

European Biofuels Technology Platform: 6th Stakeholder Plenary Meeting

Speakers: CVs & Abstracts

Welcome

Tomas Kåberger,

Chair of EBTP Steering Committee, Chalmers University of Technology



Currently, Tomas Kåberger serves as Professor of Industrial Energy Policy at Chalmers University of Technology where he is also responsible for the collaboration between the university and energy companies, including research on sustainable renewable biofuels with the Preem refinery and collaboration on biomass gasification with Göteborg Energy on the GoBiGas project producing methane. He is also a visiting expert on biofuels at the College of Mechanical and Energy Engineering at Zhejiang University, 2008-2013 extended until 2018. As executive board chairman of Japan Renewable Energy Foundation, Mr Kåberger also spends 25% of his time in Japan. From 2008-2011, he was Director General of the National Swedish Energy Agency responsible for implementing policies as well as funding energy related research, development and demonstration.

Keynote

Paul Verhoef,

European Commission, DG Research and Innovation



Paul Verhoef is currently Head of Unit "Renewable Energy Sources" for DG Research and Innovation of the European Commission. Previously, he was Head of Unit for Research and Innovative Transport Systems at DG Mobility and Transport, and Programme Manager of the EU Satellite Navigation Programmes Galileo and EGNOS.

Paul has had a number of policy functions in the European Commission since 1990 in the areas of space, telecommunications, electronic commerce, and Internet and the EU satellite navigation programmes, and worked as a member of the Cabinet of the responsible Commissioner for Information Society. In his earlier career, he worked for the United Nations in the South Pacific, Eutelsat in Paris, the European Space Agency in the Netherlands, and Philips Electrical Industries of New Zealand.

Paul is from the Netherlands and has a M.Sc Degree in Electrical Engineering.

SESSION ONE: LOW CARBON TRANSPORT AND ENERGY SECURITY

Moderator:

Sandrine Dixon-Declève,

Vice-Chair of EBTP Steering Committee, Head - University of Cambridge Institute for Sustainability Leadership (CISL) EU Office



Since 2009, Sandrine Dixon-Declève has run the EU Office of the University of Cambridge Institute for Sustainability Leadership (CISL) and The Prince of Wales's Corporate Leaders Group on Climate Change (CLG) and is a distinguished faculty member of CISL's Executive Programmes. Born in Brussels, but having grown up in California, Sandrine studied international relations at the University of California, Davis and completed an Environmental Sciences Masters with Honours at the Université Libre de Bruxelles. Due to her long standing work on dialogue and conflict resolution between policy makers and business leaders around climate change and progressive business action, Sandrine now also leads a new platform initiated by 14 EU Ministers interested in progressing the concept of Green Growth. Under her leadership, the Green Growth Platform is working with Ministers, MEP's, business leaders, international organizations (OECD, IEA, World Bank, UNFCCC) and European economists to find concrete mechanisms to enhance the development of a low carbon market, jobs, growth and competitiveness across Europe. Prior to 2009, Sandrine ran and worked for consulting and engineering companies in the area of energy and sustainable development and has been the personal advisor to several MEPs, the European Commission, Governments in Asia, Africa and the Middle East, international organizations including OPEC, ADB, OECD, UNEP, USAID and business leaders of large international, European and African companies. She has published numerous articles, book chapters and given presentations on green growth and competitiveness, energy, climate change, transport, conventional and alternative fuel quality legislation as well as on trade & environment. Sandrine recently spoke on TEDx: The Sustainable Future series.

Speakers:

Andreas Pilzecker,

European Commission, DG Energy



Andreas Pilzecker studied agricultural economics at the Universities of Munich-Weihenstephan (Germany), Brussels (Belgium) and Göttingen (Germany). He has worked as a research assistant on international commodity markets, as an economist in an international grain trading company, in general logistics, and as a consultant on farm management. He joined the European Commission in 2005 and has worked since 2007 on bioenergy, currently in DG Energy in particular on aspects related to emissions from biofuels, including indirect Land Use Change.

The EU 2030 framework and energy security

Heather Hamje,

Science Executive for Fuels Quality and Emissions, Concawe



Heather Hamje did her first degree at Glasgow University in the Department of Chemistry, followed by a D.Phil in Materials Science and Engineering at Oxford University. She has spent over twenty years in the oil industry in the UK and in the US working on fuels and biofuels in the areas of gasoline technology, diesel additives and product development of the full range of distillate products. She is currently the Science Executive for Fuel Quality and Emissions at Concawe, a European-based, oil industry-funded organisation, which does environment-related scientific research and is a member along with JRC and EUCAR of the JEC consortium.

JEC Biofuels and Well to Wheels analyses

Over the past decade, the JEC Research Consortium has been working together to better understand the complex issues associated with future vehicles and fuels. Much of the Consortium's work has been on vehicle and fuel pathways in the European context, from a 'Well to 'Wheels' (WTW) perspective. Biofuels remain the most challenging alternative fuel to accurately model primarily because of the disposition and accounting of pathway co-products. Other work carried out by the consortium has focused on meeting future European requirements for renewable energy and greenhouse gas (GHG) reduction through the use of biofuels in European market fuels. This presentation brings together the biofuels related findings from recent updates to both these studies.

Ausilio Bauen,

Director E4Tech



Dr Ausilio Bauen is a Director of E4tech, a strategic consultancy focused on sustainable energy. He works with industry, investors and governments on a wide range of bioenergy topics and on the development of bioenergy strategies. His work covers techno-economic, environmental, market, business and policy aspects related to bioenergy systems. He is part of the advisory committees for organisations such as the Carbon War Room, Climate Bond Initiative, UK Energy Technology Initiative and UK Automotive Council, and has published widely in journal and books, including two Financial Times energy reports. Ausilio is also a Senior Research Fellow at Imperial College London's Centre for Energy Policy and Technology.

A harmonised Auto-Fuel biofuel roadmap for the EU to 2030

Policy uncertainty and lack of an industry-wide position on biofuels have led a consortium of international fuel and automotive companies to commission E4tech to provide a vision and a roadmap for biofuels in the EU to 2030. The study provides a bottom-up analysis of what the fuel industry can achieve in terms of sustainable biofuels supply and how this can best be integrated into the vehicle fleet. It shows how a range of biofuels can make a significant contribution towards meeting the EU's renewable energy and greenhouse gas emissions reductions targets for 2020, and contribute further to transport energy in the EU to 2030. At the same time, it underlines the urgent need for a more harmonised and concerted approach on the part of the fuel and auto industries and governments to the development of a sustainable biofuels sector. The study can be found at: www.e4tech.com/auto-fuel.html.

Charles Esser,

Oil Market Analyst, International Energy Agency



Charles Esser has been an oil market analyst, focusing on non-OPEC supply, in the Oil Industries and Markets Division of the International Energy Agency since July 2013. He was previously a self-employed consultant, doing energy-related projects for various clients in the for-profit and non-profit sectors. Prior to that, he was the energy analyst for the NGO think tank 'The International Crisis Group' in Brussels. Mr Esser has also worked in the U.S. government, both at the U.S. Department of Energy's Energy Information Administration and at the U.S. Department of State. He is a graduate of The Johns Hopkins University – School of Advanced International Studies (SAIS).

IEA perspective of the role of biofuels in a low carbon energy system

This presentation is an overview of the International Energy Agency's outlook for biofuels from this year's Medium-Term Renewable Energy Market Report. It covers biofuels within the overall oil demand picture; the role of policy for the industry; the situation in large producing countries such as Brazil and the US; the biofuels situation in Europe; and advanced biofuels. Finally, it concludes by placing biofuels within the context of the low-carbon pathways for the future. Main concluding bullet points are:

- Shifting policy grounds in established markets undermine medium-term growth in biofuel production
 - Emerging markets continue expanding production as bills for oil import and fossil fuel subsidies rise
 - Advanced biofuels currently in the “valley of death” with promising projects coming forward – will they make it to the market?
 - Stable, long-term policy framework, including clear sustainability guidelines, will be vital for further growth
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SESSION TWO: EUROPE AND BEYOND – OUTLOOK AND LEARNING FROM DIFFERENT COUNTRIES

Moderator: Tomas Kåberger, Chair of EBTP Steering Committee,
Chalmers University of Technology

See welcome

Speakers:

Donald Smith,
Scientific Director, BiofuelsNet Canada



During his 27 years at McGill, Donald L. Smith has conducted research in the production and physiology of crop plants, with an emphasis on plant-microbe interactions. The work has involved 19 crop species. His research activity has resulted in over 270 publications, eight patents, a spin-off company (Bios Agriculture Inc.) and products applied to ~10 million ha of crop land in 2012. He currently leads the NCE funded (\$12 million per year) BioFuelNet Network, the McGill Network for Innovation in Biofuels and Bioproducts and the Eastern Canadian Oilseed Development Initiative network (AAFC funded at \$2 million per year). He was head of the NSERC Strategic Green Crop Network. He has international collaborations with the US, India, China, Russia and Brazil. Dr. Smith has served as chair of his department, is a founding member of a Canada-US think tank on climate change and agriculture, holds a James McGill professorship and was a New Sun Professor. He served on the NSERC Plant Biology and Food Discovery grant selection committee. Smith is a past recipient of the Young Agronomist Award, and past president and current fellow of the Canadian Society of Agronomy. He holds the largest number of NSERC grants in Canada and, in 2012, was awarded the Queen Elizabeth II Diamond Jubilee Medal for significant contributions to intelligent agriculture.

Biofuels development in Canada and the US

There is a pressing need to develop renewable and sustainable sources of energy and, as much as possible, these should avoid conflict with food-stream materials. Canada and the US both have biofuel mandates, however, these have been ramping up in the US, and include specifications for advanced biofuels, while they have not been altered for a number of years in Canada. Canada does have considerable potential for a meaningful level of advanced biofuel production and there now is a meaningful level of advanced biofuels development in North America. BioFuelNet Canada is a national research network established to assist the development of a robust, sustainable biofuels sector in Canada and it is likely to play a role in establishing advanced biofuels in Canada.

Jonathan Hood,

UK Department for Transport



Jonathan Hood recently joined the Low Carbon Fuels division at the UK Department for Transport, working on policy options to help meet the UK's transport target under the Renewable Energy Directive, with a specific focus on gaseous fuels. Jonathan's background is in climate change and low-carbon energy, having studied environmental technologies before joining the UK Department of Energy and Climate Change to work on the UNFCCC negotiations and international low-carbon energy policy development.

Biofuels development in Europe: UK experience of the Renewable Transport Fuel Obligation and our policies to promote the development of waste-derived and advanced biofuels

Under the Renewable Energy Directive, the UK must deliver 10% of its total transport energy from renewable sources in 2020. The UK recognises the importance of biofuels in meeting carbon and renewable energy goals, and through the Renewable Transport Fuel Obligation (RTFO), was the first country in the world to implement mandatory carbon and sustainability reporting for biofuels. The role of waste feedstocks in delivering those carbon savings has been critical, with wastes currently comprising around half of transport energy from biofuels used in the UK. Double-counting has been key to encouraging supply, as well as a clear process for new materials to be added. The UK continues to encourage the use of wastes and residues, and is currently exploring other low-ILUC risk biofuels through advanced technologies, including a £25 million advanced biofuel demonstration competition intended to be run in 2015

Raffaello Garofalo,

Secretary General, European Biodiesel Board



Mr Garofalo was appointed Secretary General of the European Biodiesel Board (EBB) - i.e. 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 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.

Is there a better way to incentivise advanced biofuels in the EU?

The presentation will focus on the challenges arising from politically important extra-incentives for advanced biofuels and the need to ensure their efficiency, notably by avoiding untrustworthy declarations and frauds.

Liping Kang,

Clean Transportation Project Manager, Innovation Center for Energy and Transportation (iCET)



Ms. Kang has almost 10 years experiences on biofuel research and project implementation, and serves as a committee expert at China's Technical Committee on Energy Industry Non-food Biomass Feedstock Standardization (NEA/TC24) and China's Technical Committee on the Energy Industry bio-liquid Fuel Conversion Process (NEA/TC22), and is an expert member of Chamber 6 of the Roundtable on Sustainable Biomaterials. Ms. Kang has been engaged in introducing international advanced biofuel standards and policies to China, submitted recommendation paper to decision-makers; she published over twenty papers, reports and reviews related to biofuels, co-wrote the book BIOMASS ENERGY PROJECT with bioenergy experts in China, and owns a patent on ethanol conversation technology. Ms. Kang holds a Master's degree on biofuels from the China Agricultural University, responsible for sustainable fuel, clean vehicle project research and implementation.

Biofuels experience in China

- Biofuels regulatory and market development **background**
 - **Current state of biofuel governance:** policies and instruments
 - **China's unique market** development, challenges and opportunities
 - **Projected trends:** market and governance
 - China and global bio-fuel **exchanges and collaboration**
 - Suggested **areas for action**
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SESSION THREE: SUCCESS STORIES – BIOFUELS TECHNOLOGY THE ROAD SO FAR – LESSONS LEARNED FROM DIFFERENT BIOFUELS PLANTS

Moderator:

Kai Sipilä,

Co-Chair EBTP Working Group 2 - Conversion Processes; VTT Finland



Prof. Kai Sipilä currently serves as Senior Advisor at the Technical Research Centre of Finland. In 2006-2013 he was the Vice President of Renewable Energy at VTT. He is a Chair of EBTP Working Group 2 on conversion technologies. He was the EERA Bioenergy Joint Programm Coordinator (2010-2013) and Coordinator of the Network of Excellence in Bioenergy, an EU 6th Framework Project (2006-2010). He is the representative of Finland on the Executive Committee of the IEA Biomass Agreement and was 2006 Chairman of the national biofuels implementation committee in Finland. 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.

Speakers:

Niels Henriksen,

Senior Advisor, New Bio Solutions, DONG Energy Thermal Power A/S



Niels Henriksen is currently Senior Advisor for New Bio Solutions DONG Energy Thermal Power (NBS), a merger of three new bio-businesses (Inbicon, Renescience and Pyroneer) within the field of converting low cost biomass to valuable products. Mr. Henriksen has served DONG Energy (Denmark's largest energy company) for more than 25 years, and was previously involved in coal-based power generation and later in numerous waste and renewable energy technologies. From 2007, he served as an entrepreneur and CEO in the start-up of Inbicon A/S, which included construction of pilot and demonstration facilities, R&D and commercial sales. Today Mr. Henriksen is responsible for medium and long term technology strategy, IPR, and support of regulatory affairs, and has been advisor for Maabjerg Energy Concept concerning funding and concept development. He is also Chairman of the Danish organization Biorefining Alliance and Deputy Chairman of the boards of Inbicon A/S and Renescience A/S.

NER300 project: Maabjerg Energy Concept

The MEC Biorefinery located in Denmark will be presented and will cover the following topics:

- Concept/history/ownership structure;
- Sourcing and Logistics;
- The ethanol plant/new technology/timeline;
- Remaining issues to be solved.

Frédéric Martel,

General Manager, Procethol 2G



Frédéric Martel is an agriculture engineer with AgroParisTech and holds a PhD in biochemistry and microbiology. Since 2009, he has worked as the General Manager of PROCETHOL 2G and is in charge of the Futurol Project. From 2002 to 2008 he was the Head of R&D, Fractionation Department at ARD (Agro-industrie Recherches et Developpements, Reims, France). From 1999 to 2001 he started-up a Vitamin C plant, using a fermentation process, a joint-venture of Cargill-Cerestar, BASF and Merck (Krefeld, Germany). He previously worked as a R&D engineer at Technical University of Compiègne (Compiègne, France), and prepared his PhD thesis from 1997 to 1999.

The FUTUROL pilot demonstration on cellulosic ethanol

Futurol technology has been developed since 2008 by a consortium of 4 R&D partners (IFP Energies Nouvelles, INRA, Lesaffre and ARD), backed by seven industrial and financial partners (including Tereos and Total). Their expertise covers the whole production chain, from biomass cultivation and transformation, through biocatalyst development and selection, to development and industrialization of fuels and petrochemicals production processes. A company, Procethol 2G, was created, in order to coordinate and provide financial and technical means to the Futurol Project. Futurol's pilot plant is located on Bazancourt-Pomacle biorefinery, near Reims (France). Started-up in 2011, the 5,000 m² facility benefits from a unique agroindustrial environment. Futurol technology produces cellulosic ethanol thanks to a compact scheme with few production steps and simplified operations: single-train pretreatment, and one-pot hydrolysis and fermentation. Energy and water management, as well as on-site biocatalysts production and propagation were designed to make Futurol technology cost competitive, in line with 1G bioethanol production costs. Futurol technology has been developed and tested on a wide range of biomasses. This makes the technology suitable for worldwide deployment by processing any locally available resources and by taking advantage of any feedstock opportunities

Petri Lehmus,

Vice President R&D, NesteOil



Petri Lehmus has worked, since 2011, as Vice President for Research and Development at Neste Oil company, where one of his primary focus areas is to expand the company's raw material base for its proprietary NEXBTL renewable fuel technology. Before this Lehmus worked for more than ten years in the polyolefin industry, where he held various positions in the R&D field. Prior to his position at Neste Oil he worked from 2007 - 2011 as Innovation Centre Manager at Borouge company in the United Arab Emirates and before that as Catalyst and Process Research Manager at Borealis in Finland. Petri Lehmus holds a doctoral degree in Chemical Engineering.

Large scale chemical conversion of oils and residues in Rotterdam

Commercial since 2007, annual production exceeding 2 million tons with currently already 66% of the feedstock waste and residue based, Neste Oil has been successful in building a global renewable fuels business. Feedstock flexibility and high fuel quality have been leading thoughts in the development of the NEXBTL renewable fuels technology. Special focus is given in the presentation to the largest European renewable fuel refinery, the 800 kt/a Rotterdam NEXBTL plant which has been operational since 2011.

SESSION FOUR: BIOFUELS TECHNOLOGY ADVANCEMENTS

Moderator:

Markku Karlsson,

Vice Chair of EBTP Steering Committee and Vice-Chair of Working Group 1 - Biomass Availability and Supply , Finnish Forestry Industries Federation



Before retirement, Markku Karlsson was Senior Vice President, Technology at UPM-Kymmene Corporation in Finland. From 1999-2004 he was Senior Vice President in Corporate Technology at Metso Corporation. From 2004 until 2006 he was Vice Chairman of the Academy of Finland, and a member of the board from 2000 until 2003. He has been 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.

Speakers:

Dina Bacovsky,

Unit Head Biofuels, BIOENERGY 2020+



Dina Bacovsky graduated from Vienna University of Technology with a Degree in Process Engineering. She is Head of the Biofuels Unit at BIOENERGY 2020+ and Secretary of the IEA Implementing Agreement on Advanced Motor Fuels. She also represents Austria in IEA Bioenergy Task 39 “Commercialising Conventional and Advanced Liquid Biofuels from Biomass”, where she is responsible for databases and surveys. Her activities include research, consulting and information exchange on biofuels production and use. Dina Bacovsky has assessed oil and biodiesel quality from 30 different feedstocks, supported the harmonisation of GHG calculations for biofuels in the EU and monitored the development of advanced biofuels production facilities. Her worldwide overview on 2nd generation biofuels demonstration facilities has received much interest in the biofuels community. With her team she carries out research on algae cultivation and processing, and actively engages in information exchange in scientific networks.

Overview advanced biofuels technologies

Around the world a number of companies pursue projects to develop and deploy advanced technologies for the production of biofuels. A broad variety of raw materials is suitable, multiple conversion technologies are being developed and a range of different fuel products can be marketed. With so many different options, it is hard to keep track of the development of the sector. One of those that give a good overview but also provide some level of technology detail, is IEA Bioenergy Task 39 “Commercializing Liquid Biofuels”. Task 39 has gathered data on more than 100 projects from the technology developers, and provides this data through an online interactive map (<http://demoplants.bioenergy2020.eu>) and a summary report.

Sari Mannonen,

Director, Sales & Marketing, UPM Biofuels



Sari Mannonen is Director, Sales & Marketing for UPM Biofuels based in Helsinki, Finland. Representing and promoting the business, she is responsible for defining and leading UPM Biofuels international activities including negotiating sales and partnership contracts. Sari's contact groups include technology suppliers in biofuels sector, investors, reporters, EU and national decision makers, NGOs and financial audiences. Sari has over 15 years' experience in leading global sales & marketing, customer management, customer strategy & business relations as well as business development in different global businesses. Sari graduated from Helsinki University and holds a Ph.D. in biochemistry. Sari's background also includes research and development in the biotech field.

Biorefinery for production of advanced wood-based biofuels

UPM is building the world's first commercial scale wood-based biorefinery in Lappeenranta, Finland. During the last few years UPM has made progress with remarkable R&D work and important investments for developing sustainable wood-based biofuels. The investment of EUR 150 million in the Lappeenranta biorefinery is done without any public investment grants. The biorefinery will start production in autumn 2014 and will produce approximately 100,000 tonnes of renewable diesel each year. UPM BioVerno diesel is a unique Finnish innovation reducing greenhouse gas emissions significantly compared to fossil diesel. As a drop-in fuel, it can be used in any diesel engine – car, bus or truck - without modification.

Dominik Behrendt,

Project leader, Institute for Plant Sciences, Forschungszentrum Jülich



Dominik Behrendt leads the "algal technology group" at the Institute for Plant Sciences, Forschungszentrum Jülich as project team leader. Responsibilities include AUFWIND, an algae-to-jetfuel project beyond laboratory scale. His tasks are coordination of the consortium and operations of 1500m² algae photo-bio-reactors. Prior to joining Forschungszentrum Jülich he was a CEO at a start-up company and worked for CMT, a dedicated grant management team at RWTH Aachen University. Dominik obtained his PhD from RWTH, specialising in protein engineering. He graduated from Heidelberg University in biology and pursued his research at University of California, Berkeley.

The use of algae for the production of advanced biofuels

- Aviation fuels from algae
 - The project AUFWIND
 - First experiences regarding the construction of the reactors, operating, cultivation and processing of algae
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Sören Eriksson,

Preem



Sören Eriksson has 30 years' experience in the oil business, where he has engaged in many different areas including acquisition of companies, and product and refinery development. Today he works in business development, mainly in two areas: development of new renewable fuels; and following European political decisions in order to inform strategic development decisions. He graduated from the Royal Institute of Technology in Stockholm, Sweden with a degree in Master of science Chemical engineer in 1977.

Advanced biofuels and new feedstocks

- Uncertainty on political decisions regarding the possibility for renewables in Europe, especially forest-based ones
- Preem's experiences in making diesel out of the rest product, crude tall oil, from the pulp industry
- Other possibilities for future production of fuels based upon lignin and pyrolysis oil, converted in an oil refinery to hydrocarbons.

SESSION FIVE: ADVANCED BIOFUELS IN DIFFERENT APPLICATIONS

Moderator:

Ingvar Landälv,

Vice Chair of EBTP Steering Committee and Co-Chair Working Group 2 - Conversion Processes; Lulea University of Technology and Chemrec AB



Ingvar Landälv, since 2013, has worked as senior project manager at Lulea University of Technology. Between 1997 and 2012 he was engaged in the development and commercialization of Chemrec's black liquor gasification technology, serving as Chief Technology Officer. In this capacity he took 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.

Speakers:

Inmaculada Gómez,

Environmental Expert, SENASA



Inmaculada Gomez is the Project Coordinator of ITAKA. She has a PhD in Environmental Sciences with over 10 years' experience, and has been an environmental expert at the Observatory of Sustainability in Aviation of SENASA, since its creation in 2007. She was involved in the creation of the Spanish Initiative for aviation biofuels (Bioqueroseno.es), is member of the working group for alternative fuels of ACARE and the CAEP Alternative Fuels Task Force. Before working at SENASA she was professor of Environmental Economics and Landscape planning, and worked on several research projects.

State of the art aviation fuel

Until recently the aviation sector has not been strongly involved in the establishment of renewable energy policies & regulations. Aviation fuels have not been specifically addressed, however they may be counted towards the fulfilment of targets reported by Member States (MS) or be accounted for in parallel schemes like the Emission Trading System (ETS). However, the technology of biofuels for aviation is progressing thanks to the cooperation of the different stakeholders, and ITAKA is a good example of that collaborative work.

ITAKA is a collaborative project in the EU aiming to support the development of aviation biofuels in an economically, socially, and environmentally sustainable manner. ITAKA is addressing challenges at European level in two main areas:

- Development of commercial scale production and study implications of large-scale use.
- Research on sustainability, economic competitiveness and technology readiness.

Nils-Olof Nylund,

Chair of EBTP Working Group 3 - Product Distribution and End Use, Research
Professor, D.Tech, VTT Finland



Nils-Olof Nylund has a Doctor of Technology degree in mechanical engineering (internal combustion engines) from Helsinki University of Technology. He is currently Research Professor for Energy Use in Transport and Engine Technology at VTT Technical Research Centre of Finland. He is manager of the Finnish research programme TransSmart on smart and sustainable mobility. He has been working with alternative fuels since 1979, and has been the Finnish delegate to IEA Advanced Motor Fuels (AMF) since 1990. Since 1998, he has been either Chairman or Vice Chairman of AMF. In addition, he also has been the EUWP Vice Chairman for Transport since 2007.

Fuel and technology alternatives for commercial vehicles

The presentation will discuss the state of conventional technology for commercial vehicles (the benchmark) and alternative fuels and powertrains for commercial vehicles. Remembering that “one size doesn’t fit all”, the presentation tries to point out what are the main challenges for various alternative technologies and what applications make most sense for alternative technologies:

- Current state of conventional technology
 - Liquid biofuels
 - Gaseous fuels
 - Electrification
 - Fuel cell vehicles
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Per Stefenson,

Marine Standards Advisor, Stena Rederi AB



Per Stefenson graduated at CTH in Gothenburg, Sweden as a Naval Architect, M.Sc, in 1981. He has worked as Marine Standards Advisor at Stena Rederi AB since 2009, following standards and regulations development within international organizations such as IMO and EU. He also coordinates the company’s RTD projects including the efforts to test Methanol and other alternative fuels inline with new sulphur regulations. Per has previous experience as project manager from SSPA (maritime consultants) and the Swedish Maritime Administration where he was Head of Research and Technical Development. Per has also served as Marine Engineer in the Royal Swedish Navy, specializing in naval craft light-weight design.

The use of biofuels in the maritime sector In 2015, new emission limits will enter into force in designated emission control areas, which include the Baltic Sea. By 2020 the whole of Europe and by 2025, at the latest, the whole world will require ships to radically reduce their sulphur emissions. At a time when shippers and shipowners are deeply concerned about how to comply with these new, stricter, emission limits, methanol provides the answer to several challenges: the vision to uphold shipping as the cleanest mode of transport, to limit the emissions of SO_x, NO_x and particulates, as well as CO₂, and to be able to do so safely, practically, and with a realistic economic cost and benefit. Methanol can be produced from natural gas, from forestry biomass or, ultimately, by solar-, wind- or geo-generated hydrogen and captured CO₂. The sources are diverse and interesting, leaving room for further innovation. With this as background the presentation will highlight on some technical developments and results from the ongoing project to convert a large Ro-Pax ship to operate on methanol.

FINAL PANEL: BIOMASS MOBILISATION AND SUSTAINABILITY

Moderator: Calliope Panoutsou,

Chair of EBTP Working Group 1 – Biomass Availability and Supply
Imperial College London



Dr Calliope Panoutsou is a member of the Bioenergy Group within the Centre for Environmental Policy (Imperial College London) and is the Chair of the EBTP Working Group on Biomass availability and supply within the European Biofuels Technology Platform. Her work assignments focus on supply, logistics & economic analyses of biomass value chains, market & policy analyses and assessment of sustainability for bioenergy systems. She has coordinated several EU projects involving multi-disciplinary research on bioenergy. She also acts as expert in EU bioenergy, biofuels and agriculture committees. She holds a PhD from Aston University.

Luc Pelkmans,

Project Manager, VITO



Luc Pelkmans is a biomass project manager at VITO, the Flemish Institute for Technological Research. In his 19 years at VITO he has gained expertise on alternative motor fuels, biofuels, bio-energy and biomass applications, both in European projects (ESTO, PREMIA, Biofuel Cities, ELOBIO, BioBench, Biomass Policies, S2BIOM, BioTrade2020+) and in studies for Belgian and Flemish governments. His main focus is currently on policy-oriented studies, project implementation and sustainability analysis, with a broadening focus towards biobased economy. Luc is the Belgian representative in IEA Bioenergy Task 40 (Sustainable Bioenergy Markets and Trade), where he coordinated a number of international studies on sustainability of biomass. Since 2013, he has also been the Belgian ExCo member of IEA Bioenergy.

Udo Mantau,

University of Hamburg



Udo Mantau (www.holzwirtschaft.org) is a university professor in Forest Economics at the Centre of Wood Science at the University of Hamburg. Before his university career he was leading a market research department in a marketing company of the C. Bertelsmann concern. As a researcher, he has been working in the field of market research, resource economics and marketing for many years. Major projects in recent years dealt with regional capacities of the wood industry in Germany and Europe (EUwood, EFSOS II), biomass potentials and trade flows. He developed the Wood Resource Balance which is today commonly used to give a total view on the potential and consumption of wood resources and a wood flow analysis that demonstrates the CO₂ interactivity between forest, material and energy uses and allows the calculation of sectorial cascade factors. He is a consultant in the fields of forest products, construction and resources.

Ausilio Bauen,

E4Tech
Please see Session 1

Kai Sipilä,

EBTP WG 2, VTT Finland
Please see Session 3