

European Biofuels Technology Platform: Third Stakeholder Plenary Meeting

Speakers: CVs & Abstracts

WELCOME & KEYNOTE ADDRESS

Véronique Hervouet

Chair of Steering Committee (SC), European Biofuels Technology Platform, Total

Véronique Hervouet is Senior Vice President, Investments, Total Energy Ventures. She is Chair of the Steering Committee of the European Biofuels Technology Platform and Vice chair of the Evaluation Committee of the Bioenergy Program of the French National Research Agency. She is a graduate engineer from Ecole Centrale de Lyon (France), Master of Science in Materials Science & Engineering from Cornell University (USA). She has 23 years of experience in the oil & gas industry within Elf & Total (Exploration & Production, Refining & Marketing, Petrochemicals, Chemicals) with responsibilities in the areas of Research & Development, Business and Strategy.



POLICY FRAMEWORKS

Moderator: Véronique Hervouet

Chair of Steering Committee (SC), European Biofuels Technology Platform, Total

Raffaele Liberali

European Commission, DG Research, Director of Directorate K – Energy

Raffaele Liberali was appointed Director for "Energy" within the Directorate-General "Research" of the European Commission in October 2006. He is in charge of the implementation of the Non-Nuclear Energy priority of the 7th Framework Programme, as well as the definition of political priorities and the coordination with Member States and research/industrial stakeholders in the field of non-nuclear energy technologies, including the conception and implementation of the SET-Plan. This work is carried out in close cooperation with DG Transport and Energy. He was born and educated in Rome, where he obtained a Masters degree in Mechanical Engineering. After different experiences in industry, he joined the European Commission in 1978, where he first worked as Scientific officer in Directorate-General "Energy". He has subsequently worked in Directorates-General "Credit and Investments", "Personnel and Administration" and, since 1996, Directorate-General "Research".



Biofuels and the road to the EU Energy&Climate 2020 targets – perspectives from the European Commission

The adoption of the Renewable Energies Directive sets the framework conditions for the bioenergy industry to contribute to the goal of 20% renewables in the EU energy mix. Bringing the necessary technologies to the market beyond a business as usual scenario is essential to reach this goal. The European Industrial Initiatives (EII) within the SET Plan are a central instrument to shift into a higher gear for fast technology deployment. For all applications and especially the transport sector, bioenergy will play a key role in reaching the EU 2020 targets, contributing up to 14 % of the EU energy mix and up to 10 % of energy demand in transport. To achieve these objectives, the core activities of European Industrial Bioenergy Initiative (EII) will focus on supporting demonstration projects and/or reference plants for innovative bioenergy value chains with large market potential, based on different sustainable feedstocks and technological options.

The bioenergy stakeholders and especially the EBTP contributed proactively to elaborate the EII Technology Roadmap that is part of the EC Communication on "Investing in the Development of Low Carbon Technologies" (7 October 2009). Now, industry is called to join the governance body of the EII (EII Team) to work on the effective implementation of the roadmap together with the Member States, EC, and financing and RTD communities. Both the Council and the European Parliament support the roadmaps as the basis to move forward collectively and call for additional financing - the Parliament calling for at least an additional EUR 2 billion per year in the EU budget (EP resolution, 11 March 2010 and Energy Council Conclusions, 12 March 2010). The Commission is fully committed to working closely with all EII Teams on the implementation plans and to finding optimal financing options to make the EII a success.

Ian O`Gara

Accenture

Ian O`Gara is the Biofuels lead for Europe and Africa for Accenture. He has worked with a range of clients including investors, start-ups and government. He focuses on strategy, investment and decision support, organization design and supply chain. Ian has extensive energy industry experience, including strategic work with major international oil and gas companies in Europe, the US, FSU and Africa. Prior to joining Accenture, Ian worked for 6 years with BP where he worked in roles with trading, refining, sustainability and international marketing.



Betting on Science: Disruptive Technologies in Transport Fuels

Never before has there been so much uncertainty about the future supply and demand for hydrocarbons. There are a number of reasons for this uncertainty, but technology assumptions are a key driver. New technologies that have higher yields per unit of energy input or allow new sources of energy to be cost competitive can completely change the supply and demand levels. This speech will examine three categories of future transport fuel. "Technology stretching the current asset base" looks at items such as the next generation internal combustion engine. "Fungible fuels" looks at fuels such as butanol and algae. "Electrification" looks at new technology such as batteries and issues such as putting vehicles to the grid. In addition to new and advanced technologies, political, regulatory and environmental pressures will influence the adoption of new transport fuels, typically by market.

The speech is based on a recent Accenture report entitled: "Betting on Science: Disruptive Technologies in Transport Fuels", http://www.accenture.com/Global/Services/By_Industry/Energy/R_and_I/Betting-on-Science.htm. The study's lead author is Melissa Stark. Ian O`Gara was one of the co-authors.

SUSTAINABILITY

Moderator: Sandrine Dixson-Declève,

EBTP – Steering Committee, University of Cambridge Programme for Sustainability Leadership

Sandrine Dixson-Declève is the Director of the EU Corporate Leaders Group on Climate Change (EU CLG) and the Director of the Brussels Office for the University of Cambridge Programme for Sustainability Leadership. The EU CLG was set up in 2007 and brings together business leaders from a cross section of EU and international businesses to develop policies for tackling climate change. Previously, she ran Hart Energy Consulting's new International Sustainable Energy Exchange (ISEE), and was the Executive Director, Europe & Africa for HART Energy Consulting from 1998 to 2009, running the International Fuel Quality Center (IFQC), the Global Biofuels Center (GBC), and the World Refining & Fuels Service (WRFS). She has been a personal advisor to several Members of the European Parliament, and advised the European Commission, Governments in Asia, Africa and the Middle East, international organizations including the Organization of Petroleum Exporting Countries (OPEC), the Asian Development Bank (ADB), the Organization of Economic Cooperation & Development (OECD), the United Nations Environment Programme (UNEP), the US Agency for International Development (USAID) and energy and transportation business leaders. She sits on the Advisory Board of a major African oil company and on the Steering Committee of the European Biofuels Technology Platform and has published numerous articles/presentations on sustainable energy, climate change and transport, conventional and alternative fuel quality legislation as well as on trade & environment. She holds an M.Sc. in Environmental Sciences from l'Université Libre de Bruxelles and a B.A. in International Relations and French from University California Davis.



Ron van Erck

European Commission, DG Energy Unit C1, regulatory policy and promotion of renewable energy

Ron van Erck works as policy officer on renewable energy in the European Commission since the beginning of 2009. Currently, he is responsible for elements of the implementation of the sustainability regime for biofuels; wind energy and renewables in cars. Furthermore, Ron works on the implementation of the Renewable Energy Directive in the Energy Community (Western Balkans), the EEA and accession countries as well as on the International Renewable Energy Agency (IRENA). Before working for the Commission, Ron worked for the Ministry of Economic Affairs of the Netherlands on the development of a new support scheme for renewable energy and on the negotiations for the new Renewable Energy Directive.



Defining and implementing sustainability for biofuels – view from the European Commission

Daniela Thrän

EBTP, German Biomass Research Center (DBFZ)

Daniela Thrän is a graduate Diplom-Engineer for environmental technologies from the Technical University of Berlin. For the past seven years she has been Head of the Department "Bioenergy Systems" of IE Leipzig / Deutsche BiomasseForschungszentrum (DBFZ) and is in charge of the coordination and management of national and international research projects for governmental, industrial and non-governmental organisations. Her work focuses on resource analysis on biomass, standardisation of solid biofuels, assessment of biomass technologies and trade, sustainability aspects and system integration of biomass and bioenergy, and development of market implementation strategies and support schemes for bioenergy. She is also a lecturer at the Technical University of Freiberg/Saxonia and a member of working groups at ISO, CEN, VDI, DIN and European technology platform for biofuels. She has over 100 publications in the field of biomass. Since January 2010, she is the speaker of the Department "Bioenergy" of the Helmholtz Centre for Environmental Research (UFZ).



R&D topics for the sustainability of biofuels: Key messages from the SRA update

Defining and implementing sustainability for biofuels – view from Industry and NGOs

Panel Discussion

Rob Vierhout

EBTP – Working Group 5 "Markets and Regulation", European Bioethanol Fuel Association

Robert M.S. VIERHOUT, Secretary-General of the European Bioethanol fuel Association (eBIO), graduated (1984) from the University of Nijmegen (NL) in political science and European law and began his career as an academic researcher at the same university. He worked several years at the European Parliament and then in 1992 joined Deloitte & Touche management consultants to become senior consultant public affairs. In this position he advised mainly corporate clients on European regulatory affairs and participated in various strategic studies. In 1997 he set up a Brussels-based consultancy, European Affairs Management bvba, providing public affairs support to several international companies and (interest) organizations in different sectors (financial services, agriculture, chemicals, trade and public health). Robert started providing EU political and strategic insight for the European ethanol sector 10 years ago. He is still director at EAM bvba.



Frederic Hauge

EBTP – Steering Committee, Bellona Foundation

Frederic Hauge is President of the Bellona Foundation, which he founded in 1986, at the age of 20. Through investigation, documentation, legal action and non-violent activism, Bellona has dramatically impacted the way Norwegians think of and relate to environmental matters. More importantly, the Foundation has facilitated concrete changes in environmental policies among political and industrial leaders in Norway and internationally. Today, Bellona is an international scientific and technology-based environmental NGO with 75 employees in Norway, Russia, the EU and the USA. In 2007, he was elected Vice Chairman of the European Commission's Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP), and the same year TIME Magazine named him a Hero of the Environment. In 2009, Frederic Hauge was elected Steering Committee Member of the European Biofuels Technology Platform (EBTP). Later in 2009, Frederic and Bellona became the fourth partner in The Sahara Forest Project.



Defining and implementing sustainability for biofuels – view from Bellona

Approximately 70% of the world's greenhouse gas emissions come from activities related to the energy sector. Thus, we need to find ways to radically change the way in which we supply energy for our houses, vehicles and industry. Bellona's estimates show that it is possible to reduce global greenhouse gas emissions by 85% by 2050 (as the IPCC has said is necessary), mainly through energy efficiency, renewable energy and carbon capture and storage. One of our main findings are that sustainable biomass feedstock will play a crucial role. This is especially true due to two reasons: 1. Biomass is the only renewable energy source that can directly replace fossil energy sources for fuels, chemicals and products today. 2. Biomass is the key to finding carbon negative solutions, i.e. solutions which captures more climate gases from the atmosphere than they emit, due to the fact that biomass absorbs CO₂ when it grows. In this picture, several future research areas can be identified:

1. Defining sustainable biomass feedstock. Even though the EC has made sustainability criteria for biofuels, improvement of current sustainability indicators and datasets for Life Cycle Analysis, particularly quantifying direct and indirect land use change factors, "high carbon stock" and "high bio diverse" land is needed.
2. How much sustainable biomass feedstock actually exists remains an unanswered question. However, estimates from around the world demonstrate that there is a limited supply of sustainably produced and used biomass feedstock.
3. How and for what we use the biomass feedstock will also define whether it is a sustainable bioproduct being produced. Producing biofuels results in the production of other products, and the most sustainable priorities between these products will differ with geographical and societal factors. In order for EU Member States to create a robust and sustainable biofuels market, further research must be carried out in order to make clear and sustainable advice on the right use of biomass and the right circumstances for use. A biofuel is only sustainable if we know that the feedstock which produced it was produced and used in a sustainable way.
4. In the light of a future increased demand for sustainable biomass feedstock, and the fact that it is a limited resource, research must be put into the area of finding ways to produce more sustainable biomass, both of existing and of new sources such as algae and other aquatic sources.

Martina Fleckenstein

WWF Germany

Martina Fleckenstein is Director of EU Policy, Agriculture & Sustainable Biomass of WWF Germany (World Wide Fund for Nature). Martina works on certification and international commodity markets since several years. She has been involved in the development of sustainable certification schemes such as FSC (Forest Stewardship Council), RSPO (Roundtable on Sustainable Palmoil) and RTRS (Roundtable on Responsible Soy). She is Vice Chair of ISCC (International Sustainability & Carbon Certification). She is running projects on sustainable land use management and spatial planning in Indonesia, Colombia and Brazil esp. for implementation of EU Renewable Energy Directive. She is a biologist and has worked in national and international nature conservation projects for several years. She is working for WWF since 1992 on national and international level.



Defining and implementing sustainability for biofuels – view from WWF

WWF believes that Bioenergy can provide diverse sustainable alternatives to fossil fuels, additional incomes for rural communities and contribute to development under the right conditions. For this to be realised Bioenergy development must be very carefully planned, implemented, and continually monitored for its environmental and social sustainability.

WWF only supports bioenergy that is environmentally, socially and economically sustainable. This means:

- 1) Bioenergy must deliver positive GHG balances in comparison to fossil fuels
- 2) Bioenergy production must not be established through the conversion of natural ecosystems that have high biodiverse or carbon value
- 3) Bioenergy feedstocks must be produced using better management practices
- 4) Implementation of Bioenergy policies must take into account food security and must not threaten the realisation of the right for food.
- 5) In WWF's views the following environmental principles need to be addressed by any certification scheme:
 - No damage of high conservation value habitats and biodiversity
 - No degradation of soil quality
 - Not adversely impact the quantity and quality of freshwater resources
 - Not lead to substantially positive lifecycle GHG balances compared to fossil equivalents
 - Effective participation of potentially-affected communities
 - Respect of traditional rights to land and resource use and access
 - Respect for workers (health, safety and labour rights)

To avoid displacement and serious social impacts, WWF strongly recommends the

- Use of idle land and in particular already eroded, overgrazed and less fertile land to establish new Bioenergy production capacity
- Increased productivity in already existing plantations
- Promoting of the use of waste and by-products as a source of Bioenergy; and
- Establishing of functional and coherent land use, agriculture and rural development and energy policies that secure land allocation for food and fuel crops and reduce price fluctuations.

WWF fully supports the wide use of existing credible, independent certification schemes as an effective tool to promote sustainable production, noting however that law enforcement and land-use planning are equally important.

FEEDSTOCK ISSUES

Moderator: Markku Karlsson, EBTP

Vice Chair of Steering Committee and Chair of Working Group 1 "Biomass Availability and Supply", UPM Kymmene

Markku Karlsson is the Senior Vice President, Technology for UPM-Kymmene Corporation, Finland. From 1999-2004 he was Senior Vice President, Corporate Technology, Metso Corporation. From 2004-2006 he was Vice Chairman of the Academy of Finland, and a member of the board from 2000-2003. He is also a member of the board of the Finnish Forest Research Institute (Metla), a member of the Steering Committee of the European Biofuels Technology Platform, the Advisory committee for the Forest Based Sector Technology Platform, and the CTO Committee of the Agenda 2020 Technology Alliance. He received a D.Sc. (Chem.Eng.) from Åbo Akademi University, Turku, Finland in 1987.



Luc Haspeslagh

EBTP – Algae Task Force, Total

Dr. Luc Haspeslagh holds a PhD in theoretical chemistry from the University of Leuven - Belgium. He started his professional career at PetroFina in 1986. He held several R&D positions in the field of polymer catalysis, resin development, process development and application development for polyolefins, both in Europe and the USA. In 1997, he was appointed technical manager for the polypropylene business. From 2000 on he held several positions in general R&D management and coordination for petrochemicals and chemicals for TOTAL. From 2005 till early 2010 he held a position as senior scientific advisor, for biotechnology, bioproducts and biomaterials at the level of the holding of TOTAL S.A. Since march 2010 he has been appointed deputy R&D manager for refining and marketing of TOTAL.

Algae for the production of fuels and chemicals

The presentation is an assessment on the present state of development of microalgae technology for the production of commodity fuels and chemicals, from a technological, economic and business perspective. It will point out the opportunities and drawbacks of this technology versus competing technologies for biomass production and will lay out the challenges to overcome to realize its potential.

Calliope Panoutsou

EBTP Vice Chair of Working Group 1 "Biomass Availability and Supply", Imperial College London

Dr Calliope Panoutsou is the Vice- Chair for the Working Group on Biomass availability and supply within the EU Biofuels Technology Platform. She is a Research Fellow in the Centre for Environmental Policy of Imperial College London. She holds a PhD from Aston University and her research work focuses on biomass resources, methodologies for resource assessment, economic appraisal of bioenergy chains, biorefinery, and bioenergy market issues. She has long term research work experience with a variety of energy crops (annuals and perennials) as alternative land uses and with biomass resource assessments with special focus on agriculture. She has coordinated several EU projects involving multi-disciplinary research on bioenergy. She also acts as expert in EU bioenergy, biofuels and agriculture committees.



Raffaello Garofalo

EBTP Chair of Task Force Algae, European Biodiesel Board

Raffaello Garofalo was appointed Secretary General of the European Biodiesel Board (EBB), the European federation of biodiesel producers, in May 2002. Previously he worked for four years within FEDIOL, the European Federation of Vegetable Oils Producers, dealing among others, with non-food uses of vegetable oils, which include bio-lubricants, bio-solvents and of course, biodiesel. In 1998 he worked temporarily in the European Commission (DG Agriculture) as well as within the Research Directorate of the European Parliament. After graduating with distinction in Politics in the International Politics Department of the Institut d'Etudes Politiques (Sciences-Po), in Paris, in 1997, he was admitted as a foreign student at the French Ecole Nationale d'Administration (ENA). He obtained a Master's Degree on European Administrative Studies at the College of Europe in Bruges in 1998.

R&D topics on biofuel feedstocks: Key messages from the SRA update

BIOFUELS DISTRIBUTION AND USE

Moderator: Jukka-Pekka Nieminen

EBTP – Chair of Working Group 3 "Distribution and Use", Neste Oil

Jukka-Pekka Nieminen is R&D Manager at Neste Oil Oyj. His responsibilities include co-ordination of renewable fuels related R&D at Neste Oil. Previously he was Environmental Manager of an oil refinery and before that headed various renewable energy related R&D-projects since 1980. He graduated from Helsinki University of Technology, Finland with a degree in technical physics.

Julie Tolmie

King's College London

Dr Julie Tolmie is a Senior Research Fellow at the Centre for Computing in the Humanities, King's College London where she works in the structural visualisation of entities and relationships across a broad range of disciplines. Julie is the author of the data and visualisation model and the scientific/technical coordinator of the BIOMAP, and the coordinator and principal investigator of the BioResources Map. Julie holds a PhD in Mathematical Sciences from the Australian National University (2001) with a focus on abstract visual notation in mathematics. Prior to moving to Europe, she held a faculty position in the School of Interactive Arts and Technology at Simon Fraser University in Vancouver (2002-2005) where she focused on 3D stereo visualisation of particle systems and on the structural mapping of systems of patterns in game design. Previously in the UK, she has worked for vizNET, the UK Visualization Support Network, organising two national conferences and an expert seminar in intersections in visualisation practices and techniques (2006-2009).



Introduction to Biomap "Time-enabled Mapping and Dissemination Tool for Biofuels Projects" (please see overleaf for abstract)

Introduction to Biomap “Time-enabled Mapping and Dissemination Tool for Biofuels Projects”

The objective of BIOMAP is to provide a complete information and dissemination tool for biofuels technologies both for European Commission contracts funded under FP5, FP6 and FP7 as well as for industrial projects and plants developed by industry. The concept of BIOMAP is to develop a powerful and fully accessible “Time-enabled Mapping and Dissemination Tool for Biofuels Projects” (BIOMAP) to facilitate the dissemination of projects (including biofuel production facilities, testing of biofuels in car fleets, use of biofuels in municipalities and research projects under the European Commission’s framework Programmes for Research and Technological Development) that are either ongoing or have been completed but are still running under market conditions.

BIOMAP provides the user or the researcher with a wealth of information concerning the projects mapped. It will also be able to examine or analyse the various projects across time, showing developments and progress achieved in a particular area e.g. biofuels type, country, or organisation. Alternatively it will be possible to examine the same parameters across FP5, FP6 and eventually FP7. In addition, because of its unique focus on interactions between similar aspects of related projects, the BIOMAP can be employed to disseminate and showcase both the evolution and current state of networking activity across Europe. Furthermore BIOMAP also includes information on numerous players in the biofuel sector such as associations, industrial organisations technology developers et al, and gradually will include information from all EU Member States on national legislation and research institutions.

Christian Dumas

EBTP – Steering Committee, Airbus

Since mid 2008, Christian Dumas has been VP, Environmental Affairs at Airbus, including the coordination of Airbus activities on bio-fuels. In 2003, he became VP Air Traffic Management within Airbus, where he also acted as Project Director for the “SESAR Definition Phase”, a 50-companies project that delivered in May 2008 its “ATM Master Plan for Europe”. Building on a background in aeronautical engineering, he started his career as commercial manager with Aerospatiale Group in France. In 1985, he joined Air Inter (French domestic airline), being involved in aircraft and engines acquisitions. He went back to Aerospatiale Group in 1989, holding several commercial and strategy positions within Aircraft Division, ATR (regional aircraft) and finally Sogerma (maintenance services). In 2000, he joined EADS Corporate as VP International Development.



Biofuels in Aviation – main drivers and challenges – an overview

Aviation continues to drive improvements in its environmental performance and has developed a comprehensive strategy to achieve carbon neutral growth from 2020 and onwards, also aiming at halving its net carbon emissions by 2050 (2005 baseline) – all in spite of an expected sustained growth of traffic worldwide. Action items can be summarised as follows:

- Individual aircraft improvements through the development of new technologies and the associated investment in fleet replacement.
- Increased efficiency of aircraft operations at network level, including air traffic management and modernisation of its infrastructures.
- Use of low-carbon and sustainable alternative fuels.
- Market Based Measures as may be necessary to offset the remainder of the carbon footprint that couldn't be handled through the other action items to achieve carbon neutral growth.

Airbus is playing a leadership role in every of the above items. This includes full support to the research, development and industrialisation of sustainable bio-fuels for aviation: fossil fuel price is volatile, oil reserves are reducing and global warming is with us. Cross aviation efforts continue to drive projects across the bio-fuels value chain, using a balanced approach to sustainability and lifecycle analysis. Airlines are ready to commit to purchase bio-fuels at a fair price, but more needs to be done to support the aviation supply chain with appropriate incentives and policies, including some form of “win-win priority access”.

Ortwin Costenoble

CEN TC 19 International Secretary

Mr Costenoble is international secretary for committees and working groups in ISO and CEN, a.o. CEN/TC 19 on (bio) fuels and CEN/TC 383 on sustainability criteria for biomass. He has worked on the basis of standards on FAME, bio-ethanol, E85, water-emulsified diesel, pure vegetable oil and paraffinic diesel (GTL/BTL). He is also member of related American organizations such as ASTM. Besides this he acts as project manager in (pre-normative) research work (EC FP5 - FP7 projects) in the field of biofuels, biogas, biobased products and hydrogen. He has organized many international scientific congresses such as the two-yearly GAS event. He has given courses on standardization, measurement and metrology in for instance the Netherlands, Lithuania and China. He graduated from Delft Technical University as a materials science engineer, specialised in biomaterials. He started at NEN, the Netherlands Standardization Institute, in 2000 in the field of chemistry and materials. After some years of general standardization consultancy in a variety of technical fields such as rubber, paper, LPG and natural gas, he specialised in international standardization work in the petroleum and biofuels field, and was appointed senior standardization consultant at NEN Energy Resources.



Biofuels technical standards and their role in market development (Please see overleaf for abstract)

Biofuels technical standards and their role in market development

By means of an European multi-stakeholder approach (oil-industry, OEMs, biofuel producers, additive suppliers government and test laboratories) voluntary agreements are developed about what is considered sustainable and durable biofuel that allows all parties to fulfil on hand emission requirements and on the other hand bio-energy targets as laid down in EU Directives. These requirements are the basis of the work of the European Standardization organization, CEN. The outcome of this process are not only fuel and biofuel specifications that present the stakeholders solutions for implementation and market advantages, but are also adopted in regulations all over the world. How these standards are made, what they momentarily describe and their global usage and impact is presented in this lecture.

Henrik Landälv

EBTP – Vice Chair of Working Group 3 “Distribution and Use”, Volvo

Henrik Landälv joined Volvo Powertrain (Sweden) in 1981, where he is manager for environmental projects. Henrik has been working as specialist or manager for specialists in areas closely related to the diesel engine combustion process, including fuel issues, from 1981 to 1997. He holds his present position since 1998. Henrik has been broadly involved in environmental issues during his professional career with focus on fuels and energy issues in his present position. He has a MSc degree in Mechanical Engineering from Chalmers University of Technology, Gothenburg, Sweden (1973) and was employed by Chalmers for diesel exhaust acoustic research – with projects for Scania and Volvo – from 1973 to 1981, when he joined Volvo. Henrik is presently Vice Chair WG3 of the EBTP.



R&D topics on biofuels distribution and use: key messages from the SRA update

BRINGING ADVANCED BIOENERGY TECHNOLOGIES TO THE MARKET – THE EUROPEAN INDUSTRIAL BIOENERGY INITIATIVE (EIBI)

Moderator: Anders Røj

EBTP – Vice Chair of Steering Committee, Volvo

Anders Røj joined Volvo Technology Corporation (Sweden) in 1989, where he heads the Fuels and Lubricants group and co-ordinates corporate fuels activities within the Volvo Group. Anders has more almost 30 years of experience in the field of refining and fuel quality, previously working in FCC catalyst development (with EKA/ Katalistiks bv) from 1980 to 1984, and on performance additives for fuels and lubricants (with Exxon Chemical, Paramins) from 1984 to 1989. For many years, he has been heavily involved in industry activities related to fuels and lubricants, such as ACEA (F&L Group, Chairman since 2001), EUCAR Fuels Group, CEN (Fuel Standardisation) and CEC (Development of performance tests for fuels and lubricants). He served as Chairman of the EU-initiated BIOFRAC (Biofuels Research Advisory Council) in 2004-2006, which led in June 2006 to the creation of the EU Biofuels Technology Platform in June 2006, of which he is currently Vice Chair. He has a M.Sc. degree in Chemical Engineering from Åbo Akademi in Turku, Finland (1979), and a Licentiate of Engineering degree in the same discipline from Chalmers University of Technology, Gothenburg, Sweden (1984).



Anders Lau Tuxen

Novozymes A/S

Anders Lau Tuxen is the Energy Strategist of Novozymes A/S, a global leader in industrial enzymes and microorganisms – and the leading enzyme supplier to the fuel ethanol industries worldwide. Before joining Novozymes, he worked for the management consulting firm Booz & Company as well as for several Danish government agencies. He has an MPA from Harvard University, USA.



Advances in biological conversion pathways: the enzymes are ready

Three key challenges need to be tackled before advanced biofuel production can scale-up and in a significant way help mitigate climate change and improve European energy security: Ensuring adequate and sustainable feedstock supply, ensuring sufficient and stable demand, and delivering the needed breakthroughs in conversion technologies.

As the leading enzyme supplier to the fuel ethanol industries worldwide, Novozymes has undertaken an unprecedented R&D effort focused on conversion of lignocellulosic material to fermentable sugars. Through this effort Novozymes has driven the development of improved enzyme solutions. But just as important is the progress Novozymes and partners across the world have made – working with an integrated view on enzymes, process steps, and process integration. Through this effort commercially relevant conversion processes have been developed and are being scaled up.

Over the last years enzyme solutions have improved a level where Novozymes' new Cellic Ctec2 product enables enzyme use cost down to as low as 0,10 EUR/litre of cellulosic ethanol. At the same time process improvements have been made that enable total production cost as low as 0,50 EUR/litre of cellulosic ethanol.

Novozymes' presentation will give a brief overview of recent developments within enzymes and the conversion of lignocellulosic material, as well as underline the need for partnerships and integrated process development.

Michael Persson

Inbicon

Michael Persson is vice president, finance and corporate affairs, Inbicon A/S, a subsidiary of DONG Energy. Before that he worked for 12 years with business development in Danisco Sugar (now Nordic Sugar), most recently as vice president, with responsibility for sugar activities in Lithuania and development of a first generation bio-ethanol factory in conjunction to a sugar factory in Anklam, Germany. He also has experience in medical instrumentation (Radiometer A/S) and cleaning equipment for the processing industry (Toftebjerg A/S). He has a M.Sc. from the Technical University of Denmark and an MBA from INSEAD, France.



Demonstration of 2nd Generation Biofuels in Denmark

The international biofuel industry has set its focus on the development of new technologies for producing ethanol from agricultural waste and energy crops. In Denmark, DONG Energy A/S biotech subsidiary Inbicon A/S has built a demonstration plant for the conversion of wheat straw to ethanol. The plant demonstrates the process developed by Inbicon and is located next to one of DONG Energy's power plants. The construction began in the spring of 2008, and the plant was inaugurated November 2009, the process steps successively demonstrated and the first dehydrated ethanol was produced in March 2010. The plant will receive 30,000 tonnes of wheat straw per year and will produce 4.300 tonnes ethanol per year, 13,100 tonnes of lignin pellets and 11,250 tonnes of C5 molasses suitable for cattle feed or as a biogas booster. The investment is around €53 mill., of which €10 mill. is funded by Danish government grants, while demonstration and optimization is now supported by EU FP7 program by €9.1 mill. in the Kacelle project. In the 90s, Danish power companies started using biomass for power production, and now several power plants handle 500 tonnes pr. day of wheat straw. Based on the experience with the straw handling, a process was developed for the pretreatment of biomass with the intention of producing ethanol, and in 2002, a R&D project ("Co-production biofuels") partly funded by the European Commission was initiated. In the course of the R&D project, several technological breakthroughs were achieved, and a pilot plant with a design capacity of 24 tonnes pr. day of wheat straw was inaugurated in 2005. After the completion of the R&D project, the subsidiary Inbicon was formed to focus on and accelerate the commercialization of the technology.

Pierre Porot

EBTP – Vice Chair of Working Group 2 "Conversion Processes", IFP

Associate Director of the IFP Refining and Petrochemical Business Unit in charge of the Biofuels programme. He works on the IFP Biomass conversion strategy and projects follow-up : vegetable oils conversion to fuels, algae potential, ligno-cellulose conversion to fuels through different paths (biological, thermochemical), resources availability, co-products management, etc. In 2008, he became Vice-chair of WG2 of the European Biofuels Technology Platform. He is also a member of the Steering Committee of the ANR Bioenergy Programme. From 2001 until 2004, he worked as a Process Engineer in the Process Department, dealing with petroleum heavy ends conversion processes. At the same time, he also managed a project aimed to build linear programming refinery models - simulators designed for refining economy studies. From 1997 until 2001, he participated to a project dedicated to the improvement of innovation management in IFP. He started work at IFP in 1989 in the Engine R&D Department, dealing with Fuels/Engine Matching, Engine Development, Engine Testing and Emission Control.



Ingvar Landälv,

EBTP – Vice Chair of Working Group 2 "Conversion Processes", Chemrec AB

Since 1997, Ingvar Landälv has been engaged in the development and commercialization of the Chemrec black liquor gasification technology, serving as Chief Technology Officer. In this capacity he has taken the initiative to convert the pulp mills to biorefineries thus making them producers of syngas based fuels / chemicals in addition to the base product, paper pulp. He graduated in 1975 with a MSc in Physics & Chemistry. He has more than 30 years experience of process R&D, design, engineering, construction and operation of gasification based process plants based on oil, coal and biomass as feedstock. He holds a number of patents in the area of energy integration in gasification based processes.



Advances in thermochemical conversion pathways

Kai Sipilä

EBTP – Chair of Working Group 2 "Conversion Processes", VTT

Prof. Kai Sipilä is Vice President, Strategic Research - energy for VTT Technical Research Centre of Finland. He is a Chair of the EBTP Working Group 2 on conversion technologies, a member of the Scientific Committee of the Forest based industries technology platform, Coordinator of NoE Bioenergy (Network of Excellence EU 6FWP RTD), and Representative of Finland on the Executive Committee of the IEA Biomass Agreement, being made Vice Chairman in 2003. He holds an M.Sc. (Tech) and a Lic. Tech in Chemical Engineering from the Helsinki University of Technology, Finland, and from 1996 -2005 was Research Professor in Biomass Conversion Technologies at VTT.



R&D topics on processing technologies: Key messages from the SRA update

EIBI – the value chain approach