

Welcome to the last edition of the Pellets@las Newsletter - You are receiving this newsletter because you either subscribed for it on the website of the European Pellet Centre or expressed your interest at some of the events organised by the project or its partners.

Content:

1. News from the Pelletsatlas Project
 - Editorial
 - The Pellets@las Project
 - Visit the Pellets@las Website
 - International Pellets@las Workshop
 - Pellet Market Country Reports: Belgium, Denmark, Finland, Sweden, Estonia, Latvia, Lithuania, Norway, Slovenia, Spain, Portugal, Luxembourg
2. EU Policy News
 - Sustainability Criteria for biomass
 - Current status on European pellet standards
 - CEN/TC 383: Standardization for Sustainable production of biomass for energy
 - Renewable Heating and Cooling Energy Technology Platform
3. Publications
4. Events
 - 18th European Biomass Conference and Exhibition
 - Pellets@las Workshop in Poland
 - Biomass Diary 2010

News from the Pelletsatlas Project

Editorial: The pellets@las project

The pellets@las project is co-financed by the EU under the Intelligent Energy Europe Programme. Activities started in January 2007 and coming to an end of December 2009.

The core of the project is to survey the European pellet market. Data has now been collected to carry out the survey of the market, by sending questionnaires to a large number of pellet market stakeholders and through close cooperation with national pellet and biomass industry associations. A comprehensive market data set including prices, produced / consumed volumes, production capacities and market actors is now available in databases on the pellets@las website (www.pelletsatlas.info).

The big picture - To get an overview of the overall development of the European pellet market, you should

read our final report on pellet production, trade and consumption which summarizes all the data collected, see below for an excerpt:

The wood pellet market is booming in Europe; the EU 2020 target for renewable energy, i.e. 20% in gross energy consumption (GEC), is a predominant driver.

In 2008, approximately 640 pellet plants produced about 8 million tonnes of pellets in 30 European countries. Imports from North America amounted to over a million tonnes. 95% of the produced and imported pellets were consumed in EU 27 (representing a 0.1% share of the Gross Energy Consumption). For 2009 imports in Europe are estimated with about 3.4 million tonnes, of which about 50% is EU intra trade. Total export is estimated with 2.7 million tonnes, mainly intra trade. While some large markets, such as Germany and Austria, are largely self-sufficient, other markets depend on the import of wood pellets, like the Netherlands, Belgium, and

Denmark. Rotterdam is a major hub for imported pellets, St Petersburg and Riga for pellet export. Bulk pellets for power production show higher price fluctuations, compared to those for district heating. Different price ranges observed in 2006 and 2007 for residential heating in individual countries moved towards the same range in 2008, leading to the assumption, that the national demand for pellets in Eastern and South European countries starts growing.

International pellet trade volumes are quickly growing. Drivers and barriers for further development are described in an analysis of the global pellet market. Especially market developments in Russia, Belarus and Ukraine will have significant impacts on future EU pellet markets and were analyzed separately: More than 650000 tons of pellets were produced in Russia in 2008. It can be expected that more than 850000 (and even up to 1000000) tons of pellets were produced in 2009. The production capacity of pellet plants was more than 1290000 tons in 2008. In 2009, the capacity is estimated to be more than 1700000 tons per year. With around 60000 tons of pellets produced annually (capacity 200000 tons), the Belarusian pellet industry is comparably small. In Ukraine, more pellets are produced (up to 200000 tons in 2009). Ukraine is also a significant producer of pellets from agricultural raw materials. In general, production capacities are increasing rapidly in all three countries.

A general development observed in most European countries is the increasing competition for raw materials. The broadening of the raw material base for pellet production is one of the solutions discussed. However, it can also be observed that the large potential of agricultural residues is not utilised and the sector is developing very slowly even if the economic viability of e.g. straw pellet production was shown in several feasibility studies. Technical problems during combustion are found to be the main barrier to increased MBP (mixed biomass pellets) production. The pellets@las report on MBP markets provides more details.

2010 will be another exciting year for the European pellet industry. The introduction of European standards and certification schemes for pellets, the discussion on the sustainability of solid biomass fuels and the further, dynamic development of the global pellet market in general will impact the industry. Stay tuned and update yourself at www.pelletsatlas.info!

By: Wolfgang Hiegl, WIP Renewable Energies

Visit the Pelletsatlas Website

During the autumn 2009 the website has been updated with new reports, presentations and a new boiler change calculation tool. A new pellet market database, search facility and administration module has also been developed and is now online on the pelletsatlas website.

The map and the graphs in the database are new combining previous maps in one map. Using the web interface you can search our database and find pellet market actors throughout Europe as well as pellet prices, consumption and production in most European countries.



Get registered! The new database allows market actors to register directly and to administer company data independently. This is your chance to join the 2000+ pellet companies already registered and to make business contacts worldwide. Pellet market actors can create an account and have the power to edit their own appearance in the map. Partners in the project have the power to add and edit of data and information. A new user guide explains how this works.

Know your market Use the pellets@las database to get access to detailed market data on all European pellet markets. You will find information about end-consumer prices, CIF prices, and produced and traded volumes. You can also consult our [country reports](#) and read about the story behind the data. Short summaries of some of the reports are presented in this newsletter.

Feedback Any feedback or questions concerning the site are welcome.

Email: mth@force.dk

Website: www.pelletsatlas.info

International Pellets@las Workshop

The Pelletsatlas project's International Workshop took place on November 18th 2009, in Brussels, in the Renewable Energy House. The workshop was a **full day event** providing **in-depth information on the latest EU market trends** it was attended by over 60 participants from policymakers to technology providers, to pellet producers and buyers. Market Data of the **EU 27 +2** (Switzerland, Norway) was presented on **wood and mixed biomass pellets including the current prices**, available quantities and qualities to all pellet actors in Europe. Dana Dutianu, European Commission opened the day entitled *"Development and promotion of a transparent European Pellets Market: Creation of a European real-time Pellets Atlas."* Of particular interest were the presentations on pellets standardization, pellets trading, and the issue of sustainability criteria for solid biomass. An industry roundtable concluded the day giving participants the opportunity to debate the future developments of the European pellet markets and pose questions to the key industry stakeholders.

The main conclusions of the project were presented in the morning session of the day with **Wolfgang Heigl, WIP Munich**, and project coordinator of the pellets@las project giving an introduction to the various work carried out within the project and the outlook for follow up of the project. The aim of this project was to promote transparency for the European pellet market (EU27+2) by collecting and providing information on producers, traders, consumers, prices & volumes and international trade. It also did data analysis, by describing situation in all European countries, show the big picture for Europe, the

investment and trade opportunities, updating on recent developments: policies, pellet quality, and identifying



problematic issues and recommending solutions. The outlook of the project is industrial pellet price indices are being developed now and data collection initiatives in numerous countries are underway. There is an ENplus certification; data provision, cooperation with national associations,

setup of EU associations, DG TREN Market observatory and a database with market actors has being created. The presentations of the day are now available to download on the pelletsatlas homepage www.pelletsatlas.info and the EUBIA website at <http://www.eubia.org/395.0.html>.

For further details on the workshop email: eibhilin.manning@eubia.org.

Pellet Market Country reports

*The findings of the Pelletsatlas project are presented in a number of **country reports**. In the previous edition of the pelletsatlas newsletter, a summary of 17 countries was presented. In this edition a synopsis of the remaining countries are given. The full reports are published and available to download on the pelletsatlas website. The country reports give a full account of all national pellet markets in Europe including background information that allows understanding past developments and forecasting future opportunities.*

Belgium

Belgium is considered as developed pellet market and is characterized by a large demand for industrial pellets for (co-)firing in power production, a young pellet production industry with limited production and a fast developing market for residential pellet heating.

Domestic pellet production in Belgium currently cannot satisfy the demand. The largest part of the industrial pellets used is imported, mainly from Germany. In Belgium 10 pellets producers are operating. It is estimated that around 325.000 tons of pellets were produced by the 10 producers in 2008 with the production capacity reaching 450.000 tons. On the other hand the consumption of pellets during the same year was 920.000 tons, mainly in industrial sector for power production. In order to meet the demand Belgium



imported 595.000 tons of pellets, mainly from Germany and Canada. Electrabel (as well as Dutch Essent Trading) signed a three year contract with Plantation Energy Australia (PEA) who will supply pellets worth \$ 48 million. The establishment of long-term delivery contracts or utilities building the whole supply chain will be the way to increase supply security for the utilities.

The Green Certificate Scheme in Belgium contributed to stimulating the demand for solid biofuels, including pellets, for electricity generation by (co)combustion, Electrabel (GDF Suez) being the major consumer of industrial wood pellets in Belgium. In 2005, Electrabel retrofitted two old coal power plants for firing pellets instead of coal. The power plant in Rodenhuize (near Gent) generates electricity from coal and wood pellets (25 %). In Les Awirs (near Liège) 100 % pellets are fired. The demand for industrial pellets for these plants and other smaller consumers is estimated at 800,000 tons in 2008. Electrabel states that they alone will use 1 million tons in 2009 and this amount shall be increased to 3 million tons by 2014.

The consumption of high quality pellets for household heating does play a certain role in Belgium. In 2008, private consumption in Wallonia is estimated at 40.000 tons (ValBiom). The total consumption in the residential sector in Belgium might have been around 120.000 tons. Federal tax reductions and a grant system in Wallonia promote the development of this sector which was insignificant in 2006 and grew strongly, especially in 2008. Further growth can be expected especially in the pellet stove sector during the following years.

Denmark

Denmark is one of the world's largest wood pellet markets, especially in per capital pellets consumption is significant this amount with 193,4 kg pellets per habitant. Wood pellets are being used in all sizes of combustion plants: Small boilers in single family houses, small block heating centrals, medium sized district heating plants and large power plants producing power and heat for large district heating systems.

In 2008 the total wood pellet consumption in Denmark was around 1 million tonnes. This very high level is due to the fact that more than half of the residential heat demand is supplied via district heating.

Pellet production in Denmark is to a large extent based on dry wood residues from the numerous wood processing industries. The last year the national production capacity of around 135.000 tons was able to cover 12,5 % of the national demand. The production capacity in Denmark reach 313.000 tons per year and currently 12 companies produce pellets in Denmark. The production decreased a bit for endogenous reasons between 2006 and 2008, with

an average growth around -0,5 %. Today Denmark has become the largest pellet importing country in Europe, with 926.000 tons of pellets imported for the same year, see figure 1.

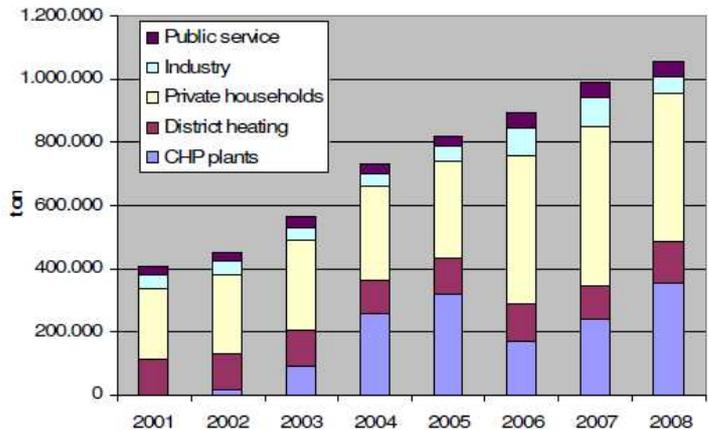


Figure 1: Pellets market evolution from 2001 up to 2008 in Denmark by different consumption sector (source: pellets@las website)

The framework conditions for electricity production based on renewables in Denmark is given by a feed-in tariff system, the implementation of the EU scheme for greenhouse gas emission allowance trading which has regulated CO₂ emissions from January 2005 and a liberalized electricity market. Further the Biomass Agreement from 1993 sets a framework for use of biomass in large scale power plants. The present large scale consumption level of approx. 0.35 million tonnes is expected to increase steeply in the coming years. This is based on the increased biomass obligation (extra 700.000 tonnes) for the power companies to meet Denmark's current need to reduce significantly the CO₂-emission. It is also expected the demand in the residential sector to be increased during the following years due to the increasing fossil fuels prices. The expected growth in the Danish wood pellet market will be probably covered mainly via imported fuel.

Estonia

The total area of Estonia without Lake Peipsi is 4,37 million ha and 50,6 % of this area is covered by forests. The biggest forest owner is the state with 0,8 million ha. About half of the state owned forests and around one third of the private forests is softwood which is a high quality raw material for the pellet industry.

Estonia is considered as an emerging pellet market. The pellets production in 2008 was around 338.000 tons with the production capacity for the same year being at 485.000 tons. In Estonia the domestic demand remained

insignificant in 2007, about 16.000 tons of which 15.000 tons were used in heat production. The majority of produced pellets is being exported. In 2008, around 340.000 tons of produced pellets and briquettes were exported mainly to Denmark and Sweden. The number of pellets producers is 6, most of them located close to the capital, for logistic facilitations.

Cheap labour and especially low energy costs in Estonia (but also generally good conditions for investments and low taxes) gave them good starting positions for entering the pellet market at the end of 1990's.

The production capacity estimated that will be increased in next years, as the raw materials have limited prices and also due to the short distance with Russia.

Until 2040 is estimated that the logging capacity will be 13,1 million m³ per year but the real logging has been 5,31 million m³ in 2006 and 6,9 million m³ (1,55 million m³ for heating and 1,1 million m³ waste) which means that about half of the annual increment is not used.

National bioenergy market policies in Estonia

Estonian targets on sustainable energy management are:

- 20 % of the electricity produced in CHP (cogeneration) for 2020;
- 5.1 % of energy by 2010 from RES;
- 25 % of energy produced from renewable sources for 2020;
- Improving transport sector to use more biofuels.

The incentives for renewable technologies aren't very encouraging for investments in Estonia, with feed-in tariffs paid for 7 -12 years but not beyond 2015.

Finland

Finland is one of the most important countries in EU in terms of bioenergy and pellet production. Wood has been an important source of energy in Finland for centuries. Today about 90 % of the land area is covered by forests. The share of wood in total energy consumption is about 21 % in Finland. The Finnish pellet market started as an export market and today about 75 % of the pellet production is exported. After EU regulations in the RES directive, Finland is targeting a 38,5 % share of RES in final consumption.

There are around 19 plants with capacities from 2,500 (Punkaharju) up to 70.000 (Turenki owned by Biowatti Oy) tons per year. Total production was about 375.000 tons in 2008, with the total production capacity going to 680.000

tons for the same year. About 75 % of the produced pellets are still exported but the trend is changing rapidly. Exportation to power plants in Sweden, the Netherlands and Denmark are relevant. In 2008, the total amount of pellets that exported was around 224.000 tons. Today, Finland is the 3rd largest wood importer in the world. This process has many drivers and one of the latest is the availability of cheap Russian raw wood after the collapse of the Russian wood industry in the mid-1990s. About 78 % (in 2006) of the raw wood import to Finland is coming from Russia.

The domestic consumption is rising, especially the small scale consumption (<25 kW boilers). The Finnish domestic pellet market has developed more towards small scale consumption. The main reason for that is that the process has been fast and the large scale facilities need more time to scale up industrial pellet consumption. On the other hand the small scale consumption is the main target group of the national pellet promotion. The total pellets consumption in 2008 was 149.000 tons for the small scale and medium scale heat applications and the consumption per capital was 28,3 kg. The size of pellets manufactured in Finland is usually 8 mm in diameter and 10 – 30 mm in length. The moisture content is low, 7 – 12 %. The ash content is also low, about 0,5 %. The bulk density of pellets ranges from 650 – 700 kg/m³. The net calorific value of pellets ranges from 4,7 – 5,0 kWh/kg (16,9 – 18 MJ/kg). Hence, the energy content of pellets is 3.000 – 3.300 kWh/loose m³, which is equal to 300 – 330 liters of light fuel oil. One ton of pellets takes about 1,5 m³ of storage space and is equal to 470 – 500 liters of light fuel oil. When exposed to water, the wood pellets get damp, swell and disintegrate. The pellets stand poorly direct moisture [Alakangas & Paju 2002].

Latvia

About 32% of Latvian territory is covered by forests. The economical and social conditions are very similar to Estonia, with a low labour costs and facilitation from the logistic point of view (availability of cheap raw material from bordered countries, etc).

Latvia is leading in using renewable energy in their energy mix. The biggest share of renewables is used in the household sector (73.8 % of consumption) as shown in Figure 2.

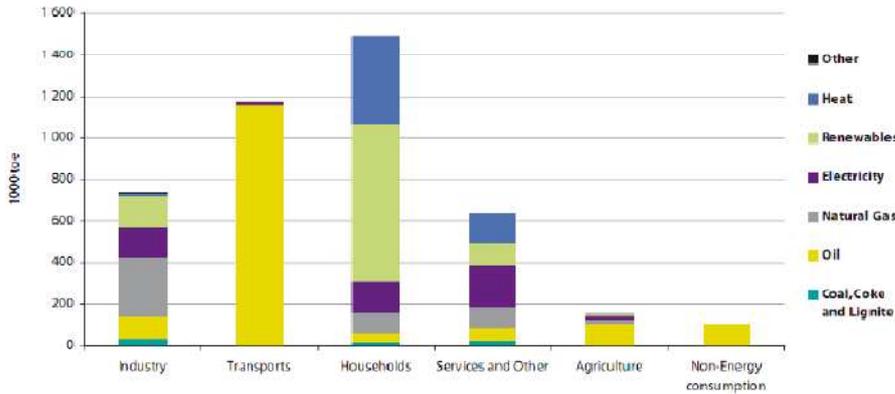


Figure 2: Final energy production by sector and fuel
 (source: pellets@las website)

Lower prizes and good quality raw material caused the wood industry to focus on imported resources. This also applies to a number of pellet producers that are combining industrial by-products, wood waste, forest residues and timber.

The number of pellets producers are 15 while, the National production reached the level of 379.000 tons during 2008. The production capacity is around 743.600 tons, due to recent investments in pellets production sector. During the next years Latvia is going to become more and more important in European market as their equipment has a very high potential not utilized at the moment. The consumption level is starting to increase and an amount of 39.000 tons was consumed last year. If the calculation per capita is considered, Latvia has already a reasonable internal consumption with 17,19 kg per habitant, compared to other countries, but if total numbers are taken in consideration, the internal market can still increase as most of the production is destined to exportation.

The main support scheme in Latvia is quota obligation system (since 2002) combined with feed-in tariffs. Frequent policy changes and the short duration of guaranteed feed-in tariffs have resulted in high investment uncertainty. The main policy instrument was reformed in 2007, maintaining the basic structure of the scheme. At national level there are yearly quotas and a mandatory purchase framework is set up for RES-E (combined with tendering for wind). The quantity of RES-E sold under the scheme is limited. A quota system (without TGC) typically defines small RES-E amounts to be installed.

Lithuania

Lithuania is the largest of the Baltic countries and considered as a new pellet market because the bioenergy products are not internationally extensively traded. Less

raw materials are imported and the share of firewood export was 3,5 % of the total consumption in 2003 (most of the export is industrial round wood). Exports go to Scandinavian countries, Germany and UK.

One of the problematic issues for developing the pellet market is the lack of raw material. The annual increment of forests is about 6,4 million m³. The round wood production was 6,2 million m³ in 2007 higher than in Estonia with twice the annual increment. It has reached the maximum level but inhibits the build-up of additional resources. Wood pellets

as a by-product depend on the whole sector.

The number of producers is 6 (before they were 7 but one has stopped its production), located more or less around Vilnius, capital of Lithuania. A limited internal consumption is known, as 20.000 tons per years are used. The per capital utilization of pellet is 5,94 kg per habitant. The production is around 120.000 tons per year and is destined to exportation. The production capacity is around 150.000 tons per year, close to the actual production. The amount of pellets being exported in 2008 was 100.000 tons.

The main support scheme in Lithuania is feed-in tariffs combined with a purchase obligation. Relatively high fixed feed-in tariffs for hydro (< 10 MW), wind, biomass, guaranteed for 10 years. Closure of the Ignalina nuclear plant which currently supplies the largest share of electricity in Lithuania will strongly affect electricity prices and thus the competitiveness of renewables as well as the support for renewables.

Luxemburg

Similar to the German market the consumption of wood pellets in Luxemburg is limited to residential heating. Customers use automated pellet appliances for central heating purposes so that pellets are mainly delivered in bulk by blower lorries. The trade with bagged pellets is of minor importance. With around 10 kg of wood pellets consumed per capita and year, the development of the market is also comparable to Germany. The total annual consumption in Luxemburg is around 5.000 tonnes.

However, on the other hand, no domestic pellet producers were identified. This means that all pellets consumed are imported. Around 50 % of the pellets consumed are imported by traders based in Luxemburg, while the other 50 % are directly delivered to the end-consumers by traders/producers operating in Germany or Belgium.

Norway

The Norwegian wood pellet market is very limited considering the amounts of forest in the country. The reason is that Norway has based the electricity production on hydropower and that Norway is also self-sufficient with oil and gas from the North Sea. The Norwegian launch pad for the use of wood pellets is formed by a large share of hydropower based electricity, widespread use of electrical space heating and finally, self sufficiency with oil and gas. Cheap electricity and the lack of water based heating system in three fourths of the residential sector form barriers for a strong development of a pellet market for heating and abundant hydropower has made thermal power plants irrelevant. More than 95 % of the electricity consumed is generated by hydro power plants. The rest is to a large extent imported from Denmark and Sweden.

Wood pellet production in Norway is based on residues from wood processing industries. Both dry residues such as shavings and wet residues from saw mills are used in the various factories. Eight companies produced wood pellets in 2008 and had an annual production capacity of more than 164.000 tons. While the production in 2008 was around 35.000 tons. At the same time this limited production reflects the market, otherwise main actors would act differently. Wood pellet production in Norway is based on residues from wood processing industries. Both dry residues such as shavings and wet residues from saw mills are used in the various factories. On the other hand, annually are used around 40.000 tons of wood pellets Norway and the per capital use is 8,52 kg per habitant. Pellets in Norway are used solely for heating purposes in pellet stoves and in a few district heating systems. During the last year 4.700 tons of pellets were imported.

In Norway pellets are mainly traded in small bags which are delivered to the consumer or collected by the consumer himself or for the larger consumers in bulk delivered by tipping lorries or blower lorries. Table 1 shows the volumes divided by different supply type. From 2010, Norway can be expected to become a large exporter of wood pellets as the production capacity is currently increasing. Especially a mega-size plant with an annual capacity of 450.000 tons will change the current picture.

	2004	2005	2006	2007	2008
Small bags	9573	15675	33128	23356	17025
Big bags	2312	3235	5335	3999	2484
Bulk	15736	17425	20871	20187	28082

Table 1: Amount of pellets delivered by different supply type in Norwegian market from 2004 until 2008 (source: pellets@las website)

The Norwegian policy is a general climate and renewable energy policy that has effects on the bioenergy market and specifically the pellet market by setting up a framework for the applications and systems which use wood pellets. The climate change targets in Norway are apart from becoming carbon-neutral to reduce the annual greenhouse gas emissions by 15 to 17 million tons of CO₂ equivalents by 2020, including the carbon taken up in forests. The government has proposed an increase of 14 TWh (50 PJ) in the use of bioenergy by 2020 which is a doubling of the current consumption.

Portugal

The pellet market in Portugal is in an initial stage, since it is not well structured. It lacks national consumption and almost all the produced pellets are exported. This market started developing around 2005 and since then, a large number of entrepreneurs and investor companies got involved. This market is still far from being mature, but it must be noticed that pellet production will promises good business opportunities during the next years.

Pellets production during 2008 was 100.000 tons and the production capacity was increased greatly from few thousand tons to around 400.000 tons for the same year, as 3 big plants just started their construction and they will start their production during 2009. The growth rate of production in last years was impressive, 200 % in 2007 respect to previous year, especially if we consider the production capacity. The production is not related to an internal national market because the national consumption in 2008 was around 10.000 tons, even though the sold stoves and boilers fuelled with pellets was increased. The number of pellets producers that are currently working today are 6, while the journal "Bioenergy International" listed on its last pellets map a list of 11 producers, some of these production plants are still under construction.

As previously mentioned the national market in Portugal is very small and lacks an established distribution network. Over 90 % of the produced pellets are exported. The main target countries are Northern European countries. Basing on total statistics, the amount of export

is around 90.000 tons. From this fact it can be

foreseen that wood pellets export will be important also in the near future.

Quality of Portuguese pellets is divided into 2 classes:

- Industrial pellets: made from low quality residues, adapt for big power plants;
- Pellets for residential scopes: the DINplus standards is the most diffuse between Portuguese producers.

At the moment it seems that market development is hampered by two factors: the first one is the lack of an internal consumption, and the second one is the shortage of raw material. Portugal does not have a big quantity of agricultural residues, especially in areas where pellet producers are currently concentrated around the cities of Lisbon and Porto.

No specific financial promotion schemes for pellet (or biomass) heating were identified. In general, there is a lack of knowledge among the population and even if firing pellets is already much more convenient than other fossil fuels because of its cheaper price, although the internal consumption is very low. Another reason is that the country has mild climate conditions, so for these reasons, a fast increase of domestic pellet demand in Portugal is not foreseen soon.

Slovenia

Slovenia is one of the most densely forested countries in Europe. More than a half of its territory (1.169.196 ha) are covered with forests (forestation amounts to 57,7 %). Dominant forest types are beech, fir-beech and beech-oak, which have a relatively high production capacity.

Biomass has been used mostly for heating and small-scale electricity production but we have found large-scale users substituting charcoal in power plants. However, pellets face significant competition in Slovenia as firewood and wood chips have been commonly used energy sources for a long time.

Today the production reaches 154.000 tons per year, a limited production that fits very well with the internal consumption which is 112.000 tons and with the exportation quota which is 42.000 tons and the production capacity is around 185.000 tons annually. The pellet production plants in Slovenia amount to 5 plants and the consumption per capita is 55,37 kg per inhabitant. These major pellet producers rely on exports to the Italian market, for their surplus quota, as they produce according to Italian standards/certifications and are close to the border.

Trbovlje and in Sostanj two power plants, are starting to use low quality pellets for combustion with coal, occasionally. In Slovenia, a well organized online trading platform has been working for years already and this positive instrument must be underlined (<http://res.borzen.si/DesktopDefault.aspx>).

Several Slovenian policy initiatives address the use of RES:

- “Resolution on the Strategy of Energy Use and Supply of Slovenia” – February 1996, long-term objective to substantially increase the share of renewable sources within the primary energy balance;
- “The Energy Act” - September 1999, places special emphasis on the promotion of the use of renewable energy resources and gives priority to the utilisation of renewable resources before the energy from non-renewable resources;
- The Resolution on the National Energy Programme, National Assembly (ReNEP) - May 2004, The ReNEP proposes financial support of € 7,3 million per year for implementing the programme in the field of woody biomass, while the proposal for the yearly budget intended for efficient energy use and RES amounts to € 58,3 million per year.

Moreover, for the period 2007 – 2013 Operational Programmes have been launched, approved by the European Commission:

http://www.svlr.gov.si/en/main_gosp_areas_of_work/eu_cohesion_policy_department/.

Slovenia has a great potential regarding woody biomass resulting from the abundance of forestland. As forests are abundant and thus wood is available in large amounts it seems like wood pellets will become competitive in the near future. Furthermore, national legislation and operative programs initiated by the state are in place to promote further market development.

Spain

The Spanish pellets market is quite new, since it started only in 2005, it lacks domestic consumption and almost the entire production is exported.

After the results of the European project “propellets” in 2005 the Spanish pellets market started developing, that led to the creation of three new plants with a production capacity of approximately 30.000 tons per year. The growth rate of the production in the last two years is impressive, approximately 300 % in 2007 as compared to the previous year and 70 % in 2008 as it is shown in Figure 3. The trend of production capacity is similar, with a growth of 200 % in 2007 and 270 % in 2008 with a capacity of 250.000 tons and probably these numbers will continue to rise in the next years, as new pellet production plants are appearing in many regions.

This emerging production capacity did not result in an explosion of the national consumption so far. On the contrary this figure was very low, as only 10.000 tons were consumed in 2008 all over Spain. This quantity

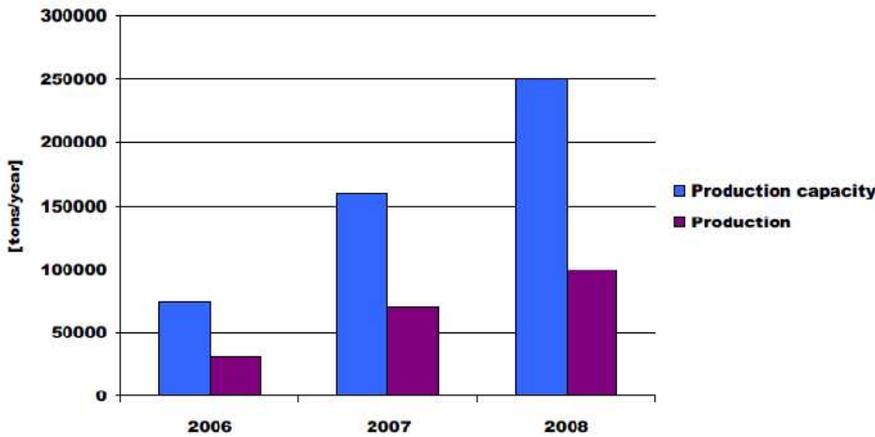


Figure 3: Production capacity and annual production in Spain between 2006 and 2008 (source: ETA Florence)

represents around 10 % of the total annual production; the obvious consequence is that Spain exports large quantities of pellets (around 95 %). The main countries to whom wood pellets are exported are Portugal, Ireland, United Kingdom, Italy and France. The pellets price is lower than the average prices in Europe and this fact facilitated the development of the business. The magazine "Bioenergy International" declares that 17 production plants are operative, but at least six of them are still in a start up phase. Pellet consumption in Spain is almost negligible (10.000 tons in 2008) compared to other European countries where the market is fully developed. It is mainly developed in small scale, with pellets used as fuel for small heating plants. The quality of Spanish pellets is generally good, but only one large company with an international certification (DINplus) was identified. The market is formed by small and medium scale boilers with an average nominal power of 25-35 MW.

There are no national incentives for pellets use in Spain, but Regional Governments, through their energy branches or energy agencies, provide various support:

- Funding of installations, typically 20-30% of the eligible costs;
- Besides, in several regions there are other forms of financial helps as specific soft loans for companies, taxes reduction in the investment for companies in the "Companies Tax";
- The National Energy Agency (IDAE) provides variable incentives every year to renewable energies;
- Some Energy Services Companies (ESCOs)

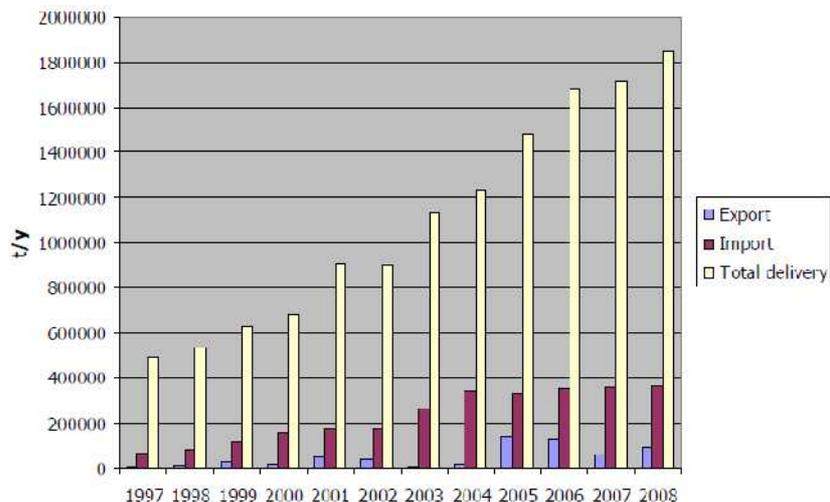
provide credits for investments. Comparing these data, it must be noticed that the pellet scenarios in Spain are positive.

Sweden

The Swedish wood pellet market is one of the world's largest and especially in relation to the number of inhabitants the consumption of wood pellets is significant. Pellet production has been running in Sweden since 1982 and is to a large extent based on residues from the numerous wood processing industries.

In 2008 the total wood pellet consumption in Sweden was around 1,85 million tonnes and the pellets consumption per capital was around 202 kg per habitant which is the highest in Europe. The production is to a large extent based on residues from the numerous sawmills and wood processing industries and the production facilities are close to the feed stock generating industries. For the same year the total pellets production was 1,405 million tonnes with an average growth -2 % between 2006 and 2008, from almost 95 different sites with a total capacity of 2,2 million tons. However the vast majority is produced by one third of these (33 producers). Main raw materials used for wood pellet production are sawdust, shavings, wood chips and other forestry by-products. Apart from being a large manufacturing country, Sweden also is a large wood pellet importing country. For the last year, Sweden has imported around 445.000 tons. The pellets are imported from Canada, Poland, Finland and the Baltic Countries.

Figure 4: Pellets evolution in Sweden for import, export and total delivery from 1997 up to 2008 (source: pellets@las website)



Some Swedish manufacturers also export pellets (Figure 4). Up to 150.000 tons have been exported during the last years with the majority being shipped to Denmark and to the United Kingdom.

Strong drivers provide for wood pellets being used in all sizes of combustion plants from small boilers in single family houses and small heating centrals for multi-unit dwellings, public service buildings and industry over medium sized district heating plants up to large power plants producing power and heat for large district heating systems.

Large scale consumption of pellets takes place in large district heating plants and CHP plants. These plants have gradually reduced their consumption of fossil fuels during the 1970-90'es due to energy taxes on fossil fuels. Many

district heating plants switched from combustion of oil to coal, and after the introduction of the CO₂ emission tax in 1991, they are now switching from coal to biofuels, such as pellets.

Being a very well developed pellet market, all types of transportation modes and delivery types are in place. The Swedish wood pellet market will grow significantly in the years to come both on the consumption side and the production side. The demand in the residential sector can be expected to increase due to high fossil fuel prices and high fossil fuel energy taxes. The pellet industry predicts a 50.000 tons increase for the next years.

EU Policy News

Sustainability Criteria for Biomass

Under the new Renewables Directive for the promotion of energy from renewable sources (2009/28/EC) the Commission should, by December 2009, publish a report on sustainability criteria of solid biomass. EUBIA has learned that the Commission's report has been postponed until end of January presumably to coincide with the new Commissioner for energy entering office. According to the latest drafts seen by EUBIA, the European Commission were set to propose nonbinding sustainability criteria for solid and gaseous biomass used for both heat and electricity generation. On the 15th December, The Consortium of European Biomass Associations (AEBIOM and EUBIA), European Forestry associations (EUSTAFOR, CEPF and NSF) and European Biogas Association (EBA) issued a joint press release supporting non-binding criteria on sustainability for solid and gaseous biomass for heat and electricity. The nonbinding measures that are on the table at the moment, if proposed, would provide adequate guarantee for sustainability of biomass. Non additional burdens to the current challenge of adequate biomass mobilization are needed. Furthermore the associations argue that non-binding measures would provide 'adequate' guarantees for sustainability of biomass. The industry fears additional burdens could detract from its current challenge of increasing (renewable) biomass use. It further notes that only around a quarter of biomass used for energy comes from dedicated biomass from agriculture and forestry. Agricultural and forestry by-products as well as

residues from other economic activities constitute the bulk source. The biomass industry is already bound by extensive forestry and environmental legislation.

Another concern for the biomass industry is the exclusion of small-scale producers and users from any new sustainability criteria. This should, according to the industry, be set for those with thermal or electrical capacity of lower than one MW. The argument given is that monitoring would be very costly and difficult to implement. For further information contact: eibhilin.manning@eubia.org and view the press release on www.eubia.org.

CEN/TC 383: European Committee of Standardization for Sustainable production of biomass for energy

The CEN/TC 383 for sustainably produced biomass for energy applications was established in February 2008. The Cen/TC 383 held its fifth plenary meeting on the 11th to 13th November 2009 at the Shell Offices, the Hague, the Netherlands. Specifically on the relationship with the European Commission and the Renewable Energy Directive, the European Commission has requested CEN/TC 383 to work on standards in their working groups. The main request is on the implementation by economic operators of the mass balance chain of custody and on auditing and voluntary schemes under the RES directive as far as biofuels are concerned. The aim of this work would be to refer to these standards in the communication on the practical implementation of the sustainability scheme that the Commission is requested to draft according to the Renewable Energy Directive by December 2009. The European Commission tabled the fact that the EC needed to clarify some matters further in order to lead CEN towards better legal interpretation of its role that should best be done via the

EC's Communication on implementing a sustainability scheme for biofuels, which is now planned for the first Quarter of 2010. The Communication would clarify matters such as massbalance and peatland. In addition, the EC had realised that the exemption(s) on biodiverse grassland needed to be further developed, which the Commission expected to be finalised around September 2010 (with a draft available around June 2010). Regarding the reference in the Communication, the timing would be difficult but manageable, and depending on the decisions of the TC. The Commission envisage referencing the CEN standards number in the Communication. On the approval of voluntary schemes he foresaw a role for the CEN standards, even as the most likely option, which would also be expressed as such in the Communication. For further information on the CEN TC/383 work contact eibhilin.manning@eubia.org

Renewable Heating and Cooling Platform

The Secretariat of the Renewable Heating and Cooling Technology Platform are proud to announce that the First Annual Conference of the European Technology Platform on Renewable Heating and Cooling will be held under the auspices of the Spanish Presidency with the joint support of both the Spanish Ministry of Science and Innovation and the Basque Energy Board (EVE). The event that is organized in close collaboration with the Spanish Association of Renewable Energy Producers (APPA) will take place on 23 - 24 February 2010 in Bilbao, Spain. Find more information about the venue, programme, special hotel prices, etc. online at <http://www.rhc-platform.org/cms/index.php?id=56>. All registered stakeholders of the platform are invited to attend this major event. The online registration will be ready soon and the detailed program of the General Assembly will be published in January 2010. Find attached the official invitation. Please also forward the invitation to your business partners working in RHC – this important event is not to be missed!

Official registration to the RHC platform- It is now possible to officially register to the platform (see <http://www.rhc-platform.org/cms/index.php?id=12>) by sending the application form to the secretariat. It is important for the Platform to receive a signed application form in order to prove that the results of the platform were

endorsed by a large basis of stakeholders. The official members will have access to the member's area of the website (and therewith the complete contact details of all registered members) and be able to attend the first annual meeting (the registration to the meeting can be done electronically through the website).

In case you are not a registered member of this platform yet, please download the membership form and join today! Participation in the platform is free of charge and on a voluntary basis. For more information and updates on the ongoing work of the platform, visit the platform website below. www.rhc-platform.org

Publications

- IEA Bioenergy News, Vol 21(2) – Dec. 2009
<http://www.ieabioenergy.com/LibItem.aspx?id=6487>
- IEA: Better Use of Biomass for Energy (Dec. 2009)

<http://www.ieabioenergy.com/LibItem.aspx?id=6476>

- IEA - Main Report: Bioenergy – a sustainable and reliable energy source. A review of status and prospects (Dec. 2009)

<http://www.ieabioenergy.com/LibItem.aspx?id=6479>

<http://www.ieabioenergy.com/LibItem.aspx?id=6479>



Events

18th European Biomass Conference and Exhibition

The 18th European Biomass Conference & Exhibition will be held from 3 - 7 May 2010 at the Cité Internationale - Centre de Congrès, in Lyon, France. You are member of the global Biomass Community and you are highly welcome to participate in this largest specialist biomass event in Europe in 2010.

The Conference and Exhibition offer a unique platform to present innovative results and ideas to Biomass specialists and decision makers from all continents. The topics for which we are inviting you to submit your contribution are based on the experiences of successful previous European Biomass Conferences.

News for Authors - You will find detailed information on the Conference topics and submission of abstracts in the **Call for Papers**, which can be downloaded from: <http://www.conference-biomass.com/Submit-an-Abstract.414.0.html>. Authors interested in presenting a

paper are welcome to submit their abstract by **15 January 2010**.

Citability of Papers: all submitted final papers of plenary, oral and visual presentations will be published online and coded by a digital identifier (DOI code) provided by the German National Library of Science and Technology. This guarantees an unequivocal and permanent identification and citability of all papers of the Conference Proceedings.

Peer Review: a selected number of submitted papers will be invited for a Peer Review Process for publication in a renowned scientific journal.

Finally some words about Lyon: The metropolitan city of Lyon is located in the heart of the Rhône-Alpes, south of Paris. Lyon is not only a leading European business traveler's destination but also enjoys a lively cultural and sporting life.

For latest news on the event, please visit the Conference website <http://www.conference-biomass.com>.

Pellets Workshop Poland

POLEKO 2009- International Trade Fair of Environmental Protection was held in Poznań on 24-27 November 2009. It was already 21st edition of the largest show devoted to this sector in Central Eastern Europe. In total, approximately 850 exhibitors presented their innovative offers. They came from 23 countries, also as distant as USA, New Zealand or Japan. 50 seminars, conferences and debates took place during the fairs. This hot offer attracted over 21 000 visitors from Poland and abroad.

Clean Energy showroom has been organised for the ninth time. That is one of the largest national events for renewable energy sources. Major producers of appliances utilising RES have promoted their latest achievements. Many biomass burners were exhibited. These went together with Polish wood pellets.

Apart from the impressive exhibition, attractive seminars and conferences were organised. They covered issues of waste



disposal and recycling, energy efficiency and funding options, but also mixed biomass pellets, torrefaction or discussion of first experiences with biomass co-firing at large CHP plants in Poland.

Mr Wach, as Pellets@las partner, presented the current status of Polish and European pellet markets. Some information from the final project seminar in Brussels were presented too. One may easily observe constantly growing interest in biomass heating options, as well as in fuels derived from biomass processing. For further information contact Malgorzata Bastian, BAPE mbastian@bape.com.pl.

Biomass Events: 2010 Diary

11-13 January 2010

Pacific West Biomass Conference & Expo, Sacramento, California (United States)

<http://www.pacificwest.biomassconference.com/ema/DisplayPage.aspx?pagelD=About>

18-19 January 2010

New Frontiers in Biofuels, New Delhi (India)

This international conference, organized by Delhi Technological University, Delhi, aims to harbor a platform facilitating exchange of ideas and experience among scientists involved in various segments of biofuel research.

<http://www.newfrontiersinbiofuels.org/>

26-27 January 2010

Energy from Biomass and Waste, London (United Kingdom)

The international "Energy from Biomass and Waste UK" (EBW UK) conference and exhibition provides the number one meeting place for this rapidly growing market. This is where vendors, buyers, investors, municipal representatives, legislators and scientists from around the world come together to talk new projects and business.

<http://www.ebw-uk.com/index.htm>

4-7 February 2010

Bioenergy Expo, Verona (Italy)

Bioenergy Expo is the world's most complete and dynamic exhibition on



December 2009

renewable energy from organic sources (biogas, biofuel, biomass). It is taking place in parallel with Fieragricola and is attracting 130,000 professional operators. Bioenergy Expo is composed of: - an indoor exhibition area - an outdoor dynamic show - international conventions - a workshops` arena - a program of technical study tours. The next edition of Bioenergy Expo will also promote sustainable energy from non-agricultural sources.

http://www.bioenergyweb.it/index_en.asp

5 February 2010

ReTECH 2010, Washington USA

Register today for the Conference of the Year in Renewable Energy, RETECH 2010, offering you a thorough update and in-depth education in renewable energy technologies, markets, competition, policy and all of the major government programs.

<http://www.retech2010.org>

23-24 February 2010

Renewable Heating and Cooling Platform, Bilbao, (Spain)

First Annual Conference of the European Technology Platform on Renewable Heating and Cooling, 23-24 February 2010, Bilbao (Spain).

<http://www.rhc-platform.org/cms/index.php?id=3>

3-4 March 2010

European Pellets Conference, Wels (Austria)

The European Pellet Conference in Wels/Austria aims to provide in depth information on pellet technologies, innovation and market trends. It will also offer an exciting platform to discuss new co-operation projects. With more than 600 participants every year, the European Pellet Conferences held in Wels have become the largest annual pellet event in the world.

<http://www.wsed.at/en/programme/european-pellet-conference/>

15 -16 March 2010

BioPower Generation, Amsterdam, (The Netherlands)

Colocated with GreenPower Conference's World Biofuels Markets 2010 event. As utilities strive to meet their 2020 renewable energy targets, biomass power generation is becoming increasingly attractive. The 6th international BioPower Generation Forum will bring together leading market experts to identify the opportunities in expanding the uptake of utility scale power generation from biomass.

<http://www2.greenpowerconferences.co.uk/v8-12/Prospectus/Index.php?sEventCode=BG1003NL>

15-17 March 2010

World Biofuels Markets 2010, Amsterdam (The Netherlands)

World Biofuels Markets is the leading industry networking event where, each year, the leaders of the biofuels world convene to meet new customers, suppliers and partners and help drive innovation and business. Over 4500 high calibre executives from 78 countries have attended WBM to date.

<http://www.worldbiofuelsmarkets.com/>

18-21 March 2010

Bois Energie 2010, Saint-Etienne (France)

<http://www.boisenergie.com/sommaire-en.php3>

19-21 March 2010

Vegetalia, AgroEnergie, Cremona (Italy)

22-23 March 2010

Recycling of Biomass Ashes, Innsbruck (Austria)

An international conference on the use of biomass ashes for closing nutrient cycles shall bring together scientists and practitioners.

22-26 March 2010

EU Sustainable Energy Week, Brussels, Belgium

Join the series of events in Brussels, Belgium: Get ready to spend three exciting days full of activities, workshops, networking events, meetings with over 3000 participants in Brussels. Learn more

13-15 April 2010

EurasiaBio 2010, Moscow (Russia)

The EurasiaBIO Partnering Congress&EXPO is the global event for Biotechnology and Renewable Energy in Russia and CIS countries. The Congress is hosted by the Yu.A. Ovchinnikov Russian Biologists Society. The event offers an unparalleled opportunity for biotechnology, pharmaceutical and energy companies, academic research institutions, and investors from around the world to gather in one place at one time to learn about each other, meet one-on-one, and discuss business opportunities of mutual interest.

<http://www.eurasiabio.org/>

14 April 2010

3rd Stakeholders Plenary Meeting of the European Biofuels Technology Platform, Brussels (Belgium)

<http://www.biofuelstp.eu>

3-7 May 2010

18th European Biomass Conference and Exhibition, Lyon (France)

The Conference will be chaired by Prof. Josef Spitzer, Joanneum Research, Austria, and IEA Bioenergy Executive Committee Chairman. The Technical Programme Coordination will be supported by the Joint Research Centre of the European Commission - JRC. The French national support and all activities of the host country will be coordinated by ADEME, the French Environment and Energy Management Agency.

www.conference-biomass.com

4-6 May 2010

2010 International BIOMASS Conference & Expo, Minneapolis (United States)

<http://www.biomassconference.com/ema/DisplayPage.aspx?pageId=About>

4-6 May 2010

Asian Biofuels Roundtable 2010, New Feedstocks and Technology, Singapore (China)

<http://www.ifat-china.com>

5-6 May 2010

Waste to energy, Bremen (Germany)

'Waste to energy' is all about waste as a resource, biofuels, economical plant operation, and the reduction of greenhouse gas emissions. For the fourth time Europe's leading trade show for energy from waste and biomass opens its doors. The technology showcase in the exhibit hall presents state-of-the art machinery, engineering and services for the generation of power, heat and mobility from waste materials and renewable resources. The conference offers hands-on information on new technologies, strategies for plant optimization, news from the lab, etc.

www.messe-bremen.de

17-18 May 2010

3rd international conference on engineering for waste and biomass valorization, Beijing (China)

The conference will include discussions on the Valorisation of Waste (municipal, industrial, agricultural, electronic, plastics, construction and demolition, etc.) to Energy (ethanol, hydrogen, biogas, biofuel, RDF, pyrolysis products) and useful Materials (raw, secondary and recycled materials). This third issue of the WasteEng Conference will also emphasis on the valorisation of Wastewater for which a special session will be organized.

25-27 May 2010

World Bioenergy 2010, Jönköping (Sweden)

This major global bioenergy get-together is based on the unique "Taking you from Know-How to Show-How" concept, combining conference sessions, field excursions and tradeshow into one comprehensive event. This way academic research and development blends seamlessly with commercial experience providing a better business context. The overall purpose of World Bioenergy is to promote the implementation of bioenergy technologies. Conferences - Excursions - Exhibition - Pre- & Post conference Tours - Match-Making - Side Events.

<http://www.elmia.se/en/World-Bioenergy/>

8-10 June 2010

BioEnergy 2010, Prince George, British Columbia (Canada)

The International BioEnergy Conference and Exhibition is the Canadian leader in the global dialogue on bioenergy.

<http://www.bioenergyconference.org/>

30 June-1 July 2010

AEBIOM European Bioenergy Conference & RENEXPO Bioenergy EUROPE, Brussels (Belgium)

<http://www.renexpo-bioenergy.eu/>

7-8 September 2010

10th Pellets Industry Forum, Stuttgart, Germany

<http://www.pelletsforum.de>

8-10 September 2010

Interpellets 2010, Stuttgart, Germany

<http://www.interpellets.de>

13-14 September 2010

FAME 2010, Berlin (Germany)

<http://www.greenworldconferences.com/fame2010programme.html>

15-19 September 2010

14th International Biotechnology Symposium and Exhibition - Biotechnology for the Sustainability of Human Society, Rimini (Italy)

<http://www.ibs2010.org/>

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