EUBIONET 3

Solutions for biomass fuel market barriers and raw material availability - IEE/07/777/SI2.499477

Barriers and opportunities for bioenergy trade and increased utilisation

Workshop summary

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Content

Preface

This publication is part of the EUBIONET III Project (Solutions for biomass fuel market barriers and raw material availability - IEE/07/777/SI2.499477, www.eubionet.net) funded by the European Union's Intelligent Energy Programme. EUBIONETII is coordinated by VTT and other partners are Danish Technological Institute, DTI (Denmark), Energy Centre Bratislava, ECB (Slovakia), Ekodoma (Latvia), Fachagentur Nachwachsende Rohstoffe e.V., FNR (Germany), Swedish University of Agricultural Sciences, SLU (Sweden), Brno University of Technology,UPEI VUT (Czech), Norwegian University of Life Sciences, UMB (Norway), Centre wallon de Recherches agronomiques, CRA-W (Belgium), BLT-HBLuFA Francisco Josephinum, FJ-BLT (Austria), European Biomass Association, AEBIOM (Belgium), Centre for Renewable Energy Sources, CRES (Greece), Utrecht University, UU (Netherlands), University of Florence, UNIFI (Italy), Lithuanian Energy Institute, LEI (Lithuania), Imperial College of Science, Imperial (UK), Centro da Biomassa para a Energia, CBE (Portugal), Energy Restructuring Agency, ApE (Slovenia), Andalusian Energy Agency, AAE (Spain). EUBIONET III project will run 2008 – 2011.

The main objective of the project is to increase the use of biomass based fuels in the EU by finding ways to overcome the market barriers. The purpose is to promote international trade of biomass fuels to help demand and supply meet each other, while at the same time the availability of industrial raw material is to be secured at reasonable price. The EUBIONET III project will in the long run boost sustainable, transparent international biomass fuel trade, secure the most cost efficient and value-adding use of biomass for energy and industry, boost the investments on best practice technologies and new services on biomass heat sector and enhance sustainable and fair international trade of biomass fuels.

As part of work package 2 of the EUBIONETIII, three expert workshops are scheduled. The first one took place in March 2009 in Brussels, Belgium. This is the summary of the second workshop, organized jointly by EUBIONET III and IEA Bioenergy Task 40, on the topic of Barriers and opportunities for bioenergy trade and increased utilisation. The workshop was organized as a side-event during the 17th European Biomass Conference & Exhibition, Thursday, July 2nd 2009, Hamburg, Germany. Eija Alakangas, (VTT) was chairing the workshop.

During this workshop, results were presented from several international projects focussing on European and global bioenergy trade. Special focus was on the development of solid biomass trade (mainly wood pellets, also wood chips and agricultural residues). The aim was to highlight current developments and opportunities of solid biomass trade, as well as the main barriers hampering further growth. On the following pages, a short summary of each presentation is given, including the view of the presenters on main trade barriers, and the ensuing discussion. All presentations are available for download at www.eubionet.net and www.bioenergytrade.org

Martin Junginger, Utrecht, July 2009

Eija Alakangas and Kati Veijonen, Jyväskylä, July 2009

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1 Martin Junginger - Opportunities and barriers for trade of solid biomass and use in new industries – Results from EUBIONET III (Part 1) and IEA Bioenergy Task 40

After a brief word of welcome by the chair of the workshop, Mrs. Eija Alakangas, Martin Junginger proceeded to present an overview of both the EUBIONET III project and results from IEA Bioenergy Task 40.

Mr Junginger presented results from the EUBIONET III and Task 40. On the current solid biomass in Europe, preliminary results indicate that roughly about 50% (1.5 TJ) of the total potential (3 TJ) is utilized. Especially utilization of fruit & herbaceous biomass is (very) low, while use of refined biomass has strongly increased in recent years. However, data from more than 10 countries is still missing, so these figures are still subject to change. Yet, it is clear that data on both potentials and (detailed) utilization is very hard to find in many European countries.

Next, he showed project results of biomass use in 'new' industries (industries with either biomass by-products or high energy consumption). The biomass sue in these sectors is often marginal or unknown. The manufacturing of cement, chemicals and food however show promising increases in biomass utilization in some countries. Again, data availability on biomass potentials and use differs strongly per country – given low utilization, this is understandable, but also a point of attention.

The third part of the EUBIONET III presentation focussed on biomass trade barriers. According to traders in various European countries, the main two barriers included raw material availability (mentioned in Austria, Belgium, Portugal, Sweden, but not in the Baltic countries) and logistics (by traders from Latvia, Portugal, Sweden), including high prices for truck transport, lacking intermediate storage capacity, and environmental concerns regarding long-distance transport by truck.

Next, Martin also presented preliminary results from the IEA Bioenergy Task 40/ UNIDO/ UNCTAD questionnaire on barriers and opportunities for bioenergy trade. The results show that trade of solid biomass is taking place on a large-scale across Europe (and globally) and is steadily increasing. Logistics again seem to be the key barrier, and further work required on optimizing infrastructure (intermediate storage, transport by train etc.). Furthermore, use of a uniform EU-wide standard for industrial & non-industrial wood pellets seems highly recommendable. Finally, sustainability certification for solid biomass is seen by many as a clear opportunity, but possibly costs and a variety of systems may cause additional barriers for trade.

Comments / questions:

Question 1: Will both projects make projections or roadmaps, how each EU country will need to use biomass to reach its renewable energy / biomass targets, and thus how much they will have to import? Eija Alakangas and Martin Junginger replied that such an analysis will be carried out partially in EUBIONET III, mainly regarding their domestic biomass potentials.

Question 2: What about the Brazilian wood pellet production potential? Some discussion developed on the topic. The conclusion was that there is definite a technical potential, and that the current Brazilian infrastructure would also enable export, but that market prices in Europe are currently too low to justify export.

One participant noted that the trade of wood chips was largely missing in both presentations. Wood chips for energy use currently represent large trade flows, and also have specific trade barriers.

2 Wolfgang Hiegl - Transparency for the European Pellets Market. Project results: Pellet trade

Wolfgang Hiegl presented an overview of the Pellets@las project, including production and consumption of wood pellets in selected European pellet markets, and wood pellet end-consumer prices all over Europe. He demonstrated that price ranges for consumers can vary largely over Europe, up to a factor of 2. He showed also local trade flows, for Austria and Germany, and illustrated characteristics in several European countries.

Comments / questions:

One participant wanted to know what the reasons are for price difference of a factor of 2 between Poland and Sweden.

Bo Hektor (IEA partner from Sweden) replied that the main reason was the dramatic drop in Swedish currency compared to Europe. Additional factors included the rapid increase in demand for wood pellets and the fact that the figures presented are only referring to 70% of the producers in Sweden. Prices of the other 30% traders may be quite different.

Bengt Hillring (EUBIONET III partner from Sweden) added that the price of oil stays constantly high in Sweden because of taxes on fossil fuels, and thus also the pellet price will remain rather stable.

3 Michael Gudera Experience with the development and exploitation of international markets for wood pellets

Michael Gudera gave a short introduction of the activities of GEE Energy related to bioenergy trade and differences in structures and customer requirements in various countries / regions. He pointed out that wood pellet heating markets differ very strongly within Europe because of

- historical reasons
- climatic reasons (length of the heating season),
- technical requirements for wood pellets and
- political/legal structures.

Regarding specific trade barriers, Michael noted:

- Producers' lack of flexibility regarding changes in demand (qualities) due to a narrow range of raw materials
- Lack of flexibility of large-scale plants (mass production)
- Lack of experience of new producers and exporters concerning the actual requirements in target markets
- Seasonal fluctuations in the demand

- Fluctuations in manufacturing costs and prices (e.g. due to raw materials costs)

- Significant market fluctuations due to the relatively small size of the overall market

Comments / questions:

One participant wanted to know whether GEE uses any sustainability criteria for wood pellets purchased from producers. Michael replied that GEE always checks the raw material source, especially when it is from the forest. However, GEE does not have an own sustainability certificate. Michael confirmed that in some cases, if GEE does not trust the source of the raw material, they do not use the supplier.

One participant wanted to know what the main factors are determining the price of long-term contracts for pellet deliveries.

Mr Peltz replied that major power plants want fixed prices for 5-10 years periods. However, pellet suppliers cannot hedge the raw material supply, and thus they are generally unable to offer such long-term contracts.

4 Michael Deutmeyer - One million tons of biomass per year for BTL production in Germany

Mr Deutmeyer presents the current situation of CHOREN's beta and sigma plants. The beta plant will start producing syngas from October onwards, and will hopefully produce BTL from early 2010 onwards. He then presented a detailed study regarding their plans how to supply 1 million tonnes of biomass to the sigma plant per year. The analysis includes prices for wood are roughly 40 Euro/bdt (bdt=bone dry ton), but logistics can lead to total delivered prices of up to 120 Euro's per

tonne. Interestingly, short-rotation coppice plantations can contribute competitively, and should contribute 50% of the total feedstock for the Schwedt plant, thereby making the fuel supply secure and less price fluctuations. Use of used wood will diminish up until 2020.In fact the catchment area to supply 1 million tonnes within a circle with a radius of only 63-73 km, which is economically still feasible. Michael concluded that vertical integration of the biomass supply is very important for large-scale biomass user.

In Mr Deutmeyer' view, the main factors hampering bioenergy trade are:

- Reliable and low cost certification schemes
- Low cost and high quality preconditioning
- High transportation and handling cost
- Broad array of energy biomass qualities

He recommended to:

- Develop and install certification schemes
- Increase R&D in biomass preconditioning technologies
- Commoditization of energy biomass

5 Matti Sihvonen - Price indexes for large- and medium-scale use of pellets

Mr Sihvonen illustrated the basic rules how the various indexes are established and how they are made representative and reliable. Foex Indexes is developing a global index for industrial pellets, but in several steps (see the slides). The official index for the North-Atlantic / a North Sea port will hopefully be published within 4-5 month.

In Mr Sihvonens view, the main challenges in the development of wood pellet trade are:

- Consumer and medium scale user business is already rather well developed and balanced between producers and sellers.

  ⇒ Possible to use indices against price risks

  ⇒ Producers emphasis is on consumer and middle size users as growth area due to better profitability

- Large scale use is in an oligopolistic state; only few really big buyers dominate the trade, suppliers are medium scale enterprises not strong-enough to defend their interests.

  ⇒ No reliable price risk coverage methods at present available

  ⇒ Pricing panels and other opinion based systems do not fit into wood pellets at it' s present state

- If the globally planned investments in the use of wood pellets are realized the market will be big and liquid enough by 2012 to create possibilities for the trade to mature

6 Max Nitschke - Challenges in trading solid biofuel

Mr. Nitsche showed the use of biomass in Denmark, consisting largely of wood pellets, straw and wood chips. Wood pellets are imported, about 10%of the wood

Wood pellet prices follow the coal prices *somewhat* when the effects of CO_2 prices are included. Wood chips for fuel on the other hand have rather stable prices.

According to Mr. Nitschke competition between pellets and chips is dependent on freight and regional price differences. In summary, if freight rates are high, pellets are preferred. If freight rates are low, wood chips are the preferred choice.

Another trade barrier specifically for wood chips is phytosanitary risks – i.e. the requirements for wood chips from specific feedstocks to kill fungi and bacteria through in-transit shipboard fumigation.

According to Mr. Nischke, harmonization of

a) the definition of sustainability for wood chips and wood pellets, and

b) the subsidies and support schemes

would support the growth of solid biomass trade in the future.

Appendix 1 – Participants list

Name	Organisation	Country	
Alakangas, Eija	VTT	Finland	chair
Barnard, Niel	Ceres Ventures, Ltd.	UK	
Bingham, John	Hawkins Wright	UK	
Corso, Andrea	BRG Consult	UK	
de Post, V.	Hanze Consult	Netherlands	
Decrierdt, Nathalic	VITO	Belgium	
Deutmeyer, Michael	CHOREN	Germany	speaker
Diesenreiter, Friedrich	Energy Economics Group	Austria	
Egger, Christiane	D.Ö. Energiesparebaud	Austria	
Elingaard, Erik	DONG Energy Power	Denmark	
Evald, Anders	Force Tech.	Denmark	
Funahashi, Satomi	Fuji-Keizai	Japan	
Geletukha, Georgi	SEC Biomass	Ukraine	
Giglioli, Romano	University of Pisa	Italy	
Gonzales, Jose Manuel	Santa Lidia	Chile	
Gudera, Michael	GEE Energy	Germany	speaker
Hasselmann, Heinrich	N Global	Germany	
Hatsamura, Y.	Hiroshima University	Japan	
Herold, Irmgard	New Energy Finance	UK	
Hertor, Bo	1st Bioenergy Ab	Sweden	
Hiegl, Wolfgang	WIP	Germany	speaker
Hillring, Bengt	Hedmah University	Norway	
Junginger, Martin	Utrecht University	Netherlands	speaker
Kaszas, Csilla	BUTE	Hungary	
Kjaegaard, Dorte	DONG Energy	Denmark	
Lerman, Alexandra	German Energy Agency	Germany	
Makhovski, Vladimir	ALTbiot	Russia	
Manning, Eibhilin	EUBIA	Belgium	
Mitchell, Peter	SouthEast Fibre Export	Australia	
Nitschke, Max	DONG Energy	Denmark	speaker
Nyström, Ida-Linn	Luleå Univ. of Tech.	Sweden	
Parous, Lou	Tekalloy SA	China	
Peltz, Chris	Gusco Handel	Germany	
Perry, Miles	Imperial College	UK	
Poganietz, Witold-Roger	FEK-ITAS	Germany	
Quintili, Sonia	Enel Trade SpA	Italy	
Raczkowski, Magdalena	DONG Energy	Denmark	
Ranta, Tapio	LUT	Finland	
Rauch, Peter	BOKU	Austria	
Sandor, Csaba	BUTE	Hungary	
Schlichting, Julia	Marquard & Bahls AG	Germany	
Schuck, Steve	Bioenergy Australia	Australia	
Schytz, Michael	DONG Energy	Denmark	
Sihvonen, Matti	FOEX Industry	Finland	speaker
Sze, Timothy	CBD New Energy	China	
Talla, André	ENSP	Cameroon	
Toshikazu, Yano	Miyasi University	Japan	
Tranberg, Erik	DONG Energy	Denmark	
Wadenbäck, Johan	Vattenfall	Denmark	
Wagener-Lohse, Georg	FEE	Germany	
Waldron, Dave	Alstom Power	UK	
Wessman, Helena	VTT	Finland	
Wiklund-Lindström, S.	Umeå University	Sweden	
Witold-Roges, Pogoniete	FZK-TTAS-ZTS	Germany	
Witt, Janet	DBFZ	Germany	