



Tuesday March 10, 2009
17:30 to 19:00

Lyon Convention Center
France

BIOFUELS FOR THE CITY

(Co-organised with the US-EC Task force on biotechnology research)

Moderator

- **Cemil Giray Alyanak**, President, mondogragilis group, France

Speakers

- **Bernard Bigot**, Chairman, French Atomic Energy Commission (CEA), France
- **Michael Casler**, Professor, US Department of Agriculture, Agricultural Research Service, USA
- **Volkert Claassen**, Director, Royal DSM White Biotechnology, The Netherlands
- **Bärbel Hahn-Hägerdal**, Professor of Applied Microbiology, LTH/Lund University, Sweden
- **Kenji Kurata**, Director, Bio-Industry Division, Ministry of Trade, Economy and Industry, Japan
- **Steen Riisgard**, CEO Novozymes A/S, Denmark, Chairman, Europabio, Belgium
- **Annie Sugrue**, Coordinator, Citizens United for Renewable Energy and Sustainability (CURES), South Africa

Summary

- The aim of this session was to give an overview on the broad topic of biofuels, which hardly can be separated from other topics, mainly bioenergy and biorefinery, and to get an experts overview on how to move forward
- There are many different types of biofuels; each one comes with different strengths and weaknesses, opportunities and threats and each one has to be evaluated individually depending on the situation the use is planned for
 - Bioethanol of the first generation made from sugar is actually produced mainly in Brazil (from sugar cane) and the USA (from corn); bioethanol from sugar cane is the only technology so far which can compete with fossil fuels
 - Technology for bioethanol production from cellulose (second generation) will be available next year; plants will have to be constructed soon to use this potential
 - Biodiesel production from whole plants via gasification is actually being developed, few pilot plants available
 - Biodiesel production from plant oil goes along with the drawback of just a little part (seeds, fruits) of the plant being used for the purpose
 - Other possibilities to use the energy from biological resources are anaerobic digestion with methane production and total combustion of the plant material
 - There are many different sources of raw material available in future (mainly lignocellulose from whole plants, plant waste parts, other waste)



Capgemini Consulting is the strategy and transformation consulting brand of Capgemini Group

- and it will be a matter of finding the proper mix for every individual use; raw material from algae will not be a topic in the near future
- There are many different scales in which bioenergy will be used in future from industrial level (biorefinery) to individual household level
 - Evaluating biofuel technologies it is essential to calculate the energy balance first
 - The energy efficiency of a bioenergy process is essential
 - One must not forget the transport of the raw material in that calculation; transportation is a crucial part also from a logistical aspect
 - Regarding the cities, electricity is the best idea for transportation to reduce transport of material, the drawback is lacking technology to store electricity
 - Policy makers shall commit themselves to biofuel/bioenergy regardless of the actual oil price, there is a strong need for researchers and developers on stability
 - Mandates in the US for 36bn gallons of ethanol and alternatives around 25% of the predicted total gasoline consumption by 2022
 - Brazil is fostering the biofuel production substantially
 - Europe is lacking an energy strategy, there are regional commitments which are not in line, this can lead to Europe staying behind in the use of European deriving technology
 - In developing countries there is a strong concern on food competition
 - By no means will we be able to replace the energy coming from fossil sources by biofuels; therefore we have to save energy!

Quotes

"Many of us are making mistakes, even when they think they are into that topic, as the broad field of biofuels is a bit confusing."
Cemil Giray Alyanak

"Biofuels in general will not develop, if we do not save energy."
Bernard Bigot

"We did not see any effect new president Obama's commitment on "bio" in our daily business, but all scientists I talk to are very optimistic; and if the economical crisis would not be here, they would be even more optimistic."
Michael D. Casler

"There is not one route, the demand will be very large and we have to go all routes, biochemically, thermochemically, anaerobic etc., and we will see them all materialized in the coming five years."
Bärbel Hahn-Hägerdal

"Many solutions will come to work and it is important to realize that."
Volkert Claasen

"The bigger the facility, the cheaper is the technology. But biofuels are limited as the transportation of the biomass to the plant might eat up all the energy. So you really have to do your maths."
Bärbel Hahn-Hägerdal

"Regarding biorefineries size is limited as well by logistics; raw material supply and the assurance of reasonably used side streams are essential."
Volkert Claasen



Capgemini Consulting is the strategy and transformation consulting brand of Capgemini Group

BioVision 2009 session reporting

"We will see a wave of cellulose based biofuel production plants between 2010 and 2015."

Steen Riisgard

"I am in charge of industry thinking about how to use energy like biofuels; my first question is always about efficiency, so far it is very confusing, what is being answered"

Kenji Kurata

"One problem of biotechnologists is that we are talking about opportunities much earlier than they materialize."

Steen Riisgard

"We are at the point that we have a good technology but no one is able to buy it."

Volkert Claasen

"I do not want people in BMWs to benefit from these new technologies, but I want the poor to get out of the dark."

Annie Sugrue



Capgemini Consulting is the strategy and transformation consulting brand of Capgemini Group

Document created by BioVision, in partnership with Capgemini Consulting.

www.biovision.org || © BioVision 2009