modelling efforts, development of certification schemes and concrete feasibility studies on regions, countries and specific projects. Some concrete options are:

- Upcoming calls of the EC on certification and biofuel markets (FP7 and IEI). Given that sustainable biomass production and certification are now key priorities for the Commission, Task 40 is well positioned for such calls. Also, FP7 is much more flexible for carrying out joint work with countries outside the EU.
- Bilateral or multilateral combination of research efforts by proposing joint or merged proposals (e.g. funds of SenterNOVEM, TEKES, STEM, DTI, GTZ and FNR…); in various countries specific programmes are being prepared or available to carry out research and support pilot activities targeting sustainable biomass production, supply and use, including export.
- Work for and with international parties as GBEP, IEA, the UN system (UNEP, FAO, UNCTAD, World Bank and relevant Roundtables (RSPO, RSS, BSI, RSB).

4.5 Management structure
The structure of the management (combined leadership of Copernicus Institute, Utrecht University and Nidera, a leading company in the sourcing and trade of agro-commodities and activities in the trade and use of biomass for energy production, with supervision from SenterNOVEM as Operating Agent is proposed to be continued. This has been formally proposed by the Operating Agent in ExCo 62 and is supported by the Task 40 members.

The Copernicus Institute will, supported by the bioenergy research activities (with some 10 research staff involved) coordinate the scientific content of the Task and be responsible for synthesis and integration work and reporting, combined with supporting everyday management of the Task.

Nidera, being a leading company in the sourcing and trade of agro commodities and activities in the trade and use of biomass for energy production is responsible for the management and finance issues.

A brief description of both parties and CV’s of the current Task leaders Andre Faaij (Copernicus-UU) and Peter-Paul Schouwenberg (Nidera) is given in the appendix, as well as the CV of Martin Junginger (Copernicus-UU) who performs key activities for the Task on both content and management field.

APPENDIX: BACKGROUND COORDINATING PARTIES

COPERNICUS INSTITUTE - UTRECHT UNIVERSITY; DEPT. OF SCIENCE, TECHNOLOGY AND SOCIETY.
STS is a department of the Faculty of Science of the Utrecht University and integral part of the COPERNICUS Institute for Sustainable Development (~100 research staff). The research covers: Energy System Analysis, Energy and Material Efficiency, PV and Wind and Biomass Energy, Fossil fuel decarbonisation, Land Use and Biodiversity, Climate Change, Risk Management and Assessment, Energy Technology Development and Implementation, energy consumption and economic growth and energy RD&D policies towards a sustainable future.

The Energy Supply and System Studies work has an excellent international reputation with collaboration worldwide. Work covers EU-research programs, national government, private sector, the IEA (PVPS, Greenhouse Gas R&D programme and the Bioenergy Agreement), the UN, WEC, IPCC, WWF and FAO. Key activities in the research on biomass and waste are:

- Studying and modelling of conversion technologies, e.g. with flow sheeting models.
- Biomass resource assessment studies from global to regional and including wastes, residues and dedicated biomass production systems.
- Economic and external cost analyses.
- Life Cycle Analysis and Environmental Impact Analyses.
- Models for micro- and macroeconomic analyses, cropping systems yield models and LP-modelling for optimisation of bioenergy systems.
- Scenario studies.
- Studying non-technical barriers, policy, RD&D and implementation strategies.

For more information see: http://www.chem.uu.nl/nws/www/nws.html

Short CV: Prof. Dr. André P.C. Faaij (1969) is appointed as Professor 'Energy System Analysis' at the Copernicus Institute for Sustainable Development (Faculty of Science) of the Utrecht University. He has a background in chemistry and environmental sciences and holds a Ph.D. on energy production from biomass and wastes. He worked as visiting researcher at the Center for Energy and Environmental Studies - Princeton University and at King's College - London University.

His main research experience and interests concern energy system and scenario analysis and modelling, bio-energy and other renewables, bio-energy markets and international trade, land use and land use change, sustainability assessments of energy systems, alternative transport fuels, decarbonisation of fossil fuels (capture and storage of CO_2, hydrogen economy), waste treatment, material and energy efficiency, technological learning and innovation in energy systems, GHG balances and accounting, energy and research policies.

He coordinates a research unit on energy supply and system studies (~25 research staff involved), covering bio-energy, sustainable use of fossil fuels, intermittent energy sources and energy system studies and modelling. In 2000, 2004 and 2007, external evaluations qualified this research as *Very Good – Excellent'* with respect to *'Productivity, Quality, Viability and Societal Relevance'*, showing strong international leadership in its' core areas as Bio-energy and Carbon Capture and Storage.

He supervises a range Ph.D.-projects and jointly coordinates a Master Programme *'Energy Science/Energy and Resources'*. Over the years, he developed and coordinated courses for various curriculae, e.g. on research methods for energy and material systems. He is in particular experienced in research and management of research in a multidisciplinary as well as international setting. Examples are programmes for the National Science Foundation, the 5-year CATO programme on Sustainable use of fossil fuels and a wide range projects for the EC, international bodies and companies. He also initiated the BIOPEC initiative, a Public Private Partnership targeting sustainable biomass production, certification and trade across the globe. To date, he initiated, coordinated and executed over a hundred projects and programmes.

He is a member of a variety of expert groups in bio-energy and energy policy, research and strategic planning. He works as an advisor for governments, the EC, IEA, the UN system, GEF, OECD, WEF, the energy sector and industry, strategic consultancy, NGO's, etc. He is Task Leader of Task 40 under the Bio-energy Agreement of the International Energy Agency on *'Sustainable International Bio-energy Trade'* and, in the same framework, acted as national representative in several other tasks. He is an advisor to the UN Biofuels Initiative and FAO's bioenergy activities, supported by the G8 Global Bio-energy Partnership. In 2008, he joined the IPCC team as Convening Lead Author to draft the Special Report on Renewable Energy, the new Global Energy Assessment (GEA) and he was honored with the title 'Young Global Leader' by World Economic Forum and is a member of its Global Agenda Council on Alternative Energies.

Earlier, he was Lead Author for the World Energy Assessment of the United Nations, the WorldWatch Institute's book on Biofuels for the 21st Century, the IPCC 4th assessment report and IEA's World Energy Outlook.

He is board member and works as guest editor for the journal Biomass and Bioenergy and is reviewer for a variety of journals, scientific and government bodies. He published over 450 titles in scientific journals, reports, books and proceedings, (co-) organised a range of international workshops and conferences and is frequently lecturing across the globe.

CV, Dr. Martin Junginger: he is senior researcher in the energy supply group of the Dept. of Science, Technology and Society (STS). After writing his MSc thesis on supply chains for large-scale biomass plants in developing countries, he joined the department in 2001 as PhD student, doing extensive research on the technological development and associated cost reductions of several renewable energy technologies, including onshore and offshore wind farms, biomass CHP plants in Sweden and biogas plants in Denmark. After obtaining his PhD in May 2005, he has mainly been working on the topic of Sustainable International Bioenergy Trade. He is also strongly involved in work on biomass sustainability criteria and certification. Furthermore, he has supervised several M.Sc. students over the past 5 years with a wide range of topics.

NIDERA HANDELSCOMPAGNIE B.V.

The Nidera Group is a services and solutions provider in the international agriculture and energy markets. Nidera Handelscompagnie B.V. was established in 1920 in Rotterdam, it is a privately held company and currently employs over 3000 people in 22 countries.

The company has strong traditional roots in origination, marketing and trading of agricultural commodities and in agribusiness. Other related activities include the operation of blending and storage facilities, trucks and railcars, elevators, processing plants, vegetable oils refining and bottling. In South-America Nidera is also engaged in the R&D of agronomic seeds and in the handling of a wide range of agricultural inputs.

The traditional Origination, Marketing and Trading activities are divided into the following product groups:

- **Grains:** (durum) wheat, corn, sorghum, feed, (malting) barley, oats and rye.
- **Oilseeds:** soybean, sunflower seed, rapeseed and their oil and meal byproducts, mid-protein feeds, specialty oils crude and refined.
- **Vegetable oils:** edible oils (groundnut, corn and refined vegetable oils), crude edible oils (soybean, sunflower seed, rapeseed, coconut and palm oil) and castor oil derivatives.
- **Oilseed meals:** copra meal, palm meal, soybean meal and sunflower seed meal.
- **Rice:** products of various types and qualities, to selected markets in West Africa and the Caribbean.
- **Ocean freight:** full scope trading to support the group's physical business and generate additional cargo in other products.

Agribusiness activities include:

- **Seeds:** research, breeding and development of hybrid and varietal seeds like corn, soybean, wheat, sorghum, sunflower and canola.

- **Crop nutrition:** fertiliser distribution and farm service centers.
- **Crop protection:** production and distribution of herbicides, insecticide and fungicides.
- **Origination and processing:** grain and oilseeds storage, conditioning and export. Manufacture of crude and refined vegetable oil, and their animal feed byproducts. Rice procurement and processing.

NIDERA ENERGY
The emergence of bio-energy is without doubt one of the most important developments in the agricultural markets in recent years, with strong effects on price, volatility, trade flows and supply-demand equations. There has been tremendous growth in biodiesel, bio-ethanol and biomass-to-power plant capacity, and a strong incremental demand for a range of products previously predominantly sold into the food and the feed industry.

Through Nidera's activities in bio-energy, and our traditional experience in the sourcing, trading and risk management of agro-commodities, Nidera is in the unique position to bridge the gap and unite feed, food and fuels markets, and offer a multitude of services to the bio-energy industry, including full supply chain management services. Nidera became active in biofuels on 2006, green power in 2007 and formally established an Energy Business Unit in 2008.

The main product groups of Nidera Energy are:
- **Biofuels:** Biodiesel and ethanol supply, shipping and trading. Supply of feedstock material to producers.
- **Biomass:** Supply of liquid and solid biomass products to producers of renewable energy. See below.
- **Green Power:** Nidera is a partner for small-to-medium scale power producers by offering marketing as well as risk management services (hedging in- and output), assistance with operational activities such as grid access activities, portfolio management, access to power exchanges and OTC markets
- **Carbon:** CDM/JI projects and EUA trading

NIDERA'S BIOMASS GROUP
Nidera actively supplies biomass products for co-firing to power producers in Europe. As Nidera has been trading products suitable for biomass for many years, Nidera has long-term and well-established relationships with clients in the origin, and good logistical experience. Therefore Nidera can offer long-term security of supply of Biomass to customers.

Biomass comes in both liquid form and solid form. Our product range includes:
- Woodpellets, woodchips and bark in various qualities
- Palm kernel expellers (PKE) and palm kernel shells (PKS)
- Palm oil and palm fatty acid distillate (PFAD)
- Olive cake and olive meal
- Agri-waste products such as sunflowerseedhusk-pellets, bagasse-pellets, ricehusk-pellets, Peanut-pellets, and so on

Nidera's biomass group will achieve long term objectives via developing strengths in the origination, asset management and market development areas, by extending business activities into engaged partnerships, asset investments, and third party sales.

Nidera want to be a key player/partner in realising the European CO2-Emission reduction targets: 20 % in 2020, increased to 30 % if a new climate treaty (post Kyoto) is reached, meaning 21 % reduction EU-ETS participants compared to 2005.

Short CV Peter-Paul Schouwenberg (1958)

3/'09 -	Manager Biofuels Trading and Development, Nidera Handelscompagnie BV Responsible for the Trading and Development of biofuels/biomass all over the world;

9/'08 - 2/'09	Director Biofuels and Development, Duferco Investment Services SA. Responsible for the Trading and Development of biofuels/biomass, investment programme in biomass assets, all over the world;
8/'02 - 8/'08	Vice President Biofuels Procurement and Development, Global Commidities, Essent Trading International B.V. Responsible for the Purchase and Development of biofuels/biomass all over the world;
11/'98 - 7/'02	Coordinator Environment and Permits, Business Support, Essent Energie Productie B.V.. Responsible for the permits from all the power plants of Essent.
11/'87 - 10/'98	Company lawyer, Legel Department, ElectriciteitsProductiemaatschappij Zuid-Nederland (EPZ) B.V.. Responsible for public and regulatory affairs.
6/'86 - 10/'87	Company Lawyer, Executive Board Office, Provinciale Noordbrabantse Electriciteits Maatschappij (PNEM) N.V., Responsible for public and regulatory affairs.
9/'81 - 5/'86	Legal Employee, Project Management, municipality 's- Hertogenbosch.