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The aim of the PELLETS@LAS project is to contribute to the development of a transparent European pellets market through the creation of a European Pellet Atlas, mainly through a web-based information platform on important fuel pellet market data, such as produced and available quantities and qualities and regularly updated regional sales prices ([www.pelletsatlas.info](http://www.pelletsatlas.info)). In this paper, the first results are presented, including \*) a geographical overview of wood pellet plants in Europe, \*) wood pellet production, production capacity and the consumption in developed markets in Europe 2007, \*) pellet end user prices in 17 European countries, \*) prices for large volumes delivered to Rotterdam harbor, and \*) a description of the developing market(s) for mixed biomass pellets (MBP) in several European countries. From the first results, it is demonstrated that pellet markets in Europe are heterogeneous (end-consumer prices can differ over a factor of two) and in general, pellet trade flows are not transparent. With the public dissemination of wood pellet production, consumption and especially price data through the PELLETS@LAS project, we expect that this situation will improve greatly.

**Background to Pellets@las**

Pellets from biomass resources have the potential for a major to several European energy policy tasks, such as security of supply and CO<sub>2</sub> mitigation. The markets for fuel pellets are currently largely-bilateral and highly volatile. Thus, the main barrier for market expansions is the lack of information which affects all market sectors. Also due to strongly increasing oil prices over 2007, pellet prices are expected to increase again, although but no meaningful statistics are currently available regarding pellet production trade, consumption and pellet qualities. Furthermore, pellets markets across Europe are characterized by heterogeneous development stages

**Overview of Pellets@las project after 18 months activity**

The general aim of Pellets@las is to develop and promote transparency on the European fuel pellets market. This is done to facilitate pellets trade and to remove market barriers, mainly information gaps but also local supply bottlenecks, production surpluses and uncertainties in quality assurance management.

**Pellets@las Objectives**

The project ([www.pelletsatlas.info](http://www.pelletsatlas.info); EIE/06/020), co-ordinated by WIP Renewable Energies (Germany), is supported by the European Commission und the Intelligent Energy – Europe programme. The aim of the project is to contribute to the development of a transparent European pellets market through the creation of a European Pellet Atlas. The core of the action is a data and information collection in all EU 27+2 countries (plus Norway and Switzerland) countries from wood and mixed biomass pellet (MBP) producers, traders and consumers. For the data collection a consistent methodology was elaborated. Data is collected by all project partners, who and the involvement of major stakeholder such as pellets associations as well as pellets producers, traders and consumers. The data are updated every three months, and will include different prices (bulk, big bags, and small bags) for the different member countries, available qualities and quantities, the locations of stakeholders as well as a detailed description of logistics systems. Moreover the pellet imports from outside the EU are assessed. In order to support the utilization of MBP pre-feasibility studies on MBP production, logistics and consumption will be elaborated in four European countries (Poland, Slovak Republic, Greece and Germany). The gained data is disseminated via the internet platform containing graphic interfaces and thus functioning as a pellets atlas. Further dissemination channels include regular newsletters, a final seminar and brochure, several telephone hotlines, conferences and press work.



Fig. 1: The logo of the pellets@las project

### Pellets@las Work Programme and Outcomes

The Pellets@las work programme is divided into four phases. In the first phase there was the development for a fitting and scientific methodology, which will be the base for the following phase the data collections on European wood and mixed biomass pellets markets and case studies on mixed biomass pellets utilisation. In the third phase there are assessments of national and international pellet markets. In the last phase there are dissemination and communication activities.

The core of the Pellets@las Project is data and information collection in all EU 27+2 (plus Switzerland and Norway) countries from wood and mixed biomass pellet producers, traders and consumers. Therefore

- A web-based information platform on important fuel pellet market data, such as produced and available quantities and qualities and regularly up-dated regional sales prices ([www.pelletsatlas.info](http://www.pelletsatlas.info))
- Recording and evaluation of the acceptance and implementation of European quality standards
- A database on logistic management from which a pellets transportation chain model will be derived.
- Four case studies for mixed biomass pellet (MBP) utilisation in Poland, Slovakia, Greece and Germany
- A handbook in five European languages (English, French, Italian, Polish, Danish) on the general use of pellets
- Six workshops (in UK, France, The Netherlands, Poland, Greece and Hungary) in order to promote the energetic utilisation of pellets

### The Pellets@las methodology

The methodology for work package two in the pellets@las project needs to describe, how data can be collected and saved for an analysis and being depicted.

On one hand the data can be collected wherever information could be found, e.g. in the internet or at publications of universities or associations. Therefore always the source, where the information was found has to be added. On the other hand the pellet market is a new market in most of the European 27+2 countries, that means that only few information can be found. There is a need to do several queries at the pellet actors in the pellets@las project. The collected figures shall be saved in an excel database.

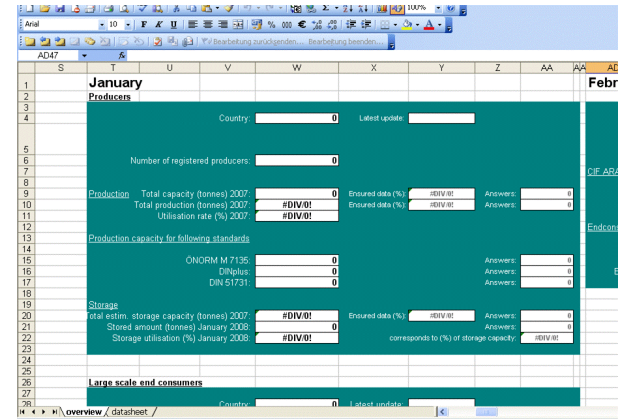


Fig. 2: Overview sheet in the pellets@las data base

Collected data consists of the following items:

The *contact data*, the *business operating area*, that means whether the actor is a producer, trader, retailer or a large scale end consumer, data for **production** e.g. the production capacity, data about the **storage**, data for **sales**, e.g. Total sales (tonnes), loose to small consumers (< 3000 tonnes), bags (< 25kg to small scale consumers), large scale consumers, etc., data for **purchases** and harbour prices like the CIF ARA (Cost, insurance and Freight, delivered to the Amsterdam.Rotterdam.Antwerp region) price. The methodology for the mixed biomass pellets bases on the same scheme.

### Pellets@las results (examples)

First results for 2005-2007 have been published on the projects website [www.pelletsatlas.info](http://www.pelletsatlas.info). They mainly include production volumes, consumption volumes, and biomass prices. Currently, the first three data collections for the months July 2007 until March 2008 have been completed. Key results include detailed analysis of pellet production, consumption and trade volumes, as detailed insights in pellet prices for most EU countries with significant pellet markets. Preliminary results are available regarding pellet imports from outside the EU, pellet logistics and a first assessment of mixed biomass production and use.

Furthermore, the preliminary project results illustrate that the development stages of wood pellets markets in Europe differ largely. In some countries, wood pellets are predominantly used for small-scale heating, while others use pellets for co-firing in large-scale electricity plants. While for some countries the development of a market structure is still required, in countries with more sophisticated markets effective international trade mechanisms is currently promoted. In both situations, the provision of detailed pellet market data, such as current prices, available quantities and qualities to all pellet actors in Europe will contribute largely to overcome market barriers. The permanent availability of such information within a pellets atlas will lower trade obstacles, support

market participation and finally increase the energetic utilization of pellets. Moreover, it will contribute to the implementation of future European legislation in the heat sector which according to the Commission's Biomass Action Plan is currently hindered by lack of market confidence and transparency rather than costs. We therefore emphasise the relevance of this project for both market parties and policy makers.

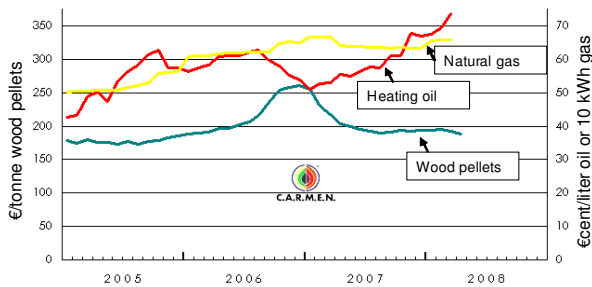


Fig. 3: pellet price (green) in comparison to the oil price (red) in Germany. (Source: CARMEN eV)

In the figure 3 one can see the different heating costs shown in a comparison of wood pellets (green), heating oil (red) and natural gas (yellow) in Germany. The wood pellets are highly competitive. But due to different VAT and market prices of the pellets, this is different in each of the EU countries.

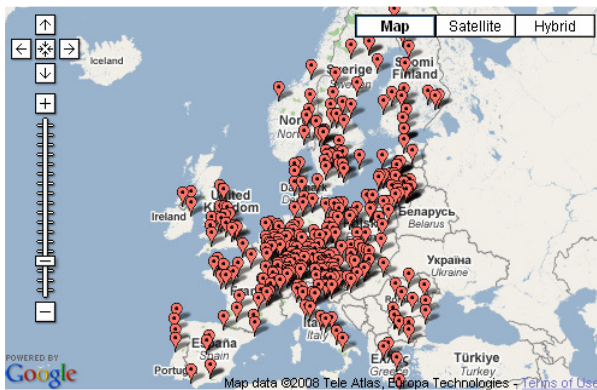


Fig. 4: Geographical overview of all European pellet production plants currently included in the Pellets@las database

In figure 4, a geographical overview is presented of all European pellet production plants currently included in the Pellets@las database. For many plants, also the production capacity is known, though this data is not yet available for all plants included. Pellet producers also have the opportunity to add, correct or update plant data through the Pellets@las website.

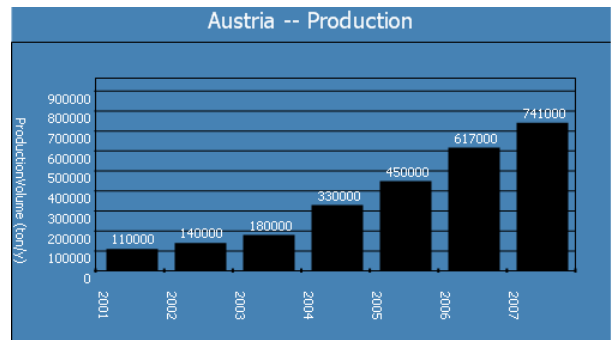


Fig. 5 : Annual pellet production volumes in Austria

Next to pellet production plants, the Pellets@las website offers information on national production capacity and actual produced quantities and wood pellet prices to end-consumers in each EU country, and alternatively delivered to the ARA region. In figure 5, as an illustration, the annual Austrian pellet production volumes from 2001 to 2007 are shown.

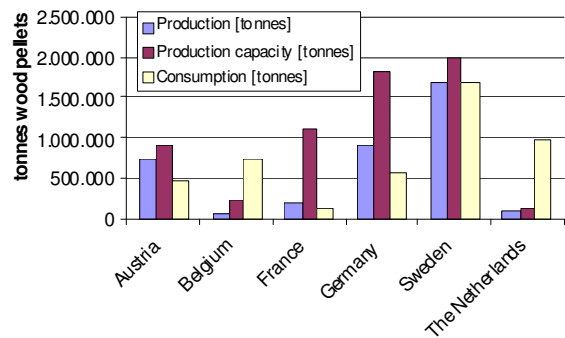


Fig. 6: Comparison of the wood pellet production, the, production capacity and the consumption in developed markets in Europe 2007

As shown in Fig. 6 there are high developed wood pellet markets in Europe. Beside the shown examples Italy and Denmark have to be mentioned. Beside the high developed wood pellet market more and more countries take part in this market, with the result of having about 8.000.000 tones production wood pellets capacity in the EU 27+2 (Beginning of 2008).

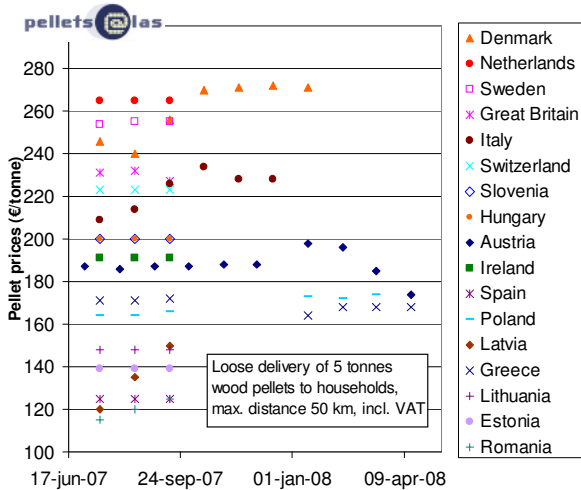


Fig. 7: Overview of wood pellet prices for residential use between July 2007 and April 2008 for 17 EU countries

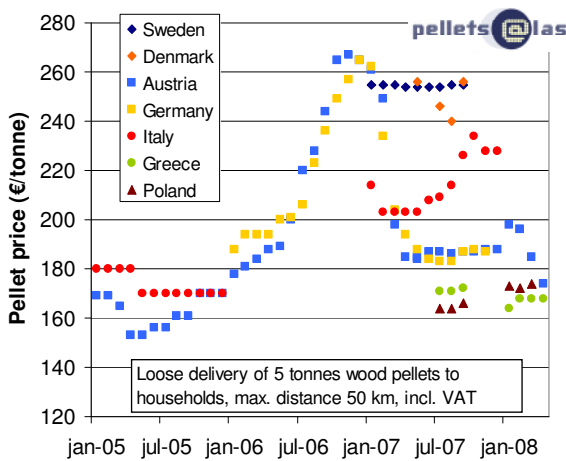


Fig. 8: Price trends of wood pellets in selected European countries

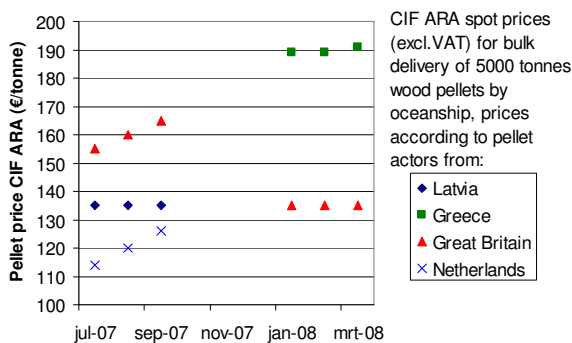


Fig. 9: CIF-ARA prices as reported by different pellet actors in Europe

Figure 7 shows the wide range of pellet prices delivered to households found over Europe. At the time of writing (May 2008), for 17 European countries, price data had been collected at least for the period of July - September 2007, for some countries also data was available until March 2008.

It is the expectation that over the coming months, this data will also become available. Figure 4 indicates that for some countries (Latvia, Denmark and Italy), pellet prices had increased in the fall of 2007, while basically all other countries displayed stable prices. The figure shows also that clearly prices in Sweden, Denmark and the Netherlands are the highest, followed by Great Britain and Italy (all net importing countries). On the lower end, the Baltic states and Romania are situated, which largely export pellets. It is quite stunning to see that price differences of over a factor of two are currently occurring within Europe. While these prices are including VAT (which may vary between 5-25% in the different countries and should ideally be subtracted for a direct comparison), it is clear that pellet markets so far are regional influenced by supply and demand.

The geographical dependency of prices is also illustrated by figure 8, in which the pellet prices delivered loose to households are compared for a number of EU countries over the time frame 2005-2008. Unfortunately, only for a few countries, longer time series were available. The most remarkable time period is July 2006 until July 2007, in which pellet prices in Italy (not shown), Austria and Germany increased strongly until January 2007. This was caused by the sale of several hundred thousand pellet stoves for residential heating. The anticipated fuel demand for these stoves caused prices to soar, and pellet imports from Austria and Germany occurred. However, as the winter of 06/07 was rather mild, pellet prices strongly declined again, returning to previous levels. It is noteworthy that the prices in Germany and Austria were strongly influenced by the peak in demand in Italy during the winter of 06/07, while prices in Denmark and Sweden (at high price levels anyway) were probably not or barely influenced. In addition, it seems that prices in Italy increased again in the autumn of 2007, but this time, Austrian and German prices remained stable.

Finally, figure 9 shows the CIF –ARA (cost, insurance and freight for pellets delivered to the Amsterdam/ Rotterdam or Antwerp region) spot price (physical delivery two months later) as estimated by pellet actors in various European countries. First of all, while the Rotterdam harbour is deemed to be one of the most important pellet hubs in Europe, it is clear that only in few countries, actors were able to indicate CIF ARA prices. Also, the numbers here are often only based on a limited number of sources. It is obvious that the estimated prices range also range quite significantly, indicating that current industrial pellet markets are not transparent, illustrating once again the necessity of a European pellet atlas.



**Mixed biomass pellets data collection**

As mixed biomass pellets (MBP) are a newcomer on the pellet market, as national quality standards for MBP do not exist (reference only on CEN standards) and as they will hardly be used in domestic small scale applications, trade and market structures for MBP will differ from wood pellets. For most European countries a market for MBP simply does not exist. Activities are mainly happening on bilateral agreements between producer and consumer. In order to give an outline of the small existing MBP market, and to give new markets the opportunity to create transparent market structures right from the beginning of their development, the Pellets@las project will continue to monitor production volumes and prices of this emerging market.

The first phase of the project focused on the development of a model for collecting comprehensive data on the market of wood pellets. The model was discussed, analyzed, tested and improved during the actual process of data collection with wood pellets. Based on first experiences of the wood data collection, the work on the methodology of data collection for MBP was started. MBP differ from wood pellets in many respects – they can be produced from grains, various types of grass, leguminous plants, flowers, fruit and a mixture of these materials (with some wood added). The markets of MBP producers vary to a large extent. The model of data collection developed for wood pellet was modified and adapted to suit the nature of MBP, which is more complicated due to the variety of raw materials used for their production. Below, first results of the MBP data collection are presented.

Small markets for MBP are present in Germany, Poland and the UK. In Germany, there are only about five producers of Mixed Biomass pellets. The used raw material mainly is straw. The total production capacity is about 8000 tonnes. The actual production however is only about a tenth of it. In Poland, a clear incentive to produce MBP is the available surplus of straw, which averages 15 million tonnes per year. Some wood pellet producers switch to straw pellets production from time to time, but the produced quantities does not exceed 1000 tonnes per year. Summing up, the market is developing and unstable. The interest from the manufacturer's side is increasing due to legal incentives, aiming at popularisation of RES and biomass use.

The MBP market in the UK is very small, comparable to Poland and Germany. There are two straw pellet manufacturers in production.

In Austria a MBP market does not exist. There are many discussions and projects about the use of MBP but there is no industrial producer for MBP.

Nonetheless some heating system manufacturers offer special boilers for agro-pellets already but have to store them until the legal requirements are specified or sell it abroad.

Bigger markets can be found in Slovakia, the Czech Republic, the Netherlands and France. The situation on the market in Slovakia changes very quickly. It is expected that the demand for pellets will rise from 1000 t/annually to 50-100 000 tonnes in next 5-10 years, and it seems impossible to satisfy these needs without increasing the scale of agri-pellets production.

In the Czech Republic one company is the holder of the patent for the production of bio-fuel in the form of pellets made from non-wooden agricultural by-products. Due to low production costs this biofuel became very attractive and the company now awarded the production license to as much as ten other legal entities around the country. Altogether, several thousands tonnes of this biofuel are presently estimated to be produced by these manufacturers.

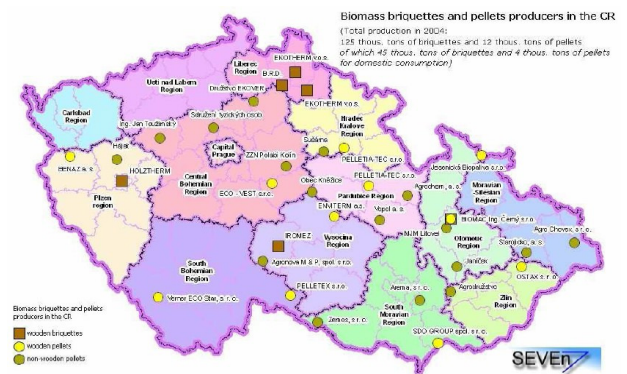


Fig. 10 Biomass briquettes/pellets producers in CR

In the Netherlands about 15.000 tonnes of soja husks in pelletised form were bought from the Dutch agro industry in the years 2006 and 2007. For the year 2008 there will be the use of MBP of coffee husks, directly imported from Brazil. A power producing company expects to have 250.000 tons of these MBP used in 2013. It partly replaces coal. In France there are at least eight producers of MBP. The exact figures are not known so far.

**DISCUSSION**

A major part of the Pellets@las project was the development of a methodology to collect pellet production and consumption volumes, pellet prices, and trade flows, and subsequently to collect these data. This has proven to be a challenge because of several reasons:

- Pellet logistic chains and end-users vary strongly from country to country. Also, existing definitions of national pellet prices may vary in terms of quantities and distances delivered, including or excluding VAT etc. In the Pellets@las project, a common definition was used to make inter-European comparisons possible.

- Given the sensitive nature of pellet prices, pellet actors can be reluctant to provide data. As an extra incentive, actors providing data to the Pellets@las project have exclusive access to the latest two months of data collected.
- Data availability differs between countries. Countries with well-established wood pellets markets and wood pellets associations such as Sweden and Austria have extensive data series on production volumes and prices. However, in most EU countries, data availability is low, and time series on pellet prices
- Identifying and quantifying international wood pellet trade streams is problematic. For example, the same (physical) amount of wood pellets may be traded several times by different pellet actors, which may lead to double counting. For example, the Netherlands are a large-scale industrial pellet consumer. However, several traders are also active in the Netherlands, which not only import, but also re-export pellets. Especially if not all market transactions are known, this may lead to misleading results.

All in all the market for MBP is small but developing. Factors that hamper the market development are still present. These factors could be a result of legal aspects or technical aspects for the heating-systems like the emissions NO<sub>x</sub>, dust or aspects of the combustion efficiency, the corrosion, the ash melting points etc. Beside these technical aspects a development of logistic systems for the production of agro-pellets is necessary, too. But with a development of the oil price like in the last years, the alternative markets will become stronger and stronger.

#### CONCLUSION AND OUTLOOK

As was shown in the previous sections, pellet markets differ from country to country, pellet prices for end-consumers can vary over a factor of two in different European countries, and in general, pellet trade flows are not transparent. With the public dissemination of wood pellet production, consumption and especially price data, we expect that this situation will improve greatly.

As mentioned before, the Pellets@las will continue until the end of 2009, and several additional outputs will be produced until the end of the project:

- Four case studies for mixed biomass pellet (MBP) utilisation in Poland, Slovakia, Greece and Germany
- Data for the Eastern European markets (Russia, Belarus and Ukraine) is currently being collected, and will be included in the Pellets@las project
- A database on logistic management from which a pellets transportation chain model will be derived, including examples of typical wood pellet logistic chains, their cost structure and their energy balance.

- A handbook in five European languages (English, French, Italian, Polish, Danish) on the general use of pellets
- Six workshops (in UK, France, The Netherlands, Poland, Greece and Hungary) in order to promote the energetic utilisation of pellets. Of these workshops, the next one will be held on June 17th in Utrecht, the Netherlands. For more information, contact Martin Junginger.

#### Legal framework concerning biomass market in Poland.

Polish legal framework doesn't have any specific regulations for solid biomass.

The main laws dealing with solid biomass and energy production are:

##### **1. Energy Law**, dated 10 April 1997

- States that RES have to be taken into consideration at the planning stage in communes and enterprises.
- Obliges energetic companies to connect RES to the grid / heating system, and to buy the energy / heat produced.
- Constitutes green certificates (for electricity – max 240 zl/MWh), and red certificates (CHP – max 117 zl/MWh for small plants < 1MW)

##### **2. Regulation issued by the Ministry of Economy and Work concerning the duty of energy and heat from RES purchases**, dated 9 December 2004.

The duty is fulfilled if the percentage of energy coming from RES constitutes at least the following amount of the total annual energy sales of the company:

- |                 |                        |
|-----------------|------------------------|
| • 3,1 % in 2005 | • <b>5,4 % in 2008</b> |
| • 3,6 % in 2006 | • 7 % in 2009          |
| • 4,3 % in 2007 | • 9 % in 2010-2014     |

The Strategy for RES development planned that RES will represent 7,5% in 2010 and 20% in 2020 of total energy production.

#### EMISSION LIMITS

No legal regulations for installations < 1 MW (non-obligatory Polish Standard PN-EN 303-5).

For installations ≥ 1 MW a regulation issued by Ministry of Environment on 4th August 2003 exists.

Moreover, **Voivodeship Funds for Environmental Protection** offers subsidies for thermo-modernization of public buildings (schools, hospital) and **Communal Funds for Environmental Protection** offers subsidies if one wants to install a biomass stove (subsidy constitutes 20-30% of the whole investment cost).

**Polish pellets market in 2007.**

We have produced 350 000 tonnes of pellets in 2007, 83% of this volume has been exported, and the remaining 17% has been consumed on the national market. Roughly 35 000 tonnes is burned in small installations (20kW) for single family houses; we assume that there are 5000 of them. 15 000 tonnes is burned in industrial and public installations, which have the power output of 50 ÷ 200 kW. About 10 000 tonnes of poorer quality pellets go to big boiler rooms and CHP.

The opportunities for market development are large, however distribution network development is a necessity. So far national producers concentrated their efforts on western markets and they've significantly neglected the national market. Few of big and well known producers have already identified this mistake and are working on creation of own distribution networks.

The production in 2007 has risen by 25% although the winter was warm, and there were some temporary problems with sales.

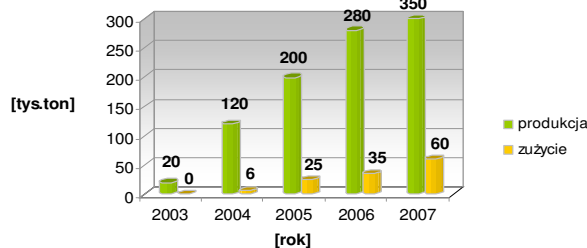


Fig. 1. Polish market development

Current localisation of major Polish producers is presented on the figure below.



Fig.2. Map of Polish producers

Pellets seem to be attractive not only due to environmental protection issues, but also due to their prices. Figure below shows the prices of heat unit coming from different energy sources, and one can easily notice how favourable pellets are.

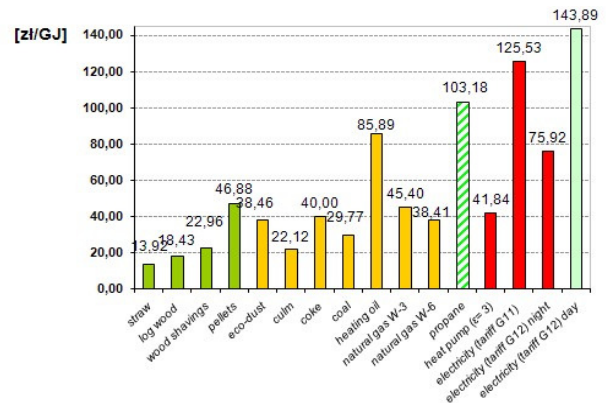


Fig. 6. Heat prices comparison [zł/GJ]

Conclusions:

- Dynamic growth in pellets production and consumption continues
- Pellets prices are attractive, when compared with other fuels
- Quantity of installations increases due to good quality of boilers produced and improved pellets distribution

**The Italian Pellet market: future steps**

Even if the Italian market increased constantly in last ten years, it is still very far from its maturity. The actors of pellet market are facing a crossroads: -they can choose if to increase their quality standards, the transparency of the market reaching stability or if to confirm the bad feelings of the European actors, becoming a market characterized by speculations. In fact after the problems of "availability" and "extremely high cost" of pellets during the winter 2005/2006, the trust of users was drastically reduced.

Today, the Italian production of pellets has reached the quote of around 550.000 t/y, while the consumption overpass the 700.000 t/y. (Data source: Elaboration of ETA Renewable Energies). The gap between these two data is covered by importation of pellets from bordered countries.

AIEL (Associazione Italiana Energie Agriforestali) is working for the diffusion of quality standards among the market actors. AIEL recently presented higher market data compared to what above mentioned, but one consideration can be surely made: -"Italy can be considered a big European producer and user of wooden pellet (in addition to their leading position as pellets stoves producers)".



Our personal idea is that the best solutions for the Italian market can be given by:

1. The diffusion of quality standards (AIEL since the year 2006 has created a “label” for the production of high quality pellet, named “Pellet Gold”). It is based on the Normative *CEN/TS 14961*, *DINplus*, *ÖNORM M 7135* and on limits introduced by the Pellet Fuel Institute (PFI). The main obstacle for the diffusion of this label is given by the extremely high number of pellet producers in Italy (around 70 producers). The biggest ones are located in the northern part of Italy, where the 70% of pellet is produced. In this area the number of “Pellet Gold” producers is increasing and surely positive effects will be evident for the market actors.
2. The clear identification of the final cost of pellet. Pellet is a biofuel and the main data to show to final users should be the profitability. The parameters of “€/kWh” should be clearly listed on the label of every pellet bag (25 kg), in order to present the economic benefits of using biofuels. The analysis of final cost of pellets is one of the main scopes of Pellets@las project.

The stabilization of the market in general (quality of the product and final cost), could facilitate a governmental support to this sector and also increase the trust of final users.

A positive answer to these problems could be given by future agreements between “pellet producers” and “heating system producers”. New agreements between these two actors are foreseen for next years, with the scope to increase the market share of biofuels in Italy.

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Polish pellets@las workshop (24 June 2008)

### Pellets@las Workshop in Poland

Another Pellets@las Workshop turned into success. We managed to gather in one place 31 significant actors from the Polish pellets market and involve them into fruitful discussion. There were major pellets producers and traders, manufacturers, potential investors and many others present.

At the very beginning representatives of Baltic Agency Energy Conservation presented major project results, current situation on the European market and project assumptions. Mrs Grecka presented torrefaction technique, which is hardly known at the national market, but seems a promising and inevitable option for the future.

Mr Wecek from Barlinek SA told about their efforts to create wide and resilient distribution network. Barlinek is well known at the national market for their wooden products, so when they started pellets production it was clear they will become one of the leaders. Now, they actively educate future customers and promote pellets.

Representatives of Finnish company VAPO told about the new service offered by their company in Poland. Apart from pellets production and sales, the company started another activity, called by them “Heat & Power”. This means that VAPO is solely responsible for the realization of investment, they provide funds, equipment, service and fuel-delivering the complete product and earning from heat sales.

Mr Wach from Synergia described his vast experiences with straw as a raw material for pellets production. As straw resources are much more vast than the wooden ones, many investors are now interested in straw processing. It is therefore helpful to make them aware of numerous problems they may face.

Representative of Amandus Kahl told about impressive installations prepared by the company. He presented the film from one of major Polish pellets producers. Also, he told some news about ongoing projects (in Poland and abroad), and about unusual raw materials that may be the biomass source for pelletisation, like for example apple residues, which are in practice unreasonably expensive and therefore will not be used for mass production.

We also had a presentation from OPEC Grudziądz, which is one of the heat suppliers in Pomerania, that started straw pellets production this year for the needs of the heating plant. We heard about the problems faced, like extremely strong position of Polish farmers, who do not want to sign contracts for fuel delivery, making fuel possessing process unstable. Moreover, fuel prices rise continuously.



Mr Krauze was a pioneer on the market. He has started the business many years ago, therefore he has many absorbing stories to tell. He told us for example that currently numerous bakeries change their stoves for pellets-fuelled. He was also the one to underline how significant proper pellets packing are. We have faced problems with poor quality pallets for a long time, and often it was impossible to unload pellets at the customer's place, because their packaging was damaged so badly. These may seem minor issues, which may on the other hand have a huge impact on customer's choices. Potential investors shall be prepared for all kinds of problems.


Finally, two giant actors from boilers suppliers sector – Herz and Kostrzewa presented their products, and described some best practise examples.

Participants seemed to be deeply interested in the topics brought up, they asked numerous questions. Producers discussed the problems they face, everyone present could learn from others. Some business agreements have been drawn up. The conclusion was that there is no point in sending produced pellets abroad, it's high time to develop national market, by promoting the fuel first, not particular brands. Let's see what will happen next.

**Pellets@las Workshop in Netherlands**

Within the framework of the Pellets@las project, on June 17th 2008, a workshop on international pellet trade was held in Utrecht, the Netherlands. The aim of the workshop was to identify current developments, bottlenecks and opportunities for international/global pellet trade. About 50 experts from academia and industry were invited to enable a fruitful debate. 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 could in theory be as high as 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.


The full workshop report and the presentations can be found on the pellets@las website  
<http://www.pelletsatlas.info/cms/site.aspx?p=7202>



**Workshop**  
**24 June 2008**  
**Bydgoszcz**


Target group:  
 Pellets@las project participants

Aim:  
 discussion on the results of the project, sharing experience re. technology and logistics, opportunity to find business partners



Agenda:

1	Current situation on the pellets market	E.Wach, BAPE
2	Principles of cooperation within Intelligent Energy for Europe project – Pellets@las	M.Bastian, BAPE
3	Torrification of biomass. Pellets production from biocoal	K.Grecka, BAPE
4	Logistics at Barlinek S.A. Kielce	R.Węcek
5	Heating plants construction and fuel supply as a part of VAPO Sp. z o.o. Torun activity	M.Oygańska
6	Straw pellets – characteristics of the raw material and processed one	S.Wach, Synergie
7	Amandus Kahl offer in respect of biomass pelletisation	C.Nowotny, Amandus Kahl
8	New production line for straw pellets	M.Tokacz, OPEC Grudziądz
9	Distribution at the local pellets market	T.Krauze, Ecopellets
10	Using stove automatics for better fuel distribution	R.Kolenka, P.P.H. Kostrzewa
11	Practical aspects of biomass fuelled boilers utilisation- on the basis of Herz's experience	G.Ojczyk, Herz



### Weblinks

Pellets@las website: [www.pelletsatlas.info](http://www.pelletsatlas.info)  
Canabio website: [www.canbio.ca](http://www.canbio.ca)  
Pelletsforum website: [www.pelletsforum.de](http://www.pelletsforum.de)  
Pellets Fuel Institute website: [www.pelletheat.org](http://www.pelletheat.org)

### Events

**20<sup>th</sup>-22<sup>th</sup> July 2008-07-03**

**Pellets Fuel Institute Annual Conference Atlanta, GA (USA)**

<http://www.pelletheat.org/pdf/08confProgram.pdf>

**16<sup>th</sup> -17<sup>th</sup> September 2008-07-03**

**Bioenergy Developing Trends and New Opportunities for a changing Forest Industry Halifax, (NS) (Canada).**

This two day Bioenergy conference and tour Sept 16-17, 2008 will focus on forest industry trends and opportunities, and challenges for the developing Bioenergy industry in eastern Canada.

It will be held in conjunction with the major active forestry equipment show in the Halifax area, DEMO International@ 2008 which follows the conference Sept. 18-20

CANBIO invites people from the forest and Bioenergy industries and from federal, provincial and municipal governments to participate in this important Bioenergy conference and field tour

<http://www.canbio.ca/documents/Halifax08.pdf>

**29<sup>th</sup>-31<sup>th</sup> October 2008**

**8<sup>th</sup> Pellet Industry Forum Stuttgart, (Germany).**

Players in the pellets sector will meet at the Pellets Industry Forum, from October 28<sup>th</sup> to 29<sup>th</sup>, 2008. The Pellets Industry Forum will take place for the seventh time.

This conference will feature in-depth presentations by experts, detailing the current developments in the growing pellets market. Over the last few years, the Pellets Industry Forum has developed into a central meeting point for the wood pellets industry. The congress is primarily aimed at experts and decision makers from industry, research and politics. Over 400 delegates are expected to attend the conference.

<http://www.pellets2007.de/fileadmin/Holzenergieforum/Kongress/Programm/IFP07-Kongressprogr-engl.pdf>

**6<sup>th</sup>-8<sup>th</sup> October 2008-07-03**

**CAN BIO Annual Bio energy Conference & Trade Show Ottawa, ON (Canada).**

The largest Bioenergy event in central Canada, this conference, run by Canada's national, Bioenergy industry association, is the premier event to network, develop new projects and do business.

Over 230 delegates from Canada, the U.S. and Europe are expected to attend this year's event. By sponsoring the event, we'll make sure your company stands out. Sponsors receive free entry to the conference, wide corporate advertising and more.

<http://www.canbio.ca/documents/ottawa08agenda2.pdf>

**25<sup>th</sup>-26<sup>th</sup> February 2009**

**European Pellet Conference Wels (Austria).**

The European Pellet Conference 2009 is held as a part of the World Sustainable Energy Days which offer a number of other high-profile events:

- the "Energiesparmesse", a trade show dedicated to renewable energy sources and energy efficiency with about 100,000 visitors. Around 100 companies will present their pellet related products and services there.
- site-visits (24 February)
- the "Energy Efficiency Watch" Conference
- the conference "Efficient Cooling of Buildings"
- other events

The conference is organised by O.Ö. Energiesparverband, the regional energy agency of Upper Austria, dedicated to sustainable energy market development. Upper Austria is an ideal location for such a conference.

The region is home to

a number of Europe's leading biomass boiler producers, and pellet heating systems have become a standard solution.

<http://www.wsed.at/>