Forum on International Cooperation between Industrialised and Emerging Economies for the Promotion of Bioenergy (WS6)

- Emerging Markets Contact Forum

On occasion of the 12th European Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection

RAI International Exhibition and Congress Centre, Amsterdam, The Netherlands

Thursday, 20 June 2002, 14:30-18:00

Organised by: European Biomass Industry Association (EUBIA), with support of ETA and WIP

Chairpersons: Wolfgang Palz, Conference Chairman
Giuliano Grassi, Secretary General, EUBIA, Brussels, Belgium

SUMMARY REPORT

Jointly organised by EUBIA ETA-Florence and WIP-Munich
Supported by the European Commission, DG TREN

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Biomass resources promise to have a significant impact to the improvement of living conditions, the replacement of fossil fuels in a long term, and the protection of environment, especially in rural areas. However, though energy production from biomass has proven to be technically and economically viable, implementation of advanced bioenergy technologies has not taken-off considerably yet in many industrialised countries, as well as in emerging economies.

This forum constitutes a platform for the dialogue between different stake-holders (bioenergy experts, policy makers, donors, investors, private sector) to accelerate the deployment of bioenergy in emerging and industrialised economies through the mechanism of technical-economic co-operation. It will be a unique opportunity to bring together market players and representatives from CEE countries and countries from the Southern Hemisphere and Asia for a broad discussion on specific practical aspects, obstacles and strategies. The main objective is to identify and obtain opinions on the key factors (political, technical and financial), which are setting the stage to facilitate market accessibility and the transfer of bioenergy technology, especially for the development of rural areas. The focus will be on the conditions for private sector involvement. Furthermore, a possible action plan for international co-operation to accelerate the world-wide deployment of bioenergy will be addressed.

Agenda:

14:30-15:30	Chairmen: Welcome, introduction, framework and key-issues
15:30-16:00	Coffee break
16:00-17:45	Round-table discussion
17:45-18:00	Chairpersons: Conclusion and recommendation

- Helmut Pfrüner, European Commission DG Research, Brussels, Belgium
- Ottavio Angotti, BCIC Ltd., Nassau Bahamas
- J. J. Spaeth, DOE, USA
- Boris Utria, World Bank, Washington, USA
- Tord Fjällström, EUBIA, Brussels, Belgium
- Li Bao Shan, Ministry of Science and Technology, Beijing, China
- Denis Tomlinson, Illovo Sugar Ltd., Durban, South Africa
- Manoel Regis, Copersucar, São Paolo, Brazil
- Emilio Lébre La Rovere, CentroClima/COPPE /UFRJ, Rio de Janeiro, Brazil

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Summary Report

The chairmen Wolfgang Palz (Conference Chairman of the 12th European Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection) and Giuliano Grassi (Secretary General of EUBIA – European Biomass Industry Association) led the audience of about 70 people through the event, introduced the speakers of the round table discussion and co-ordinated the questions and discussions.


W. Palz, T. Fjällström, G. Grassi (from left)

The round table discussion started with introductory statements by the panellists:

Giuliano Grassi, EUBIA – European Biomass Industry Association, Brussels, Belgium

Dr. Grassi stresses the importance of bioenergy for rural development in many emerging world economies. bioenergy technologies represent a crucial issue for co-operation between industrialised countries and emerging countries. Many of these bioenergy technologies which could be exploited for rural development are already commercial, with a long life-guarantee. Therefore, the focus of international co-operation should be exclusively on those technologies (by means of joint ventures or technology transfer), and not on research and development aspects.

Dr. Grassi stresses the importance of the decentralised sector and small-scale equipments, rather than on large, centralised energy production. However, it is not excluded that important opportunities for industrial international co-operation could come in the large-scale sector and include the integration of bioenergy complexes in petrochemical plants.

Among the most interesting technologies for decentralised food-feed-energy production, Dr. Grassi makes the example of small integrated complexes for bioethanol production (in the size of 5-10 ton/day). Producing bioethanol from a competitive energy crop like sweet sorghum may lead to a reduction of bioethanol production costs up to 300 $/m^3, since bagasse of sweet sorghum could provide energy supply for the bioethanol production process and eventually surplus electricity to the grid, thus highly improving the economy of the system.

Another important technology is related to the production of charcoal pellets, which can be used in cook stoves in small-size villages. A feasible production capacity may reach 3-5 kg pellets/hour.

J. J. Spaeth, Department of Energy - DOE, USA

Mr. Spaeth pointed out the importance of the international co-operation in the US 2002 political agenda, though the resources assigned by the US government to fund co-operation programs are not large. He stresses the role of funding agencies like the World Bank and the UN Agency for Development, mentioning the joint program of DOE and World Bank 'Village power', a useful example of how to share resources and technologies. This program is interesting and innovative, as it links the technology and energy development with human development. As an example Mr. Spaeth mentioned a village scale demonstration program in Mozambique aiming at the enhancement of human potential and the creation of job opportunities especially in rural areas.

Ottavio Angotti, Investment Banker, BCIC Limited, Nassau Bahamas

Mr. Angotti's statement focuses on the aspects of a good project financing to ensure the success of an action in emerging economies. Thereby, it is of utmost importance to convince potential investors (private investors or funding agencies) of the necessity of the proposed project, as the best possible project is the one which is really needed.

G. Grassi, Li Bao Shan, O. Angotti, B. Utria, M. Regis

Failure of financing is often caused by wrong packaging. Project initiators are therefore required to put effort in the 'selling' of their co-operation projects to potential investors.

As an example Mr. Angotti mentioned co-operation projects with China. The highest chances for success exist if specific projects are identified in close co-operation with Chinese communities. The partners from Europe or the US provide know-how and technologies by means of joint ventures or technology transfer and the implementation of the project is performed by partners from China.

Li Bao Shan, Ministry of Science and Technology, Beijing, China

Mr. Li Bao Shan focuses on the Chinese biomass market. The biomass resources exploitable potential in the rural areas of China is around 700 Mtoe per year. In the short-term, small-scale biomass-to-electricity demonstration projects will be granted by the Chinese Government. The size of the demonstration projects will be around 800 kW- 1 MW_{el}.

Other projects concern the development of biogas plants, with the size of the new planned plants being around 1 MW_{el}, which represents a larger size in comparison with typical existing Chinese installations (few hundreds of kW_{el}).

Today, in China biomass resources are often exploited with low efficiency. Therefore, the Chinese Government has very strong interest in co-operation with companies, universities and research institutes on R&D for innovative and highly efficient bioenergy technologies. Due to the large potential of biomass resources China will offer a huge market opportunity in the near future.

Denis Tomlinson, Illovo Sugar Ltd., Durban, South Africa

Mr. Tomlinson gives a country overview of the electricity sector in the countries Tanzania, Malawi, Zambia, Mozambique, Swaziland and South Africa, pointing out the problems related to the poor infrastructure in some of these countries. He stresses the importance of bioenergy and biomass as an opportunity for rural development in Africa with sugar cane being one of the most efficient converters of natural energy.

Mr. Tomlinson stresses the advantages of south–south versus north-south cooperation projects. The latter commonly suffer from a lack of understanding of geographical, political and communication problems and often result in difficulties with the project supervision, if support personnel and systems have to be imported. The Republic of South Africa, on the other hand, is a 1st world player on a 3rd world continent, well suited for the provision of know-how and technologies. Moreover, partners from South Africa offer local expertise and regional support systems for an improved project control. As an example, Illovo Sugar Ltd. is a long term player in Southern Africa offering world level sugar industry technology together with developed networking with all Southern African countries.

The South African White Paper endorses the increasing use of renewable energy generation capacity and has recommended a set-aside target of 200 MW per year for the next decade. By the year 2010, 5% of the electricity is planned to be generated with renewable sources. Nevertheless, currently there are no legislative or regulatory incentives and the low electricity costs in South Africa render the tariffs of renewable electricity not competitive.

Boris Utria, World Bank, Washington, USA

Due to continued population growth, rapid urbanisation and the limitation of large-scale inter-fuel substitution by macro-economic and income factors, about 50% of the population in Africa will continue to depend on traditional fuels. Moreover, the development of the GDP in most African countries and the large level of investment required for energy generation facilities will cause a reduced percentage of the population being provided with a sufficient power supply. This will again have a negative effect on development as the dependence of the per capita GNP on the energy consumption is well proven.

Mr. Utria reported that the World Bank's activities in the energy sector have for a long time focussed on 'providing the best power line at the lowest cost' irrespective of health, education and gender equality implications. Now, the new approach of the World Bank towards energy projects implies that no investment in the energy field will be done without fulfilment of the following four criteria: Environmental Sustainability, Direct Poverty Alleviation, Macro/Fiscal Stabilisation and Governance/Private Sector Development.

With respect to the promotion of bioenergy there is still a long way to go and the biomass agenda of the World Bank is currently being developed. Mr. Utria pointed out that the World Bank will rely on support by the European Union in this subject. Additionally, Mr. Utria regards the involvement and commitment of large market players in the energy sector (e.g. Shell, BP) as a key issue for the promotion of bioenergy.

Emilio Lébre La Rovere, CentroClima/COPPE /UFRJ, Rio de Janeiro, Brasil

Prof. La Rovere presented an introduction of the SouthSouthNorth project, a case of international co-operation on CDM (Clean Development Mechanism). The mission of the SouthSouthNorth (SSN) project is to design, develop and implement Clean Development Mechanism projects under the Kyoto Protocol. While details of the CDM are still being negotiated, it has been established that Northern countries may achieve a portion of their obligations through investing in projects in Southern countries, so long as these projects contribute to the sustainable development of the host countries and result in the global reduction of GHGs.The CDM is a market-based instrument. It works on the basis that Northern parties will pass on GHG reduction targets to private and public institutions who will optimise the costs of achieving compliance using a range of instruments, mainly through domestic action. The CDM is an instrument which could be used to meet part of the commitments if the price, opportunities and risks make economic sense. Cheaper Southern projects are the incentive for investors to seek hosts for CDM projects, or equally, Southern hosts could develop and "market" projects.Advantages of self developed CDM projects include, that hosts could identify suitable projects effectively, that hosts can co-operate to build a skills base, manage risks and transfer

D. Tomlinson, W. Palz, T. Fjällström, G. Grassi, E. La Rovere

technologies and that investors and risk insurers can be brought in at any stage of the project implementation.

The SouthSouthNorth Project creates the framework for self-developed CDM Projects, provides funding and professional services, and through the process of Development Facilitation, allows stakeholders to identify, design, and implement projects themselves.The SSN Project operates in Bangladesh, Brazil, Indonesia and South Africa, with financial support from the Dutch Government. It is a public interest experiment in the development and transaction of 8 pilot CDM projects in 4 southern countries in order to test, refine and develop the CDM project cycle, contribute to learning and capacity development, and produce bankable Certified Emissions Reduction units (CERs).

Manoel Regis, Copersucar, São Paolo, Brazil

In 1978 the Brazilian Government initiated the BioAlcool Programme in order to reduce the national dependence on imported fossil fuels. After the petroleum crisis this Programme was regarded as a matter of national security and the legislation was implemented rapidly by a strong Government. The production of ethanol in Brazil followed a 'learning curve' until the late 80ies, when a shortage of ethanol production resulted in a loss of public confidence and a reduction of the sales of ethanol cars. Until today the ethanol production is constant with a capacity of 11 million m^3 per year. The price of ethanol currently amounts to about half the price of fuel and the distribution system comprises 26.000 fuelling stations each equipped with an ethanol pump.

O. Angotti, B. Utria, M. Regis, H. Pfrüner

Since several years Brazil is considering regulations on 'Power Generation from Bagasse', but no actions have been taken until recently, as the political commitment was missing. Today, legislation has been passed providing free access to the grid and controlled tariffs for the transfer of electric power. Additionally, last year it was concluded to set-up a generation capacity of 3.300 MW based on renewable sources such as biomass, wind and small hydro. In the long term a fixed generation capacity percentage will be attributed to renewable energy sources.

The experiences gathered in Brazil therefore clearly indicate, that a decisive pre-requisite for the introduction of renewable energy sources is the creation or existence of a supportive legal framework and therefore a strong Governmental commitment towards renewable energies.

Helmut Pfrüner, European Commission, DG Research, Brussels, Belgium

The main focus of the Sixth Framework Programme for Research & Technological Development (FP6) is the creation of a European Research Area (ERA) as a vision for the future of research in Europe. It aims at scientific excellence, improved competitiveness and innovation through the promotion of increased co-operation, greater complementarity and improved co-ordination between relevant actors, at all levels. Thereby, the ERA is mainly concerned with the shaping of the European enlargement process and the commercial competition of the EU with the USA.

The international dimension of the ERA will focus on an enhanced attractiveness to the best scientists, making the ERA a world class reference centre. It will open EU programmes to participation by third country researchers and organisations and develop specific international S&T

activities (INCO-DEV, INCO-MED) useful to the implementation of EU foreign policy and development aid. Finally, the ERA will enlist S&T resources of EU and third countries in initiatives that provide a response to world problems (e.g. food safety, environmental sustainability, major diseases connected with poverty).

The success of the ERA will be based on the enlargement of the human capital through the creation of Networks of Excellence and thereby provide opportunities for knowledge and human capital transfer to developing and emerging countries. In the field of bioenergy, the ERA can significantly contribute with its profound knowledge on biofuel technologies and legislation as well as small-medium- and large-scale combustion technologies.

Tord Fjällström, EUBIA, Brussels, Belgium

A number of expert European small and medium size companies engaged in innovative bioenergy technologies (e.g. pelleting, biofuels) are members of the European Biomass Industry Association. These companies often face management and logistics problems when they engage in technology transfer projects. Moreover, the fear of knowledge 'loss' or 'fraud' is often seen as a mayor obstacle to a participation in international co-operation projects.

Therefore, it is one of EUBIA's most important activities to assist SMEs to overcome these problems and to initiate joint projects between companies from the European Union, emerging economies (e.g. Brazil, China, South Africa) and developing countries.

In the following, selected contributions of the plenary discussion are summarised:

Paulino López Guzmán, Ministerio del Azúcar, Cuba

Dr. Lopez brought to attention the fact that the developed countries only spend approximately 0.7 % of their GNP for Development Assistance. Therefore, the gap between the rich northern countries and the poor south widens every year. Additionally, a lack of understanding by the developing world was expressed with regards to the fact the largest single producer country of GHG will not sign the Kyoto Commitment.

José Roberto Moreira, CENBIO – Centro Nacional de Referência em Biomassa, Brazil

In 1999 a publication of the International Energy Agency (IEA) stated that the price of bio-ethanol is 2-3 times the price of fuel, which is in strong contradiction to the experience gained in Brazil. Prof. Moreira stated that after this publication it had been a lot more difficult to convince people of the advantages of bio-ethanol. Certainly, mis-information of this kind will not lead to a promotion of bioenergy and is to be avoided.

It is expected that ethanol will play a major role in the future for Brazil, but for the creation of a global ethanol market the involvement and commitment of a large number of countries will be essential. Prof. Moreira stressed that it is necessary to focus on large-scale markets in order to develop sustainable economies of emerging countries. The import of bioethanol by developed countries can therefore be regarded as an essential part of the technology transfer.

Thereby, a promising strategy to deploy large-scale utilisation of bioenergy is to identify pragmatic options, comprising the availability of biomass resources as well as processing technologies, which are suitable for the penetration into commercial markets.

Wolfgang Palz, Conference Chairman

The IEA publication mentioned by Prof. Moreira can be regarded a very typical problem. Liquid biofuels have entered the European agenda only recently. A biofuels regulation is currently being elaborated. Additionally, import taxes posed by the developed countries on products from emerging or developing countries today constitute a mayor obstacle to free trade and will hinder the creation of a global bioethanol market in the near future.

Helena Chum, DOE, USA

Dr. Chum invites Brazil, the world's leading producer of bioethanol, to join the IEA Bioenergy tasks on liquid biofuels.

Leiner Vargas, Centre for Political Economy and Sustainable Development, Costa Rica

Mr. Vargas pointed out that a transfer of technology always has to be closely connected with a transfer of organisation and institutions, and even culture. This may pose difficulties for entrepreneurs from developed countries and it is therefore recommended to involve local actors. This will also ensure that the actions taken are supported and needed by the local people which is indispensable for success.

P. Carstedt, BioAlcohol Fuel Foundation - BAFF, Sweden

Mr. Carstedt focuses on the biomass and biofuels trade. Biofuels cannot play a significant role because their globally produced amount is small. However, their production potential is very high and the initiation of a transfer of technology in emerging economies countries could lead to a reduction of production costs.

Bioethanol trade, and generally, the increase of biofuels production from energy crops, is still politically considered as an 'agricultural issue', while in general biofuels should be treated as 'energy commodities'. He supports the idea of producing large ethanol amounts in developing countries, as this could be beneficial for their economies and, indirectly, for the economy of industrialised countries as well.

José Roberto Moreira, CENBIO, Brazil

Prof. Moreira agrees with P. Carstedt, that the production costs of bioethanol in tropical developing countries are very low, and that therefore the production in those areas should be intensified. The real 'enemies' for the development of biofuels are the fossil fuels companies. In this respect, a large opportunity to launch bioenergy/biofuels projects could come from the CDM/JI projects.

Emilio Lébre La Rovere, CentroClima/COPPE /UFRJ, Rio de Janeiro, Brasil

Prof. La Rovere stresses that it is of extreme relevance that large quantities of ethanol are produced, independently of which country produces them. This is a much more general approach towards all renewable sources, as particular renewable sources should be applied in regions where they are best suited. Finally, Prof. La Rovere agrees on the opportunity to exploit the CDM/JI to start bioenergy projects between industrialised and emerging economies.

Julio Torres Martinez, Cuban Observatory for Science and Technology, Cuba

Mr. Torres proposes to consider the Sugar Agroindustry as one of the most important branches of Cuban Energy Sector. The main reason for this is the large energy potential of sugarcane biomass when it is used with modern technologies to produce electricity and alcohol which in turn could substitute oil with high efficiency in multiple energy services, plus a reduced environmental impact. Today, the Cuban Sugar Agroindustry is established as the third national energy source (only preceded by efficiency and national crude oil), and its strategic role for the development of the National Electroenergetic System (NES) is highlighted. About 90 % of the Cuban electricity demand can be covered by highly efficient exploitation of sugar cane.

Wolfgang Palz, Conference Chairman

Today, in countries like Cuba the sugar cane bagasse is often burned with very low efficiency and a lot of energy is wasted. Application of innovative technologies could significantly contribute to the substitution of crude oil and coal.

Boris Utria, World Bank, Washington, USA

It is fundamental to inform politicians, economists, ministers of finance, etc. about the opportunities offered by bioenergy. There is still a lack of knowledge at high political level about bioenergy. Bioenergy can become an essential instrument for co-operation only if governments are well and correctly informed. Mr. Utria agrees with the previous speakers that trade of biomass/biofuels is fundamental to open the doors to bioenergy in the political agenda of the world leaders.