The global wood pellet trade – markets, barriers and opportunities

Workshop summary

June 17, 2008, Academiegebouw, Utrecht, the Netherlands

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A PELLETS@LAS workshop

Programme

9:00	*Registration and coffee*	
9:15	Martin Junginger (Utrecht University)	Introduction and workshop setting
9:30	Jonas Dahl (FORCE Technology)	European production, trade and consumption of wood pellets – first results from the Pellets-@las project
9:55	Richard Sikkema (Utrecht University)	From producer to end-consumer: typical local and international European pellet chains evaluated first results from the Pellets-@las project
10:20	Martin Junginger (Utrecht University, IEA Bioenergy Task 40)	Global saw dust and wood pellet potentials: almost unlimited supply for Europe?
10:45	*Coffee break*	
11:15	Peter-Paul Schouwenberg (Essent, IEA Bioenergy Task 40)	The importance of global sourcing of wood and coffee husk pellets for co-firing
11:50	Christian Schlagitweit (Propellets)	Local pellet markets in Europe for residential heating
12:15	Tjipke Hoekstra (Control Union)	Certifying sustainable wood pellets
12:40	*Room for questions and discussion*	
13:00	*Lunch*	*A free lunch will be served*
14:00	Wijnand Schonewille (Harbour of Rotterdam)	What it takes to become a global pellets hub
14:25	Ger Ostermeijer (Peterson)	Large-scale pellet logistics
14:50	Xander van Tilburg (ECN)	Policy design to support the large-scale use of wood pellets
15:15	*Coffee break*	
15:45	Open workshop	Barriers and opportunities for global pellet trade: ○ Where do the participants see the European / global wood pellet market heading within the next 5-10 years? ○ What are the main barriers for the international trade? What the main drivers? ○ How does large-scale import of wood pellets affect the European markets?
17:00	*Closing and drinks*	

The presentations can be downloaded at the Pellets@las website:
http://www.pelletcentre.info/cms/site.aspx?p=7202

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Introduction and objective

Within the framework of the Pellets@las project, on June 17th 2008, a workshop on international pellet trade was held in Utrecht, the Netherlands, organized by the Copernicus Institute, Utrecht University. The aim of the workshop was to identify current developments, bottlenecks and opportunities for international/global pellet trade. The number of participants was limited to 50 to enable a fruitful debate. A limited number of international pellet traders, large scale users and scientists were invited, including members of IEA Bioenergy Task 40 on sustainable international bioenergy trade.

Summary of the presentations, the discussion and the main findings

The workshop was set-up to cover the entire pellet supply chain, including the current general trends in Europe (Dahl), developments on the pellet supply side (Junginger, Schouwenberg), the logistical issues (Sikkema, Schonewille and Ostermeijer), the developments in wood pellet demand (Schlagitweit), and overarching issues such as the development of sustainability criteria and need for and certification (Hoekstra) and the difficulties in designing support policies for large-scale co-firing of pellets (van Tilburg). In many of the presentations, it became evident that the wood pellet market is strongly growing (especially in North-America and Russia), but that is also still an immature market, influenced by factors such as subsidy schemes, resource availability/scarcity, fossil fuel prices and seasonal influences. With the possible advent of 2nd generation biofuels, there may an increased focus of sourcing woody feedstocks other than sawdust (e.g. forest floor residues or entire trees), or go for other residue streams such as bagasse, rice husk or coffee husk pellets. On the demand side, further growth can be expected, mainly due to rising (heating) oil prices – the potential market for substituting heating oil is 150 Mtonne/yr. The presentations of Schonewille and Ostermeijer clearly showed that logistical issues of inter-continental pellet trade should not be underestimated. Certification of wood pellets is not (yet) a hot topic, but may become so in the following years as increasingly over Europe, sustainability requirements for biomass are being formulated. Finally, while fluctuating policy support is often blamed for rapidly changing pellet prices and changing trade flows over Europe, the immature pellet market makes it also hard to develop adequate policy support systems which gap the financial bridge to fossil fuels but prevent over-stimulation at the same time.

In order to kick-off the discussion at the workshop, beforehand, the participants were asked to fill in a short questionnaire regarding opportunities and barriers for the international pellet trade, the largest producing and consuming regions, and which logistical challenges were deemed most important. Of the 45 participants, 23 had filled in the questionnaire. The results are presented and discussed below.

Figure 1 Main barriers on the short term for international wood pellet trade

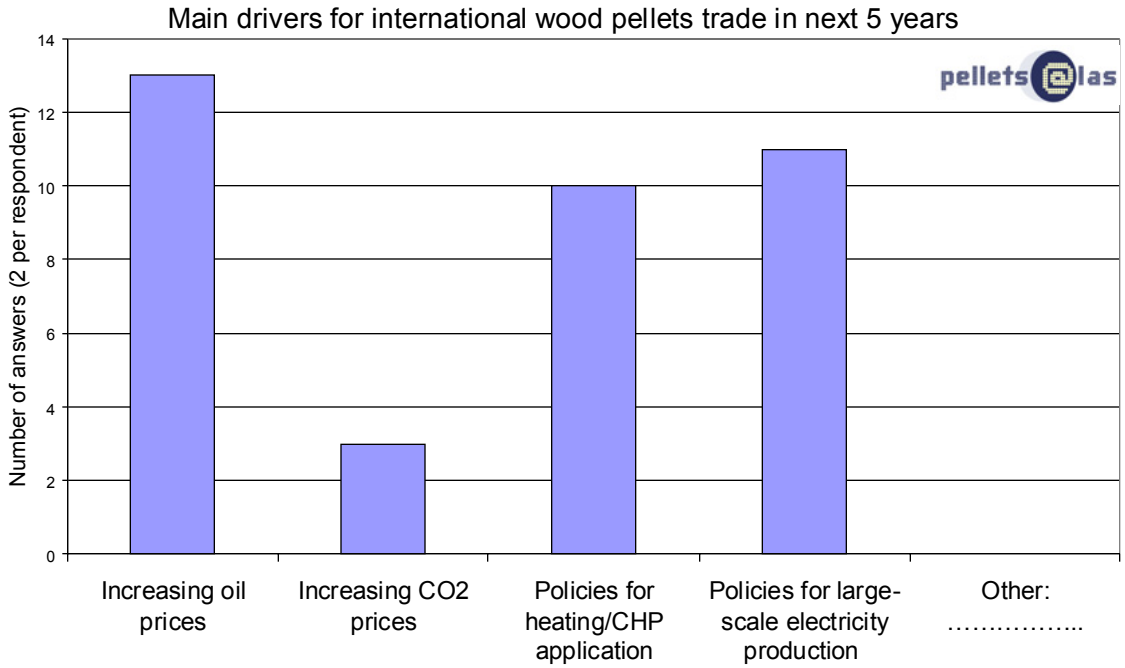

Figure 2: Main drivers for international wood pellets trade in next 5 years.

As can be seen in figure 1, most participants deemed rising feedstock costs as most **important barrier** for nearby future, closely followed by fluctuating support measures for large-scale co-firing of wood pellets with coal. Sustainability criteria, competition with coal, gas and other fossil fuels were expected to be minor barriers, as were lack of transparent price statistics. Interestingly, meeting quality standards and overcoming logistical barriers were not regarded as major obstacles by any of the participants.

Furthermore, when being asked for the **main drivers** for the wood pellet trade, policy support for both large- and small scale were deemed very important, only surpassed by (further increasing) oil prices. Interestingly, Increasing CO2 prices were only seen as a minor driver, with contrasted with the presentation of van Tilburg, which indicated that a CO_2 price of 25 Euro/tonne can significantly increase the economic reliability of pellets for co-firing compared to coal.

Even though **logistical barriers** had not been nominated as a major barrier, when asked specifically about challenges to be tackled, the development of dedicated pellet terminals at major harbors deemed an important step, as was the development of pretreatment options such as torrefied pellets (see figure 3).

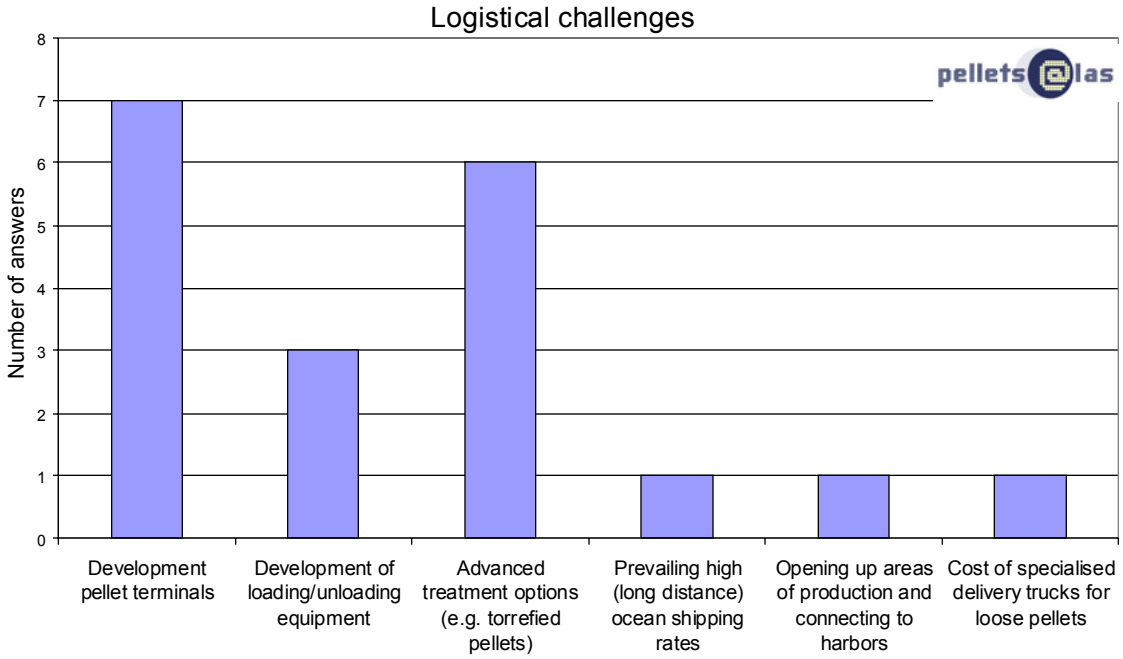

Figure 3: Anticipated logistical challenges to be tackled

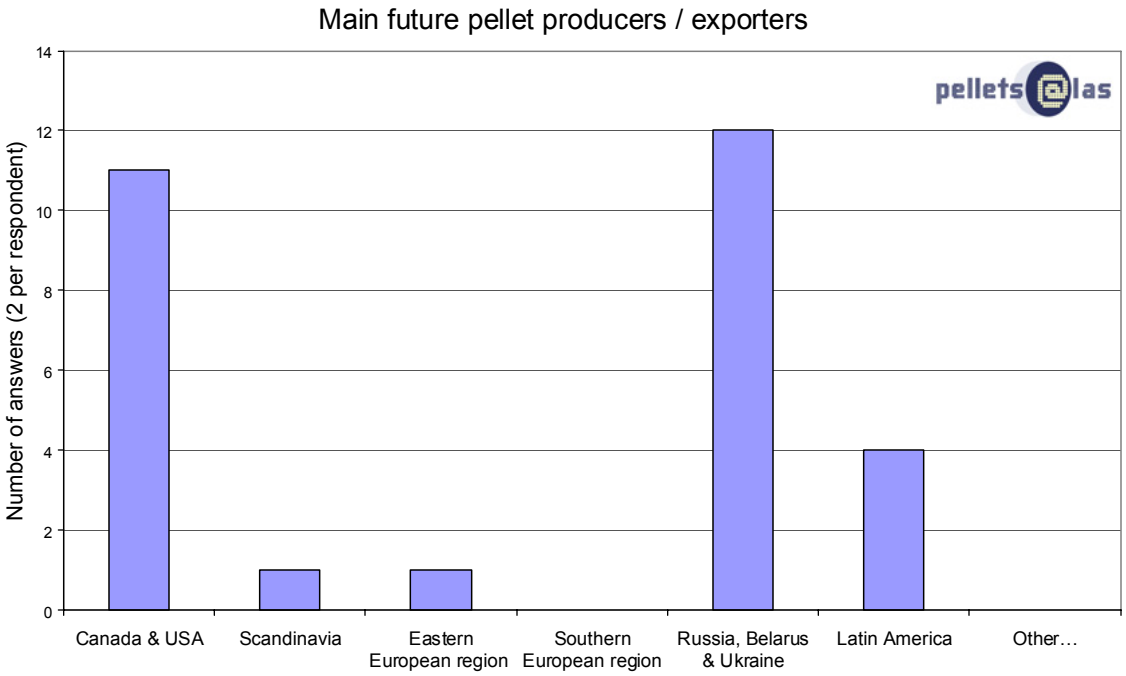

Figure 4: Expectations for the main growth in wood pellet production in the coming 5 years

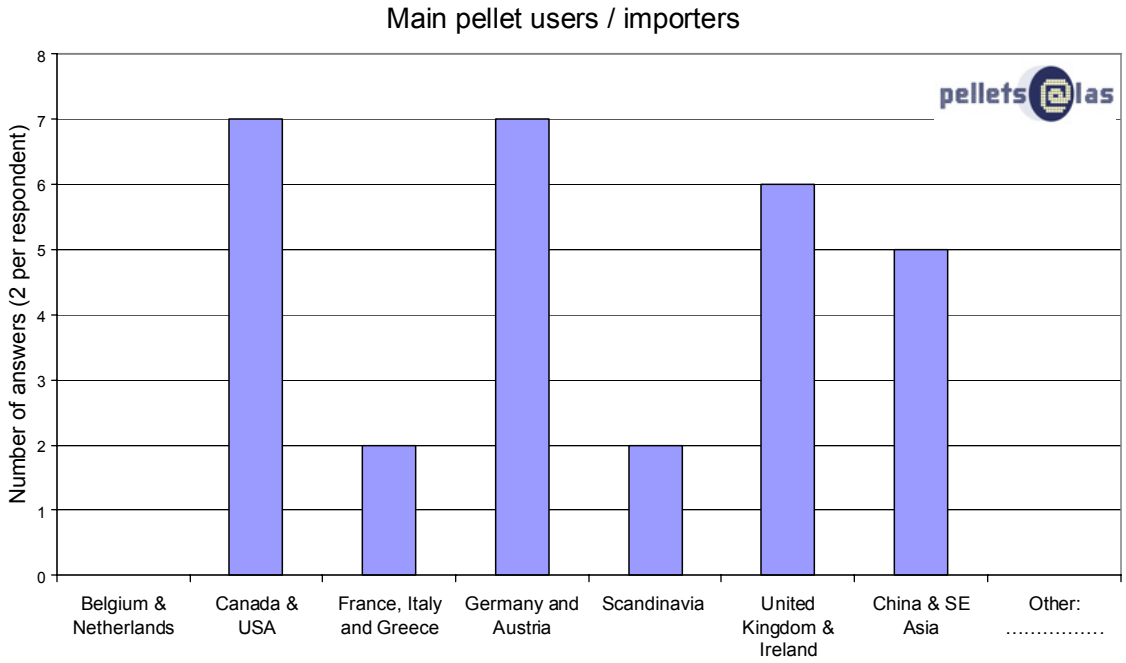

Figure 5: Expectations for the main growth in wood pellet demand in the coming 5 years

Finally, the participants were asked in which geographical region the largest growth in wood pellet production and consumption would occur in the next 5 years. Expectations regarding production were very clear: Canada and the US, and Russia, Belarus and Ukraine were indicated as the most important producing and exporting regions for the global pellet market (see figure 4). The picture for pellet demand was more heterogeneous: interestingly, for the US and Canada also a large increase in (domestic) pellet consumption was expected. Many participants also expected pellet demand to grow strongly in Germany and Austria. Remarkably, also South-East Asia was indicated by some experts as possible growing pellet consumer (see figure 5).

Following the presentation of the results of the workshop, a lively discussion developed, to which many participants contributed. Below, the main points made were summarized:

On competition for the raw material:

- **Demand of timber products**. In North America the availability of raw material is affected by the house market. Less building of wooden houses led to a downfall in lumber production and the byproducts sawdust and shavings. The total effect was a reduced supply of raw material for the pellet producers.
- **Second generation biofuels**. Another new development is the use of biomass for biofuels. In the future, this may cause extra shortage of raw material for the production of pellets in the heating & electricity sector. Consequently, the pellet producers are already looking upstream for new resources to their supply.
- **Re-allocation of supply**. Other workshop participants voiced that the scarcity of sawdust is not a structural one. The audience believed that a more dynamic relocation of unused resources to existing pellet production facilities is a realistic option.
- **Diversification of feedstocks and technical bottlenecks**. Not every raw material is suitable for the production of pellets. The power and heat producing companies allow only a limited number of (by)products, due to their rigid boiler specifications and meeting ash requirements.
- **Logistic bottlenecks**. Not every geographical area with a surplus of sawdust and other wood residues supply the market. For example, Latin American pellet supply (from forest residues) is currently hampered due to bad and expensive logistics across the continent.

On sustainability & certification:

- **New certification issues**. If pellet producing factories have to look further upstream for new raw material, they will come up with the use of forest residues in the forest or even the chipping of trees for further processing. In this case, the certification requirements (e.g. based on the Dutch framework of the Cramer commission) will be higher. The land change, biodiversity and greenhouse effects from the forest will become a major factor to take into consideration. This belief is not widespread under the audience of the pellet workshop, however, as other state that current FSC & PEFC certification may be enough for easy compliance with the sustainability theme.
- **Closing nutrient cycle in forests**. An extra incentive may be the prevention of forest fires by taking away forest residues. However, the question was raised whether this may be sustainable due to the loss of forest nutrients. The Swedish pellet market solves that shortage by returning the ashes (from heating & electricity) plants.

On support policies:

- **Policy goals** are determining factors (electricity, heat). The international character of policy goals (renewable electricity; green heat), will be one of the key factors for further price changes in near future and the search for new resources.
- **Relationship of fossil fuel market & biomass resources**. When reserves of fossil energy sources are getting lower, the need for renewable energy sources will grow and, consequently, the prices of biomass. In that case the governmental support is still valid, depending on the kind of biomass. In case of forest and wood residues, the audience states there is a certain relationship of fossil fuel prices and wood residues. In case of some main agricultural commodities (sugar cane, maize), the relationship with the bio-energy market is not clear to support the hypothesis.
- **Heating market characteristics**. The heating oil is a rather fluctuating market and in that case subsidies may be very helpful. In Austria investment subsidies for boiler have been very successful.
- **Electricity market characteristics**. Co-firing of wood pellets is capital extensive and electricity production costs are mainly determined by the price of coal, the price of CO_2 and the price wood pellets. While price indexes for the first two are well-established, the current lack of a pellet price index makes it extremely hard to develop an adequate governmental support system.

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Annex 1: Participants list

	First name	Surname	Affiliation
1	Jonas	Dahl	FORCE
2	Christian	Schlagitweit	ProPellets
3	Richard	Sikkema	Copernicus Institute
4	Martin	Junginger	Copernicus Institute
5	Morten Tony	Hansen	FORCE
6	Sandra	Hayes	NEF
7	Wilfried	Pichler	HFA
8	Monika	Steiner	HFA
9	Filippo	Vivarelli	ETA
10	Adrienn	Csekő	Geonardo
11	Maria	Habicht	ISE
12	Athanasasios	Balafoutis	AUA
13	Stamatia	Voulgaraki	AUA
14	Malgorzata	Bastian	Baltic Energy Conservation Agency
15	Peter-Paul	Schouwenberg	Essent
16	Ger	Ostermeijer	Peterson
17	Wijnand	Schonewille	Port of Rotterdam
18	Tjipke	Hoekstra	Control Union
19	Xander	van Tilburg	ECN
20	Marcel	Gorris	Port of Amsterdam
21	Eddy	Francot	Nuon
22	Willem	Kloosterman	Nuon
23	F	van de Paauw	Broflame
24	Nico	Leek	Probos
25	Tjasa	Bole	ECN
26	Paul	Wouda	Electrabel
27	Didier	Marchal	CRA
28	Frank	Rens	Van Hall Larenstein College
29	Martin	Mulder	Van Hall Larenstein College
30	Minouche	Klaver	GF Energy B.V.
31	Marc	Vitria	Oxbow Coal BV
32	Bas	Verkerk	Control Union
33	Chris	Peltz	GUSCO Handel
34	Mindaugas	Karalius	MK LAIVYBA UAB
35	Martijn	Sinke	Capgemini Nederland B.V.
36	Rickard	Dreimanis	Mitsubishi Corporation Stockholm
37	Arne	Spliet	The Clean Energy Company B.V
38	Michael	Gudera	GEE Energy GmbH & Co. KG
39	Mi-Rong	Wu	TU Delft
40	Alper	Elmas	First Bioenergy AB
41	Henrik	Lundberg	First Bioenergy AB
42	Paul	Hendrix	Eneco
43	Ruth	Timmermans	Essent
44	Christine	de Mulder	goalXport