

Wood pellets data collection
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Development and promotion of a transparent European Pellets Market
Creation of a European real-time Pellets Atlas

Final report on producers, traders and consumers of wood pellets

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ABSTRACT

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. The aim of this analysis is to map current European wood pellet markets including demand, supply and prices, as well as a comprehensive overview of different market types for heating and power production. The study focuses on production, trade and consumption of pellets in EU-27, Norway and Switzerland in 2008. Where data is available Russia, Belarus and Ukraine are included.

In 2008, approximately 630 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 the half of it can be assumed as 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 one of the major hubs for imported pellets, St. Petersburg and Riga those for 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 a European pellet market begins to develop.

1. INTRODUCTION

Today, wood pellets are probably the largest traded solid biomass commodity used specifically for energy purposes and in terms of traded volume can be compared to biodiesel or bio-ethanol (Heinimö and Junginger 2009). Wood pellets have relatively favourable conditions for transportation: low moisture content and relatively high energy density (about 17-17.6 GJ_{LHV}/tonne). While handling of wood pellets still requires great care, the advantages over other solid biomass types such as wood chips or agricultural residues are their storability, relatively easy handling and typically lower transport costs for distances larger than 50 to 100 km compared to other solid biomass types such as wood chips.

The growing role of wood pellets as an energy carrier has in many cases been linked to international trade. The first truly long-distance transport of wood pellets was in 1998 from Canada to Sweden. Ever since, the international trade in wood pellets by truck and boats (and to a lesser extent by train) has been growing exponentially. The main rationale behind long-distance trade is abundant availability of cheap feedstock in some world regions, high demand in other (resource-scarce) regions and the presence of cost- and energy-efficient logistics.

In January 2007, the European Commission launched a plan for a more ambitious and integrated policy for Europe in order to tackle the issues of climate change and energy supply. The Spring European Council of March 2007 endorsed the plan and called for, amongst others, the following objectives:

- 20% share of renewables in overall EU energy consumption in 2020
- 20% of reduction in greenhouse gas emissions

These objectives were embedded in a legislative Directive (2009/28/EG; 23 April 2009), which would ensure the equitable participation of all EU member states (Eurostat 2009b). The first objective concerns the share of energy from renewable sources in gross final consumption of energy in 2020, set at 20%. Whereas earlier EU targets were set at the level of energy supply, the current approach focuses on the share of renewables in the final energy consumption. The EU Directive defines three options to reach the '20% renewable goal' in 2020:

- the use of renewable electricity
- the use of renewable energy for heating and cooling
- the use of renewable transportation fuels (e.g. liquid biofuels)

Wood pellets can contribute to the first two options (electricity and heating). In the near future wood pellets could also be used as lignocellulose feedstock for the production of liquid second generation biofuels.

The use of wood pellets (replacing fossil fuels) also leads to the reduction of greenhouse gas emission and therefore also contributes to the second objective of the directive. Sikkema et al (2009) showed that the use of pellets in respectively the Netherlands, Sweden and Italy can result in significant avoided GHG emissions. The largest reduction was shown for pellets substituting coal for power production (about 1900 kg CO₂ eq per tonne pellet), followed by substitution of heating oil for district heating (about 1500 kg) and natural gas for residential heating (about 900 kg). Consequently, an estimated 10 million tonnes of CO₂ eq emissions were avoided in 2006 in the 27 EU countries plus Norway and Switzerland (based on a consumption of 6 million tonnes of wood pellets and substitution of coal and heating oil).

The aim of this analysis is to map the current European wood pellet markets including demand, supply and prices as well as a comprehensive overview of different market types of pellets used for heating and power production. The focus of this market analysis is on the European market for pellet production and use, although the European trade of pellets does also include trade flows from non-European countries.

The report consists of five sections completed by an annex, in which detailed lists of producers, traders and consumers for each of 25¹ EU countries plus Norway and Switzerland can be found. Following this introduction, we briefly present the methodology used for data collection, followed by a description of the input of country data and volumes. We conclude the report with a discussion of wood pellet price developments and an outlook on the continuation of the market monitoring.

¹ In Malta and Cyprus no pellets market exists.

2. METHODOLOGY

The market analysis is based on 30 European countries: 25 EU countries, plus Norway, Switzerland, Russia, Belarus and Ukraine. Both, historic figures and trends, are given, but the main focus is on 2008. Regarding trade preliminary data of 2009 (Eurostat 2009a) are listed.

In section 3, the pellet markets in Europe are investigated regarding production, consumption and international trade of wood pellets. Volume data was collected by the respective Pellets@las project partners once a year for the previous year via national pellets associations, internet or direct contact with companies.

These surveys were organised as follows:

1. The country specific data on wood pellet production in 2008 (see Annex) is merely derived from Pellets@las country reports. In case of incomplete country figures (e.g. Latvia, Lithuania), alternative data was extracted from an extensive survey of Bioenergy International (Ljungblom 2008a) on individual production plant capacities and real production for pellet producing countries. This survey however lacks real production data for some pellet plants. Via the average utilisation rate of all other pellet plants in that country, real production was estimated. A certain inaccuracy results from the fact that there exists no consistent method amongst all producers for specifying the production capacity. While some producers name the 'technical' production capacity (calculated out of possible tonnes/hour for the whole year) others name the 'realistic' production capacity considering reduced working hours, repair times and raw material supply.
2. Wood pellet consumption for 2008 (see Annex) was taken from Pellets@las country reports. Depending on the available information the consumption was either
 - determined via the number of installed pellet boilers and pellet stoves (e.g. AT, CH, DE, IT, HU, ...)
 - estimated by important market actors (e.g. RO, BG, ...)
 - or calculated via formula A (NL, NO, DK, GB, ...), in case import/export data existed:

(formula A)

$$\text{Consumption} = \text{Production} + \text{import} \pm \text{stock changes} - \text{export}$$

Note that possible pellet stock changes are left out of the analysis, due to lack of data on this topic. We assume that stock changes are negligible, although current stocks for power production may be considerable (section 3.4). Also note that minor amounts of wood pellets may also be used as stable bedding for horses, cows etc. It is assumed that those volumes are negligible, and thus 100% use of wood pellet production and trade is for energy purposes.

3. The information on wood pellet trade received directly from the market actors in the course of the Pellets@las project was sometimes not sufficient to allow any interpretation. In this case, if no import/export data for 2008 was available, the figures were calculated via formula A, based on the production 2008 and the estimated consumption 2008 of a country. Apart from that, additional trade data

for 2009, dealing with both intra-EU trade and EU external trade volumes, was derived from Eurostat's database on pellet trade for EU 27 countries (Eurostat 2009a). Since the 1st of January 2009 official export and import figures on pellets are published by Eurostat using the product code (44.01.3020), defined as "sawdust and wood waste and scrap, agglomerated in pellets" (Sikkema 2008). Before that time, only global estimations could be made. Pellet trade in not yet administrated months of 2009 (May-December) are extrapolated according to the registered volumes in Eurostat's database of the months before (January – April). The pellet code has just been incorporated into EU trade statistics and will be further embedded in world trade statistics of World Customs Union not earlier than 2012 (Ala Kihnia 2008).

For a detailed analysis of the market study and price developments, both domestic destinations and export are investigated. Based on that, the following major and minor market demands are defined in section 3:

- bulk pellets for large scale power production
- bulk pellets for medium scale (district) heating
- bulk pellets for small scale (residential) heating
- pellets in bags for small scale (residential) heating
- export markets

As second part of the market analysis, an overview is made on price developments in recent years, based on the major market types per country. Price developments were collected from producers, traders, retailers and/or large scale consumers (see list of acronyms & definitions for further definitions). Since wholesale prices of pellets depend largely on individual agreements between two companies, the focus of the price data inventory was on end-consumer prices.

Data for three different price categories were collected:

- a delivery of 5 tonnes bulk pellets for district or residential markets (in € per tonne, including VAT) and a single maximum transport distance of 50 km
- a purchase of 1 tonne of bagged pellets (15 to 25 kg bags) for residential users (in € per tonne, including VAT) without transportation.
- sales of bulk pellets to large scale consumers (in € per tonne), when delivered and unloaded in Rotterdam (CIF ARA, excluding VAT).

The price data inventory was done by the respective Pellets@las project partners four times a year, respectively monthly, as far as well developed pellets markets were concerned. From the third quarter of 2007 until the third quarter of 2009 pellet prices for 25 European countries plus Norway and Switzerland were investigated. Preferentially, the average of each of these three price types was weighted based on the sold volume according to the following formula B:

(formula B)

$$\text{Average price} = \frac{\text{Priceactor1} * \text{Volume1} + \text{Priceactor2} * \text{Volume2} + \dots + \text{priceActori} * \text{Volumei}}{\sum \text{Volume}}$$

However, the introduction of these enquiries differed from country to country. Whereas some countries already had existing price statistics (e.g. Germany, Sweden, Austria), other countries (mainly export markets) had to start from scratch. Therefore, the continuity of prices may vary because the response rate of the latter countries was quite low in the beginning. In some countries, it was impossible until the end of the project to collect price data due to a lack of cooperation from pellet actors in specific countries (e.g. Czech Republic, Slovakia, ...).

The survey at large scale consumers (power production) is only applied for the Netherlands, although Belgium has substantial market volumes too. Please note that the average weighted prices for these bulk pellets (CIF ARA) were replaced from November 2008 onwards by index prices published by Endex (Veer 2009) based on contracts, made one month ahead of delivery. The Endex pellet prices are compiled by an expert panel of about 10 pellet actors (producers, traders and consumers) and are calculated by the sum of all prices divided by the amount of experts. Two prices (the maximum and minimum price submitted) are left out of this calculation. The price section is completed with export prices (FOB) for major European harbours in Latvia and Russia, derived from expert resources and commercial bulletins.

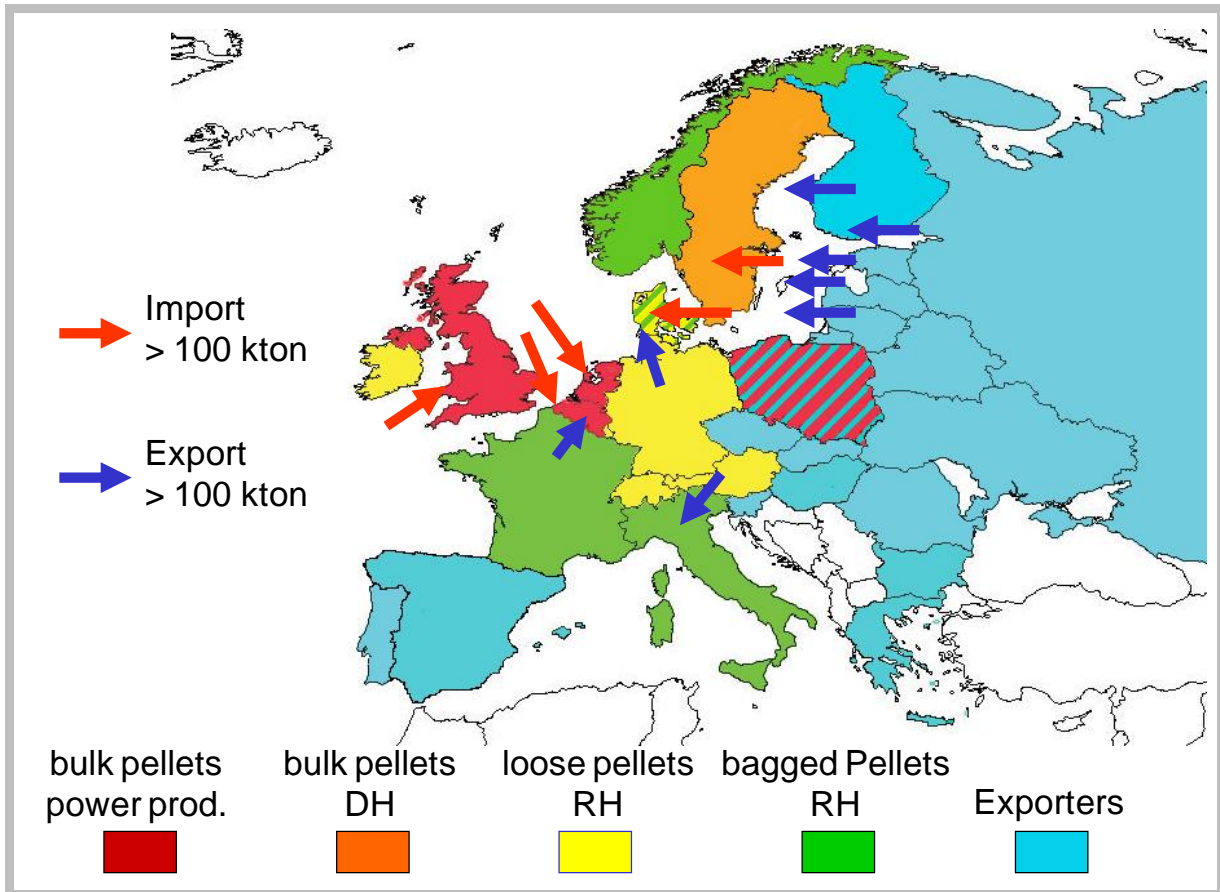
3. NATIONAL MARKETS and PELLET FLOWS

In this report, the following major country market types are defined (see also Figure 3.1):

- Pellet markets that are dominated by the utilization of pellets in large scale power plants. This is the case for Belgium, the Netherlands and Poland. The UK could become another large market for pellets based on current plans for wood pellet replacement at coal fired power plants.
- A second group exists of medium scale consumers using bulk wood pellets for district heating. This is the case especially in Sweden.
- A third group comprises small scale bulk delivery for heating. For example, in Austria and Germany, pellets are predominantly used in residential and, more commercial, industrial boilers for heating.
- A fourth group exists of small residential consumers that use bagged wood pellets in stoves for heating. Stove markets can be distinguished in Italy, France and other southern European countries.
- In addition to these four market types, there is also a number of countries that display a relative low domestic demand for wood pellets, and mainly produce wood pellets for export.

The countries are classified according to the major part of their pellet use. That means that, even if the major use of pellets is the export in one country (blue coloured countries in Figure 3.1), there could as well be a considerable domestic consumption (e.g. Finland). Other countries like e.g. Denmark are especially difficult to classify because there are pellet markets for residential heating as well as for power production and district heating.

Figure 3.1: Overview of European pellet market and main market types per country (2008/2009).
(Source: University Utrecht)



3.1. Aggregated European production

In 2008, approximately 630 pellet plants in Europe produced about 8.2 million tonnes of pellets per year. A large part of these plants, 52%, are small production plants with capacities of less than 30,000 tonnes per annum. The number of plants is continually increasing due to the dynamic market developments (Aebiom 2008). The biggest producers are Sweden and Germany, both producing about 1.4 million tonnes. Most feedstock is purchased from nearby sawmills. Italy on the other hand, Europe's third largest pellet producer (0.65 million tonnes), has a lot of integrated pellet plants. Integrated pellet plants are built within or directly next to sawmills. This way the feedstock is fully sourced within a short distance. The utilization rates of production capacities in Sweden, Germany and Italy in 2008 are 64%, 56% and 87% respectively. In other words, in case the capacity in these three countries would be fully utilized, production could hypothetically rise by almost 2 million tonnes. Other countries also have not fully utilized their production capacities: the average Europe

utilization rate of pellet production capacity in 2008 is about 54%. Furthermore, approximately 20 new pellet plants are being built in 2009 in several European countries according to Ljungblom (2008a) and Pellets@las country reports. Overall we estimated production in the analyzed 30 European countries in 2009 may grow by at least 0.3 million tonnes.

For comparison: The North American production has grown from 1.1 million tonnes in 2003 to 4.2 million tonnes in 2008. In 2009, a number of new plants have been built in the United States to process chipped roundwood for bulk pellets, designated for export. Those plants have production capacities 3 to 4 times larger than the older plants, which are limited to 100.000 tonnes or less (Spelter and Toth 2009). As of June 2009 about 110 American and Canadian wood pellet plants were in operation or were about to become operational.

Wood pellet production in the United States in 2008 amounted to 1.8 million tonnes, which was 66% of capacity. In Canada the estimated production was 1.4 million tonnes, about 81% of capacity. The lower capacity utilization in the United States is a result of the more recent start-up of the plants. In both countries limitations on feedstock availability occurred because the economic crisis constrained sawmill-operations and reduced the output of sawdust and shavings in 2008 (Spelter and Toth 2009).

3.2. European trade volumes

While some markets such as Germany or Austria are largely self-sufficient, other markets depend to a very large extent on the import of wood pellets (e.g. the Netherlands, Belgium, Denmark and Italy). On the other hand in many producing countries (Canada being the prime example, but also other areas such as the Baltic countries and North-west Russia) the pellet production sector largely depends on export opportunities. A rather new actor on the market are the USA, which have started to export wood pellets from South East regions via the harbours of Mobile (Alabama) and Panama (Florida). Those pellets are originating from two major pellet producers using sawmill residues and chipped trees from softwood plantations (Verkerk 2009).

As described in section 2, we use the data published by Eurostat (2009a) for the period of January-April to estimate the total trade likely to occur over 2009. Total EU exports are estimated at about 2.7 million tonnes, of which 98% is trade within EU. The EU import is about 3.4 million tonnes, of which about 47% is covered by intra-trade. The biggest trade volumes are recorded by the Netherlands, Belgium and Sweden. See Figure 3.2 for export or import volumes about or above 100.000 tonnes per annum.

Main trade routes of European pellet volumes are from North America to the Netherlands & Belgium, having average overseas shipments of 20,000 to 30,000 tonnes per freight, and from Baltic States and Russia to Scandinavia by coasters, having average loads from 4,000 to 6,000 tonnes (Selkimaki and Roser 2009). Another important route is by truck from Austria to Italy, having average loads of 24 tonnes.

Remarkably, total EU intra export is not equal to total EU intra import volumes - they differ from each other by about 800,000 tonnes (out of a total of 2.7 million tonnes).

Bilateral comparisons have revealed persistent discrepancies (Ala Kihnia 2008; Segers 2009) in the various member states on the intra trade statistics, called asymmetries. The main reasons are:

- The system of thresholds for small actors. This system makes it possible to exempt about 80% of operators from statistical formalities. For a given transaction a company may be required to provide statistical information in one member state, whereas its supplier or customer in another member state is exempted.
- Late or non response by certain companies. In case of non response pellet trade is not registered by the Statistical Offices and will not be adjusted for at a later stage.
- Statistical confidentiality according to different national practices
- Misapplication of the rules and delays due to recent implementation of a pellet code within Eurostat statistics. Most common, the export is firstly being registered, followed by a registration of the import. Countries are obliged to report their intra EU export and import flows within 10 weeks. For trade with non EU countries the administration must happen within 6 weeks time.
- And, in case of values (€), the valuation of transactions differs between export (valuated on FOB basis) and import (CIF).

Figure 3.2: Overview of trade flows about or above 100,000 tonnes – 2009 (extrapolated from recorded volumes January until April 2009) Source: (Eurostat 2009a)

	Country of origin (exporter)	Country of destination (importer)	Trade volumes (Ktonne)	
			Volumes recorded by exporter	Volumes recorded by importer
Extra EU		Total volumes	54	1,609
	Canada	Belgium	No records available	92
	Canada	Netherlands		313
	Russia	Sweden		268
	USA	Belgium		173
	USA	Netherlands		359
Intra EU		Total volumes	2,690	1,779
	Austria	Italy	134	53
	Belgium	France	4	94
	Estonia	Denmark	162	158
	Estonia	Sweden	39	96
	Estonia	United Kingdom	No records	111
	Finland	Sweden	158	51
	France	Belgium	138	95
	Germany	Denmark	101	21
	Germany	Spain	183	1
	Germany	Sweden	131	74
	Latvia	Denmark	128	29
	Latvia	Sweden	131	57
	Lithuania	Denmark	115	19

3.3. Aggregated European consumption

The consumption of the selected 30 European countries was estimated at about 8.2 million tonnes in 2008 (as described in section 2 Methodology) and would therewith be equal to the production (not considering extra-European pellets imports of at least 1 million tonnes). Because of this inconsistency of production and consumption figures the consumption was estimated, in a second approach, for 2009 with Eurostat trade data (as described in section 2 Methodology).

Based on preliminary 2009² production and trade figures, the consumption for 2009 is expected to be about 8.5 million tonnes in 2009. For comparison, according to Herold (2009), the European consumption of pellets may increase from 1.5 million tonnes in 2001 to about 7.5 million tonnes in 2009. Countries having a high consumption level are Sweden, Denmark (both: mainly bulk pellets for combined heat and power), the Netherlands, Belgium (both: pellets for large scale power production), Germany (mainly bulk pellets for residential heating) and Italy (pellets in small bags). Sweden is by far the largest user of pellets (1.8 million tonnes), whereas the other countries cited have estimated consumption levels around 1.0 million tonnes.

The individual consumers in Europe can be characterized as follows (Aebiom 2008):

- Small scale residential users with a demand of less than 10 tonnes pellets per year. They consume pellets for heating of individual houses using pellet stoves, like in Italy, or pellets boilers for warm water heating systems. The delivery is organized using bags (for pellet stoves) or as bulk (for boilers), where trucks blow the quantity needed for one year into a pellet storage room or container.
- Small to medium scale users with a demand between 10 and 1,000 tonnes pellets (in bulk) per year. Typical users of this size are companies, hotels, the service sector, and bigger residential units. The market share is rapidly growing due to growing prices of heating oil.
- Medium and large scale users with a demand above 1,000 tonnes per year. Power plants, industries and large district heating companies may typically consume several hundred thousand tonnes per year in a single plant.

Figure 3.3 shows the characteristics of the major market types and their individual consumers.

² It is assumed that the production in 2009 equals the production of 2008 plus anticipated production of pellet plants opened in 2009. Trade figures in not yet administrated months of 2009 (May-December) are extrapolated according to the registered volumes in Eurostat's database of the months before (January – April).

Figure 3.3: Major characteristics of European pellet market types

	Large scale users (bulk)	Medium scale users (bulk)	Small scale users (bulk)	Small scale users (small bags)
Number of demand players per country	Few, internationally operating electricity companies (e.g. Netherlands 4 power companies having six cofiring units)	E.g. Sweden about 100 district heating plants	Many consumers: E.g. 63,000 boilers in Austria: <i>Wide range of estimated pellet boilers & pellet stoves from 52,300 (Hilgers 2008b) to 63,300 and more (Mudgal et al 2009)</i>	Many households: E.g. about 700,000 pellet stoves in Italy: <i>Wide range of estimated pellet stoves from 525,000 (Mudgal et al 2009) to 801,000 (Hilgers 2008b)</i>
Actual storage at end users	Both at harbour (up to 200,000 tonnes) and on-site (up to 10,000 tonnes per plant). Annual stock changes on country level may be considerable (Romeijn 2008).	Storage in harbours could be large, up to 10,000 tonnes, like in Sweden. One organization coordinates all pellet purchase. On site less stock volumes needed: up to 500 tonnes	Average annual use for boilers in Austria and Germany is about 6.5 tonnes and storage capacity may range from 1.5 to 15 tonnes (Senechal and Grassi 2009)	Low, due to contents of small bags (15 to 25 kg) and continual purchase of these bags.
Intermediate companies	International traders	Predominantly domestic traders	Domestic traders	Retailers
Suppliers	International pellet production plants	European pellet production plants	Domestic production plants	Domestic production plants
Actual storage at pellet plants	Average 2,500 to 5,000 tonnes per plant			
Typical way of transport	(Inter-) continental shipping (in Panamax or Handymax vessels, freights: 10,000 to 100,000 tonnes)	European sea shipping or lorry transport (delivery rates of 40 tonnes)	Lorry transport (delivery of 1 to 6 tonnes per household per year)	Both lorry transport to retailers and private cars to households
Contracts	Both long term contracts (up to 3 years) and purchase from spotmarkets	Predominantly long term contracts (up to 3 years), plus spotmarkets	Annual deliveries upon request	Infrequent purchase at retailers (15 to 25 kg bags)
Quality requirements	General criteria; company specific		Detailed, strict criteria; country specific standards, like ÖNORM M 7135 and Umweltzeichen 38 (Austria), SS 187120 (Sweden), DINplus (Germany). Criteria according EN 14961-2 as well as ENplus certificate are about to be implemented.	

For comparison: Most US pellets are put in small bags and are consumed domestically for residential heating. By contrast, most Canadian pellets are not consumed domestically, but are transported as bulk and shipped overseas for power production. Most pellets are shipped to Europe (Spelter and Toth 2009). Asia could also become an important consumer as the first large scale industrial project to co-fire coal with (Canadian) wood pellets took place in Japan in 2008 (UNECE and FAO 2009). Market experts estimated the total imported volume around 110,000 tonnes (Swaan 2008).

3.4. Logistics and storage facilities

To make pellet logistics flexible, certain storage facilities for wood pellets are built at pellet production sites, wholesalers and at conversion utilities (power plant, heating station).

Based on the total pellet production capacity in a country and the storage capacity per plant, the total storage capacity for a country is determined. Since not all companies have responded to the enquiries by the Pellets@las partners, the non-responding companies are assumed to have the same ratio between storage capacity and production capacity as indicated by respondents. From the available figures in Austria, Germany and Italy (Figure 3.4) we learn that the average storage capacity varies between 2,300 to 3,400 tonnes per plant. For comparison: Høglund (2008) indicated average stored volumes in 2007 between 3,100 and 4,300 for Swedish pellet plants, and an average storage capacity of 14,000 tonnes per plant. Average storage time is estimated to be no more than one week for large pellet plants. Large pellet producers mostly have more storage facilities, due to stronger fluctuation in their real production volumes compared to small companies. In general, the latter fully utilize their small production capacities without any strategic storage.

Figure 3.4: Stored volumes of pellets in Austria, Germany and Italy in 2008 (in tonnes)

	Number of pellet plants	Actual capacity	Real production	Average storage capacity per plant	Estimated storage capacity per country
Austria	25	1,006,000	626,000	2,600	65,000
Germany	50	2,400,000	1,460,000	3,400	168,000
Italy	75	750,000	650,000	2,270	170,000

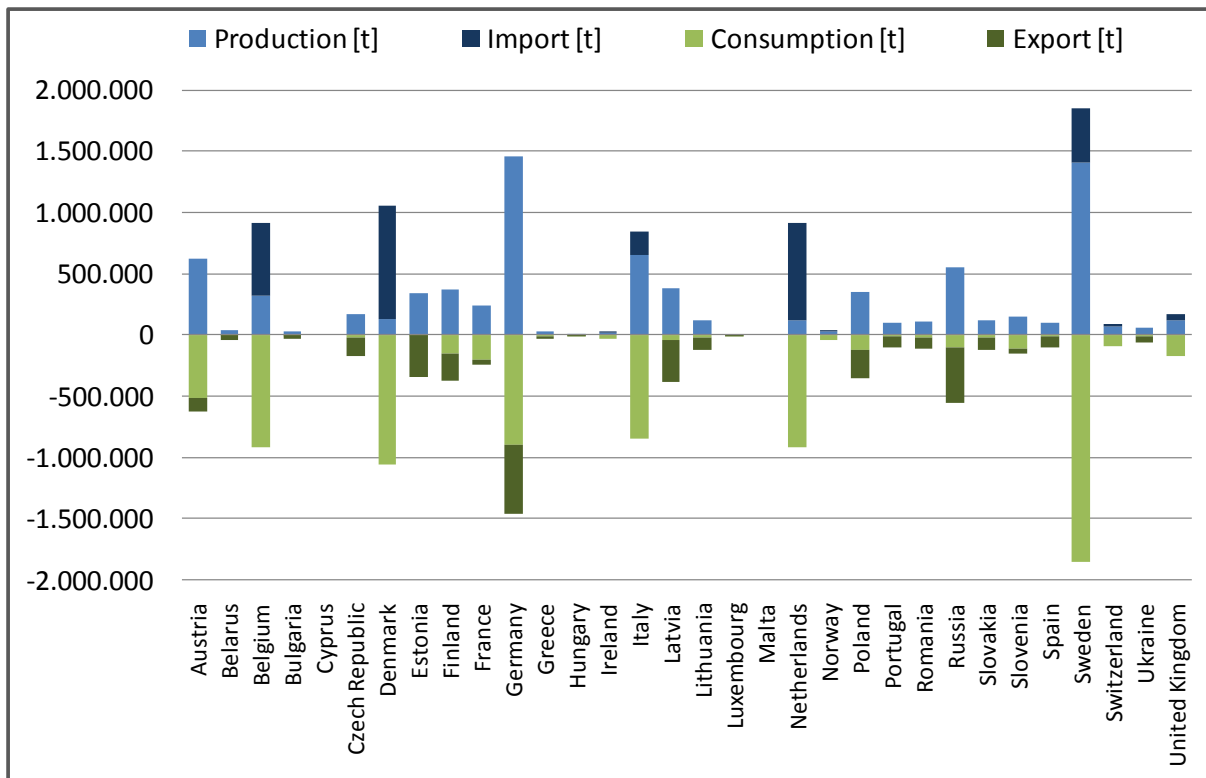
For bulk pellets for residential heating, there are almost no storage facilities apart from the production plant, although boilers are growing in size and show growing space for pellet feed-in (Hilgers 2008a). Intermediate stocking for district heating is limited, except for countries having intermediate storage facilities in place. For example in Sweden, one organization coordinates pellet purchase for district heating and, consequently, has accumulated storage facilities in Swedish harbours for more heating plants (Dale 2009).

Bulk pellets for power production have more complex storage logistics. Whereas the storage facilities at production and at conversion (power plants) are mostly depending on the season (high in summer at the production sites; high in winter at the consumer sites), the storage at intermediate distribution stages (harbours) shows also market dependent fluctuations (low storage at high price level; high storage at low price level). From the few responses of large scale consumers, it is known that especially storage in international harbours (e.g. Rotterdam) may be quite large. The intermediate storage in Rotterdam harbour reached about 200,000 tonnes in 2007, whereas the storage at the individual utilities could reach about 20,000 tonnes (Romeijn 2008). Consequently, storage times at harbours could be relatively long. However, average storage times are not known. Storage of pellets is not without any

risk, due to scalding of pellets and the possibility of dust explosion. Therefore, intermediate stevedore companies are not allowed (EBS 2006) to store pellets in harbour silos with a moisture content of more than 5% (white pellets) or 9% (bark pellets), temperatures of more than 30°C or more than 2% of fines (related to dust emissions). Since 2008, power companies in the Netherlands are not any longer purchasing their pellets on a single-utility basis, but due to strategic reasons have moved their trading activities to dedicated European head trading offices. The bulk market is rather mature; most large scale consumers do have long term contract with their suppliers, but in case of low price markets, they are eager to buy from spot markets and therefore create strategic storage facilities at the harbours (EBS 2006). The individual power utilities may use these stored pellets in their fuelling process or the trade office will re-trade them to other users in possibly other countries. The latter is called re-export. Stock changes for bulk pellets can thus be considerable, depending on the season, and therefore the influence of storage on the pellet consumption may vary from year to year.

Figure 3.5 shows the demand (below x-axis) and supply (above the x-axis) situation of the European pellet market in 2008. Large pellet markets (larger than 500,000 tonnes) can be found in Austria, Belgium, Denmark, Germany, Italy, the Netherlands, Russia and Sweden.

Figure 3.5: Balance of pellet volumes for the major European country markets 2008



4. PRICE DEVELOPMENTS

The following sections will discuss price developments for all pellet market types shown in Figure 3.1 divided into industrial users (4.1), residential users (4.2) and export markets (4.3).

4.1. Industrial pellet prices

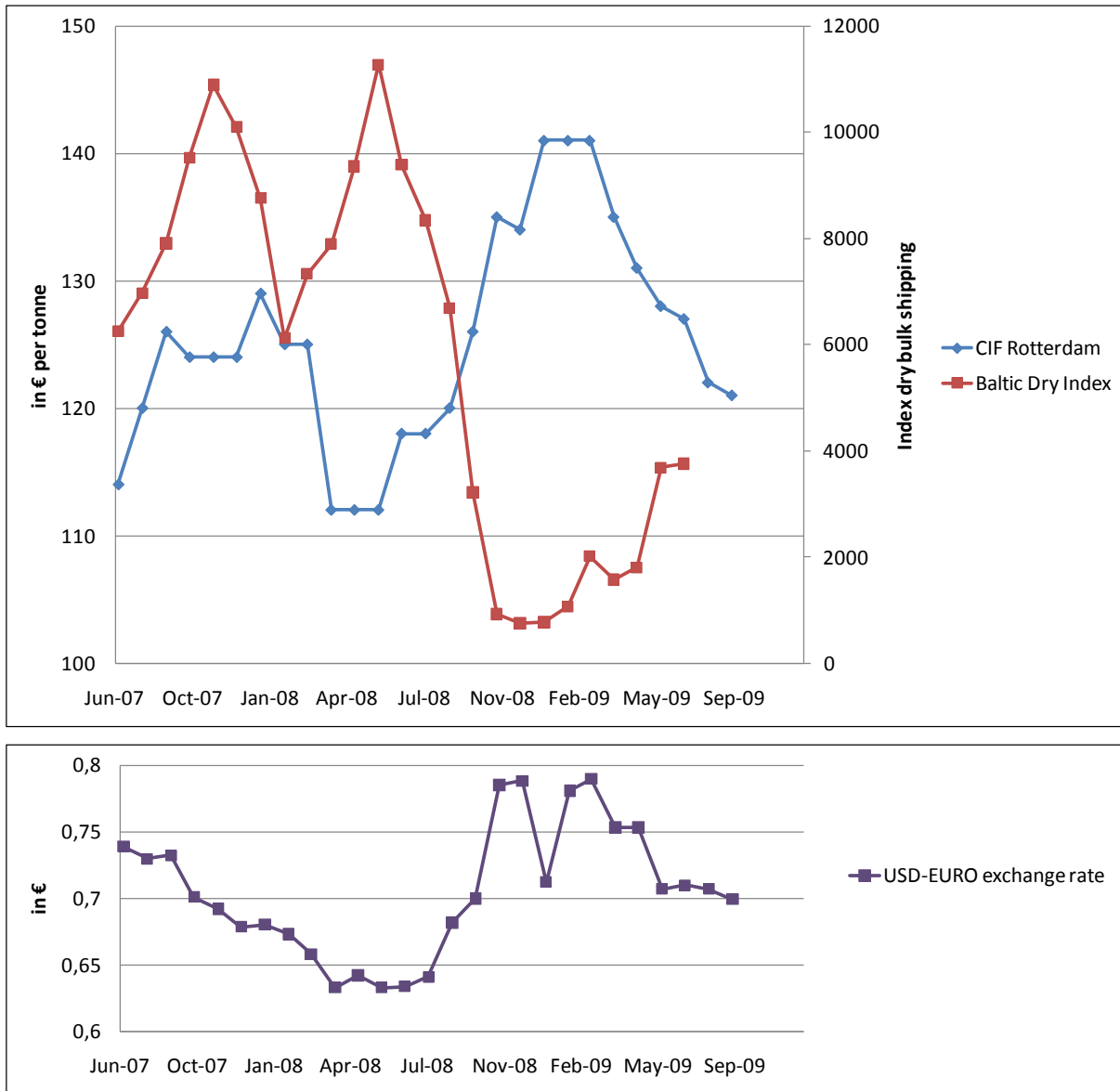
Bulk pellets for power production

Between 2003 and 2006, the Dutch government granted long term subsidies for co-firing biomass up to 6 and 7 €cent/kWh, ending between 2012 and 2015 (Sikkema et al 2009). This has given an enormous boost to co-fire pellets in coal power plants. From 2007 until October 2008, bulk pellet prices for large scale consumers were obtained from enquiries at power production plants and international traders. The prices varied between 112 €/tonne to 129 €/tonne. Since December 2008, prices are derived from the Endex price index (see section 2). Since then, bulk prices have increased from about 134 €/tonne to about 141 €/tonne in March 2009 (Figure 4.1) and have declined to 128 €/tonne in July 2009.

CIF ARA prices are shown for Rotterdam. Amsterdam had negligible amounts of pellets transshipped in 2008 (Gorris 2009) and Antwerp figures were not available. Rotterdam is the major hub for other countries, too. For example, pellets can be shipped to Rotterdam in ocean vessels and redistributed in smaller vessels, going to countries like United Kingdom and Belgium (Rotterdam harbour 2008).

According to Sikkema et al. (2009), the shipping costs are a key factor on the supply side of bulk wood pellets for power production. The Baltic Dry Index (BDI) is a key independent barometer for shipping costs of dry bulk commodities including iron ore, coal and grain by sea, and is composed of professional ship broker assessments of four types of vessels. Since the summer of 2008, the shipping costs for key dry commodities (Baltic Dry Index) have strongly dropped due to the financial crisis (overcapacity). However, the strong decline of the BDI does not necessarily affect the current cost of pellet shipping, at least not immediately. The price that an individual buyer might actually pay for wood pellets is closely linked to the size and the length of a contract. According to Hawkings Wright (2009) most wood pellets are shipped under long-term contracts, made in dollars. The exchange rate of the dollar towards the euro is more relevant for European customers. Hawkings Wright (2009) estimate that for non US based companies, tied into long term contracts, the upward exchange rate of the dollar may have increased the pellet costs by about 25% from January 2009 until July 2009 (Figure 4.1).

Figure 4.1: Prices of bulk pellets for large scale power production (CIF ARA, excluding VAT) and for comparison the Baltic dry Index (dry bulk shipping) as well as the USD-EURO exchange rate (below).



Besides long term contracts, power companies buy pellets on spot markets. The difference between long term contracts of one year and longer (relative high prices) and short term contracts of spot markets (generally lower prices) could be about 10 €/tonne or more. The largest gap occurs during summer season: market spot prices drop when Northern Europe scarce biomass storage capacity fills up during summer (Hawkings Wright 2009).

Bulk pellets for district heating

Sweden has a major market of bulk pellets for medium scale consumers. In the Swedish tax system before 2009, the heat generation was CO₂ taxed, whereas power production was not taxed. In their annual energy declaration, Swedish managers of CHP plants and co-generation systems industry declared that power was generated by coal or oil, while the heat was generated by biomass. In the current taxing system the differences between power production and heat production have disappeared (Hektor 2009). According to Dale (2009), Swedish district heating plants tend to have most of their pellet supply secured by long term contracts, up to 3 years, and buy relatively small amounts on spot markets. Power plants, on the other hand, tend to be more speculative, and by a higher share of their demand on spot markets. Concluding, bulk pellet prices for power production show higher fluctuations compared to those for district heating.

The prices of pellets used in district heating plants ranged slightly higher than those for industrial use at a height of 140 €/tonne during the second half of 2008 (excluding VAT, including delivery; Energimyndigheten 2009). Probably, the Swedish subsidy for pellet use allows district heating plants to pay higher prices on the long term market, compared to power utilities in the Netherlands and Belgium.

4.2. Residential pellet prices

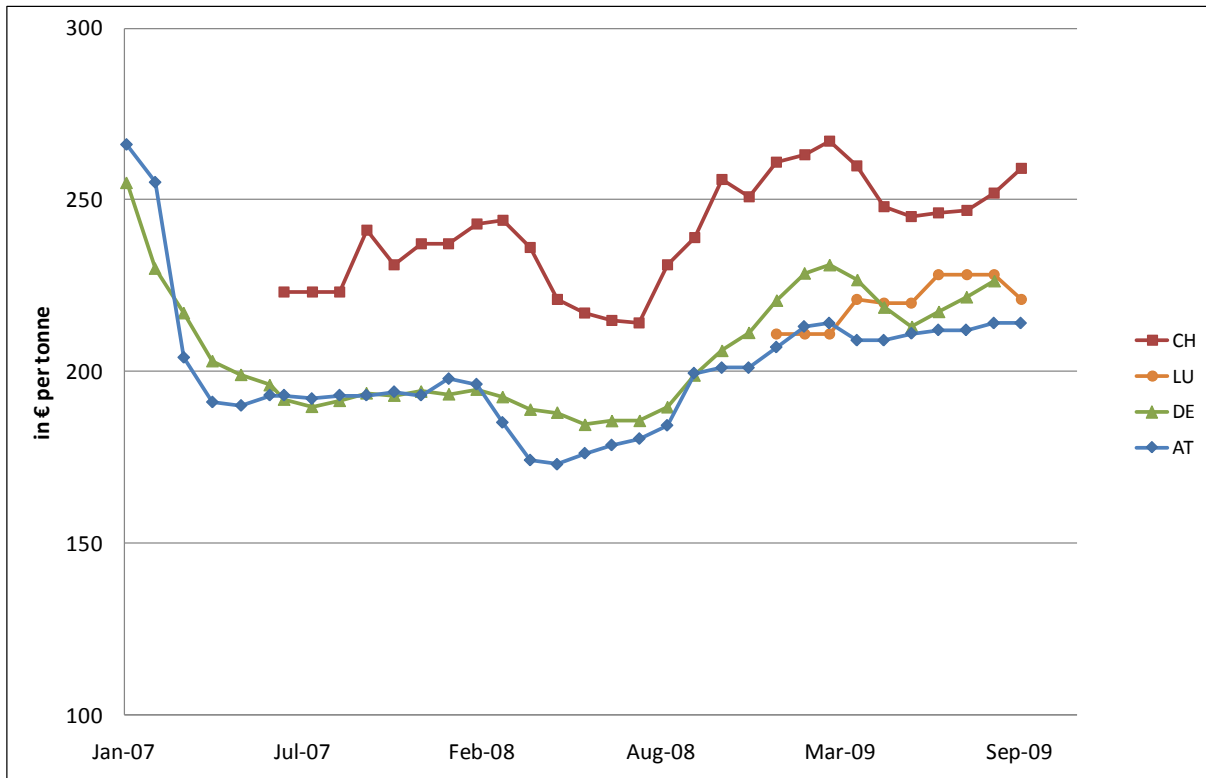
Loose pellets

According to Mudgal et al. (2009), a surge in sales of solid fuel boilers (mainly wood pellet boilers) has been registered in the past years after a long period of declining solid fuel appliance sales during the 1990's. The increase accelerated in 2005, when sales grew by nearly 30%, notably in Austria, the Czech Republic, France, Germany, Poland and Scandinavia. The growth can partly be explained by the two key elements: pellets boilers gained an image of a high performing, environmental friendly heating appliance, and the increasing prices of natural gas and heating oil.

Prices for pellets in the residential sector show both most fluctuations within a country and most differences between countries. Figure 4.2 shows an exemplary selection of price developments for loose pellets in Central European countries, representing a residential boiler heating market.

The price developments reflect different market-influencing factors. For Germany, Switzerland and Austria the seasonal development is very similar and it seems that for these countries, the same influencing factors are shaping demand, supply and prices. The markets have in common, that they are self-sufficient pellet suppliers (although for Switzerland the import is becoming interesting because of the current exchange rate), have similar structures in raw material supply and similar distribution systems. At the same time they have close economical relations. The extremely high pellet prices in Austria and Germany in early 2007 were exceptional, caused mainly by a fast increase in pellets demand and a strong winter the year before.

Figure 4.2: Prices of loose pellets for small scale (residential) heating in Central Europe (including delivery and VAT)

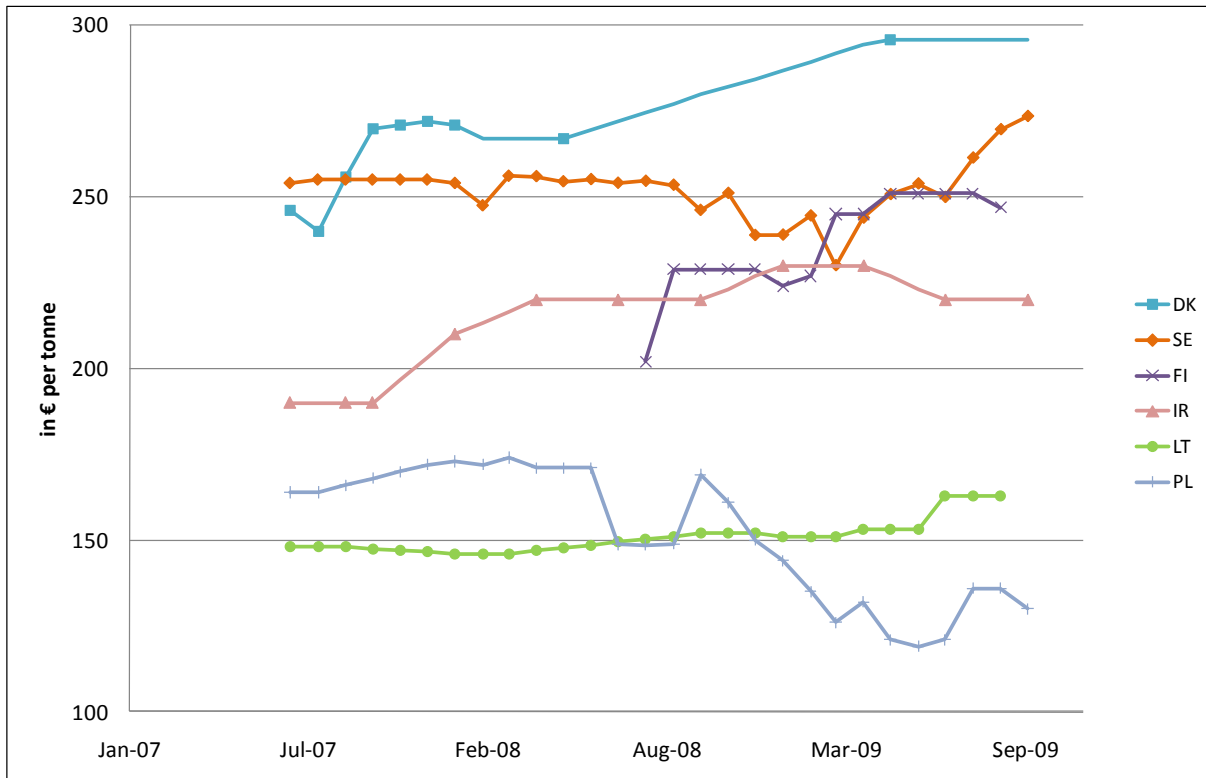


In Northern European countries the situation differs as higher prices for pellets reflect the higher average income in these countries (Figure 4.3).

The pellets price doesn't seem to follow any seasonal development. While the Finish pellets consumption market is self-sufficient, Denmark, Sweden and Ireland rely on imports. Rising prices in Finland are due to rising prices for raw material. The ups and downs of prices in Sweden since September 2008 are due to changing currency rate of Swedish Krone towards the Euro. Prices in Swedish Krone were continually rising. The Danish Krone, on the other hand, is more or less stable and has fluctuated not more than 0.2% (ECB 2009).

For comparison: The low domestic price level in e.g. Poland and Lithuania is typical for exporting countries with no considerable residential heating market (fluctuations in Polish price development are due to the currency exchange rate again, while Lithuania has a pegged exchange rate).

Figure 4.3: Prices of loose pellets for small scale (residential) heating in Northern Europe (including delivery and VAT)



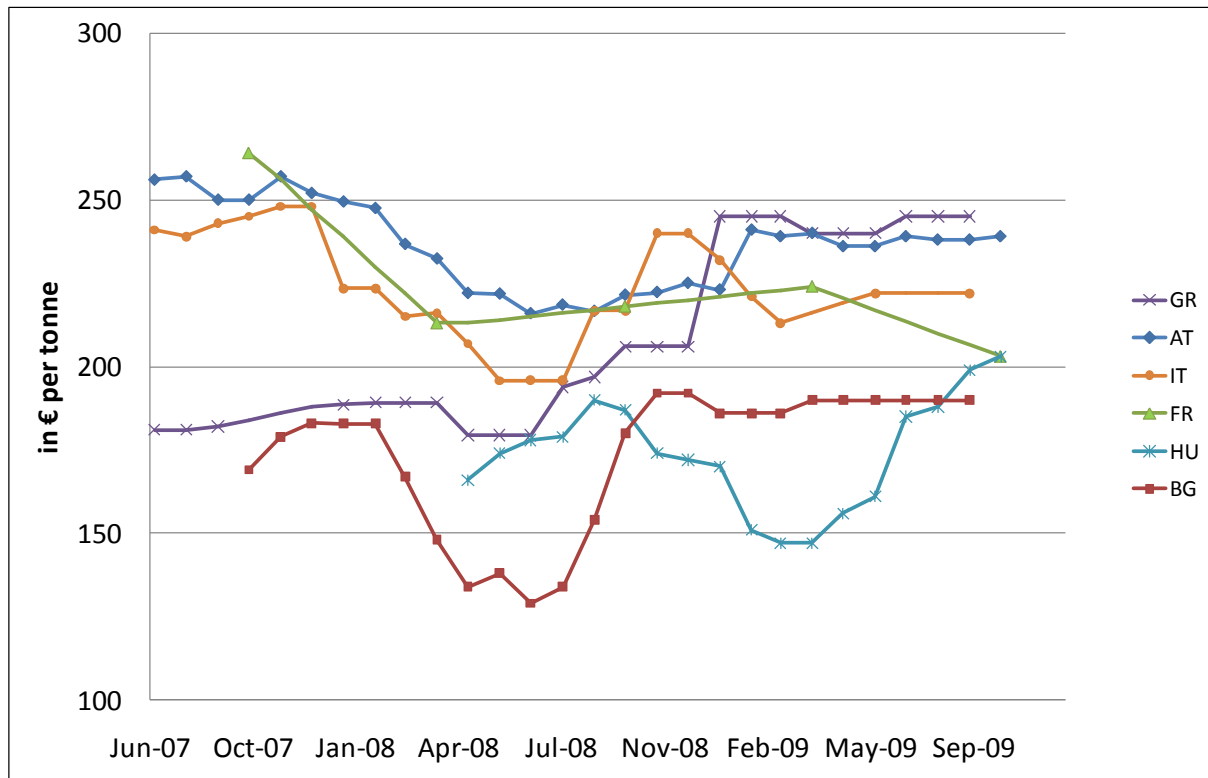
Pellets in bags

The market prices of bags were quite diffuse in 2007 and 2008, but they tend to stabilize around a range between 200 and 250 €/tonne in 2009 (Figure 4.4). Countries, representing residential stove heating markets, namely Italy and France, show a similar price development.

Regarding the other countries, again a close link can be noticed for the price development for bags between the importing country Italy on one hand and exporting countries such as Austria and Bulgaria on the other hand. The latter countries both send the larger part of their export to Italy.

Countries like Greece, Bulgaria and Hungary have only recently started with pellets production and are forced, due to a lack of domestic demand, to export most of it; in that case, pellets for the marginal domestic demand are usually sold 'ex work', due to a missing pellets distribution system, and are comparably cheap (rising prices in Greece could be due to rising raw material prices). Still, in the case of Hungary, the pellet prices for wood pellets are hardly comparable to most of the European countries due to the hectic changes in the currency exchange rate (while Bulgaria has a pegged exchange rate). Converting the prices into euro results in an odd price development in the second half of 2008 with higher summer and lower winter prices.

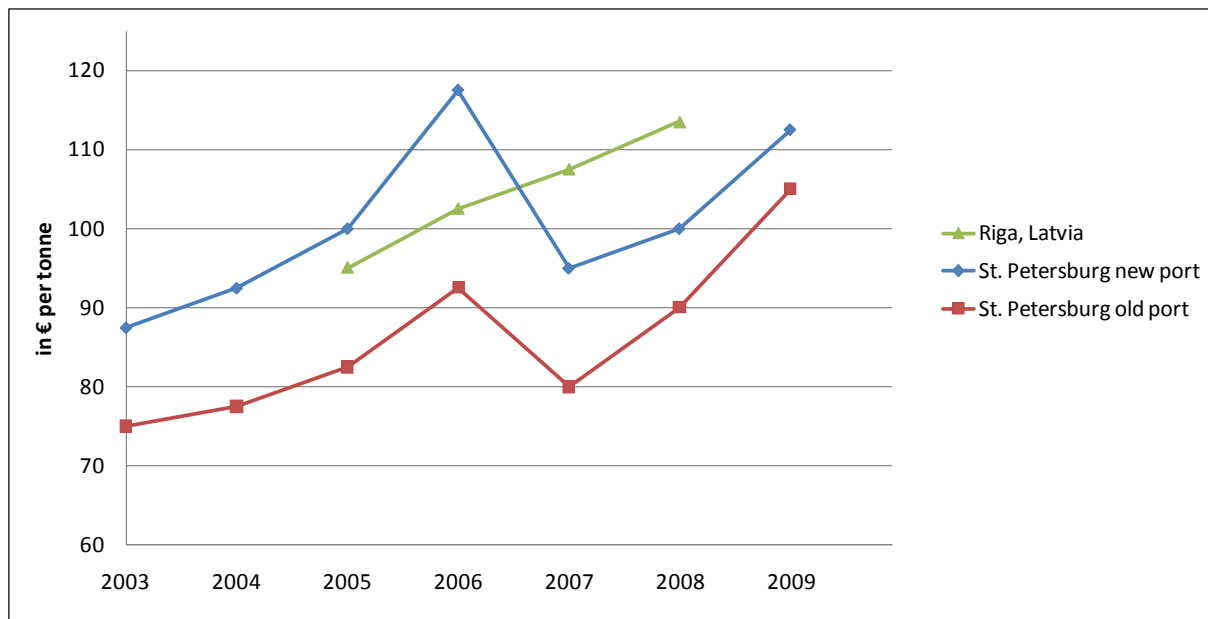
Figure 4.4: Prices of pellets in bags (< 25 kg) for small scale (residential) heating (without transportation, including VAT)



4.3. Export pellet prices (FOB)

The major export flows from Eastern Europe originate from Russia and the Baltic States. Most Russian pellets are delivered to Europe through St. Petersburg harbour (at least 60-70% of produced pellets). The prices of pellets exported from North West Russia to Scandinavia and Western European countries are at a level between 100 and 120 €/tonne FOB (excluding VAT) according to Rakitova and Ovsyanko (2009). These pellets are used for medium scale district heating in Scandinavia and, to a lesser extent, for large scale heating in the Netherlands, Belgium and UK. Furthermore, 15% of Russian pellets were exported through the Baltic harbours in the period 2008-2009. Ukraine and Belarus pellets are first distributed per train to Baltic ports and than being shipped to the European Union. Truck transport is less common: about 15% of Russian pellets and also Ukrain pellets are transported by truck to the European Union, i.e. Poland and Germany (Rakitova and Ovsyanko 2009). The biggest harbour of the Baltic countries is Riga, capital of Latvia. Export prices in Riga have gone up on an annual basis (Figure 4.5).

Figure 4.5: Average prices (FOB, excluding VAT) of bulk pellets for export markets (St. Petersburg, Riga)



Continuous supply has been difficult in both Riga and St. Petersburg harbours. Most of the suppliers are relatively small, in terms of production less than 25,000 tonnes per annum, so it takes time for them to supply a full vessel. To have reliable delivery and uniform quality, the Scandinavian customers are willing to pay a premium on top of daily pellet spot prices (Dale 2009).

For comparison: The wood pellet FOB prices for export in South East USA (Mobile in Alabama and Panama harbour in Florida) are between 84 and 92 €/tonne pellets and in West Canada (Vancouver) between 78 and 85 €/tonne (Bourne 2009).

5. CONTINUATION OF MARKET MONITORING

For those countries, where a comprehensive data collection through national associations already exists (e.g. AT, CH, DE, FR, IR, NL, SE, ...), the ambition is to continue the update of data on the Pellets@las website. To enable different organizations to enter data themselves, the website is currently reprogrammed.

LIST OF ACRONYMS & DEFINITIONS

ARA. Amsterdam, Rotterdam and Antwerp, the major harbours in Europe for international pellet transshipments.

CIF. Cost, insurance and freight. Title and risk pass to buyer when delivered on board the ship by seller who pays transportation and insurance cost to destination port. Used for sea or inland waterway transportation (Freightplus 2009) and focusing on import harbours.

FOB. Free on board. Title and risk pass to buyer including payment of all transportation and insurance cost once delivered on board the ship by the seller. Used for sea or inland waterway transportation (Freightplus 2009) and focusing on export harbours.

Retailers. A retail merchant or retailer sells pellets to end-consumers (including businesses). A shop owner is a retail merchant. If a producer sells to endconsumers he is also a retailer.

Traders. A wholesale merchant or trader operates in the chain between producer and retail merchant. Some wholesale merchants only organize the movement of goods rather than move the goods themselves. If a producer is selling to traders or retailers he is considered also a trader.

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Annex D4.1/D4.2/D4.3

The annex consists of a comprehensive overview on European market data (Figure A.1, Figure A.2, Figure A.3) and of a detailed section for each country, giving a database for all national markets of EU 25 plus Switzerland and Norway.

Figure A.1: Data collection 2008 in EU 27 plus Switzerland, Norway, Russia, Ukraine and Belarus (source: Country reports of the Pellets@las project; Rakitova O., Ovsyanko A. 2009: Wood Pellets Production and Trade in Russia, Belarus and Ukraine; Bioenergy International 6/2008)

Country	Production/Storage 2008				Produced standards			Consumption 2008		
	Number of registered producers	Production capacity (tonnes)	Production (tonnes)	Storage capacity (tonnes)	ÖNORM M 7135	DINplus	DIN 51731	Total consumption (tonnes)	Number of registered largescale consumers	Largescale consumption (tonnes)
Austria	25	1.006.000	626.000	65.000	X	X		509.000		
Belarus	8	60.000	40.000*					< 3.000		
Belgium	10	450.000	325.000			X		920.000	2	800.000
Bulgaria	17	62.000	27.000	11.000				3.000		
Cyprus										
Czech Republic	14	260.000	170.000		X	X	X	17.000		
Denmark	12	313.000	134.000			X		1.060.000	2	355.000
Estonia	6	485.000	338.000*					< 3.000		
Finland	19	680.000	373.000					150.000		
France	54	350.000	240.000	10.000		X		200.000		
Germany	50	2.400.000	1.460.000	168.000	X	X		900.000		
Greece	5	87.000	28.000					11.000		
Hungary	7	5.000	5.000					1.000		
Ireland	2	78.000	17.000					30.000		
Italy	75	750.000	650.000	170.000	X			850.000		
Latvia	15	744.000	379.000					39.000		
Lithuania	6	153.000	120.000			X		20.000		
Luxembourg	0	0	0	0				5.000		
Malta										
Netherlands	2	130.000	120.000	12.000				914.000	5	876.000
Norway	8	164.000	35.000					40.000		
Poland	21	665.000	350.000	73.000		X	X	120.000	5	
Portugal	6	400.000	100.000					10.000		
Romania	21	260.000	114.000	22.000	X	X		25.000		
Russia	77	1.200.000	550.000*					100.000		
Slovakia	14	142.000	117.000					18.000		
Slovenia	4	185.000	154.000					112.000		
Spain	17	250.000	100.000			X		10.000		
Sweden	94	2.200.000	1.405.000					1.850.000		800.000
Switzerland	14	171.000	70.000*		X	X		90.000		
Ukraine	15	140.000	60.000*		X			10.000		
United Kingdom	15	218.000	125.000	57.000		X		176.000	5	166.000

 not part of EU 27
 no pellet market

Figure A.1 gives an overview on production capacity, production, storage capacity and consumption in EU 27+2, Russia, Belarus and Ukraine. It may be noted, that the production capacities are summed up from producers statements. There was no methodology defined to estimate the production capacity in a single pellet plant, therefore the figures may reflect different approaches to estimate the production capacity (see section 2 methodology).

Production

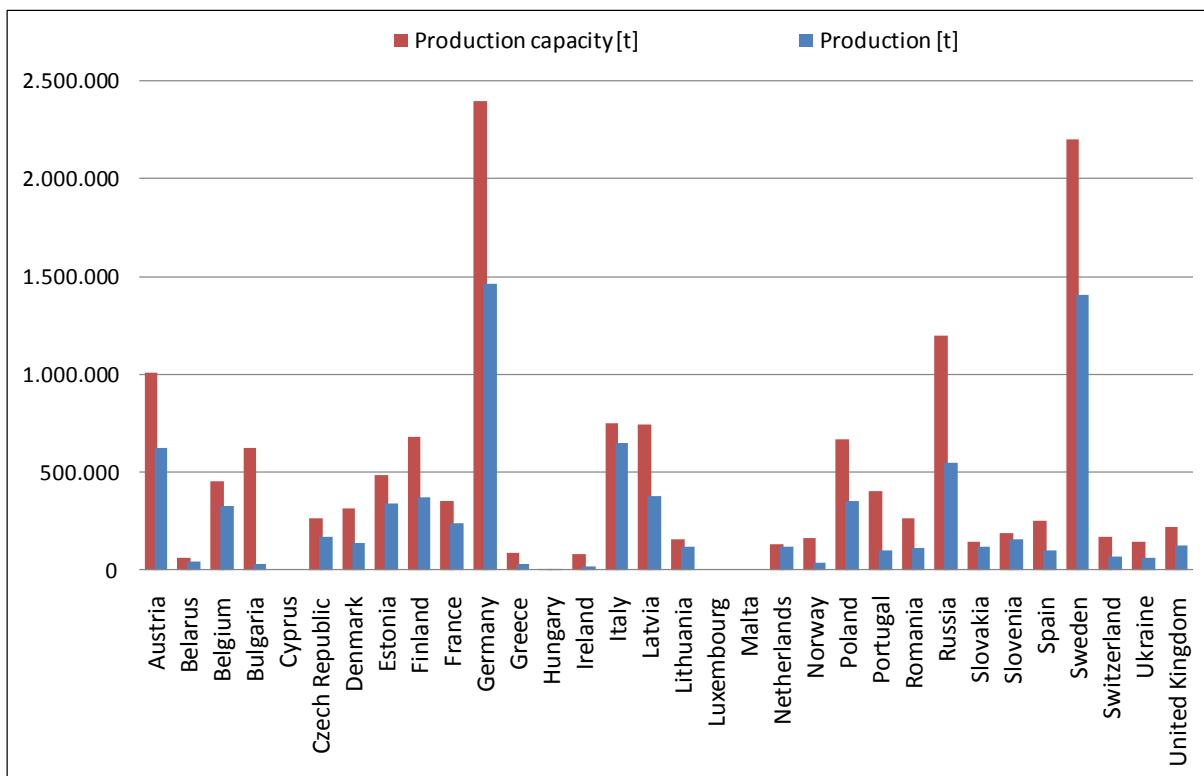
The number of producers, production capacity and production of 2008 is given, except for those figures marked with a “*”, where only 2007 data was available (Figure A.1).

The number of DINplus and ÖNORM M 7135 certificates was most recently updated in October 2009. All other information on country specific certificates was taken out of Pellets@las D7.5 (Advancement of pellets-related European standards).

Due to the dynamic development on pellet markets on one hand and the worldwide economic crises on the other hand, the number of pellet plants has been fluctuating strongly during the last year. Therefore, the list of producers represents the latest update, which may both include new companies (start-up 2009 only) and exclude pellet plants, which were shut down during 2009.

Figure A.2 gives an overview of the European pellets production.

Figure A.2: Production capacity and production in 2008 in EU 27 plus Belarus, Norway, Russia, Switzerland and Ukraine



Trade

Producers are only mentioned in the lists of traders if they are retailers and sell to end consumers. They are not especially mentioned in the list of wholesalers, for every producer is a wholesaler as well.

It is impossible to track down all wholesalers and retailers, so the lists offer a limited selection.

More comprehensive overviews of traders can be found at e.g.:

<http://www.carmen-ev.de/dt/energie/pellets/pelletliefer.html>

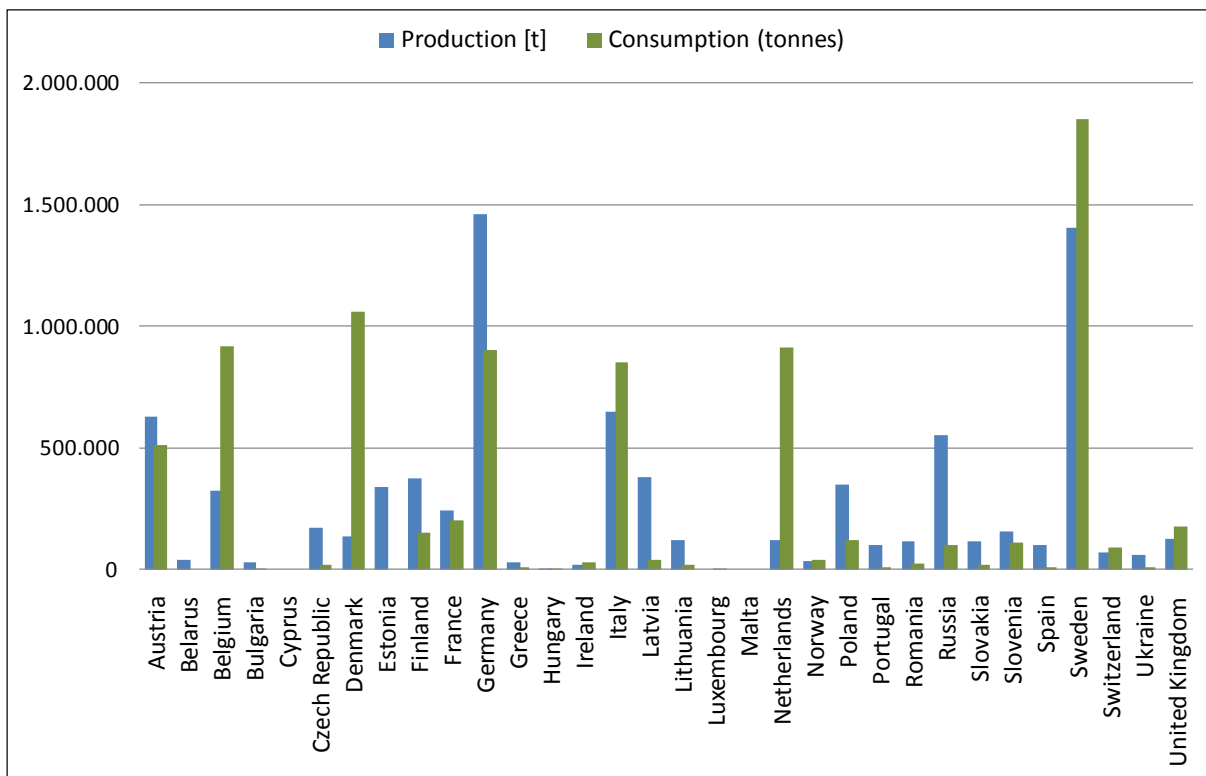
<http://www.bio-energie.de/index.php?id=359&tabelle=5&case=0>

Consumption

Consumption was retrieved from the individual country reports for 2008 (Figure A.3). In case no data for 2008 was available, the consumption was calculated as an estimation for 2009 as described in section 2 (Methodology).

Unless specified otherwise, the number of pellet boilers and stoves originates from the country reports on the Pellets@las website.

Figure A.3: Production versus consumption in 2008 in EU 27 plus Belarus, Norway, Russia, Switzerland and Ukraine



Pellets market in Austria

Production

Production capacity:	1.006.000 t/a
Real production:	626.000 t/a
National pellets standard:	ÖNORM M 7135
Existing certificates:	ÖNORM M 7135 (20), DINplus (11)

List of producers:

Name of the company	City	www
Bioenergie Gaishorn GmbH (RZ)	Gaishorn am See	www.rz-pellets.at
Firestixx Salzburg Pellet Produktions GmbH	Abtenau	--
Franz Binder Ges.m.b.H.	Fügen	www.binderholz.com
Franz Binder Ges.m.b.H.	Jenbach	www.binderholz.com
Franz Binder Ges.m.b.H.	St. Georgen/Sbg.	www.binderholz.com
Glechner GesmbH	Mattighofen	www.holzpellets.com
Hasslacher Hermagor GmbH	Hermagor	www.hasslacher-hermagor.com
Holz & Wärme Pelletsproduktion GmbH	Althofen	--
Holzindustrie Pfeifer GmbH & Co KG	Kundl	www.holz-pfeifer.com
Holzindustrie Pfeifer GmbH & Co KG	Imst	www.holz-pfeifer.com
Mayr-Melnhof Pellets Leoben GmbH	Leoben	www.mm-holz.com
Hasslacher Preding Holzindustrie GmbH	Preding	--
HTS Profilholz GmbH	Stainach	www.hts-profile.at
Hubert Enzlmüller	Peterskirchen	--
Johann Pabst Holzindustrie GmbH	Zeltweg	www.pabst-holz.com
Ländle Pellets	Dornbirn	www.laendlepellets.at
Mafi Holzverarbeitungs GesmbH	Schneegattern	www.mafi.co.at
MAK Holz GmbH	Haimburg	--
Pellex Bioenergie GmbH	Lieserbrücke	www.pellex.at
Peter Seppel Gesellschaft m.b.H.	Feistritz / Drau	www.seppel.at
Peter Seppel Gesellschaft m.b.H.	Sachsenburg	www.seppel.at
PROöko Energie GmbH	Neukirchen/V.	www.proöko.at
RZ Pellets GmbH	Ybbs / Donau	www.rz-pellets.at
Schößwendter Holz GmbH	Saalfelden	www.schoesswendter-holz.at
Wöss GmbH, Böhmerwald Pellets	Julbach	--

Trade

List of wholesalers:

Name of the company	City	www
EBES AG	Wien	www.ebes.at
ECO Energietechnik GmbH	Wals	www.energycompany.at
Genol Gesellschaft m.b.H. & Co	Wien	www.genol.at
PRIMAENERGIE GmbH	Kitzbühel	www.primaenergie.at

List of retailers:

Name of the company	City	www
Assmannmühlen GmbH	Ziersdorf	www.assmannmuehlen.at
BAUHAUS Depot GmbH	Wels	www.bauhaus.at
bauMax AG	Klosterneuburg	www.baumax.at
Bioenergie Gaishorn GmbH (RZ)	Gaishorn am See	www.rz-pellets.at
ECO Energietechnik GmbH	Salzburg	www.energycompany.at
Essmeister GesmbH & Co KG	Kemmelbach	www.essmeister.at
Genol Gesellschaft m.b.H. & Co	Wien	www.genol.at
Glechner GesmbH	Mattighofen	www.holzpellets.com
Gussmagg GmbH	Pischelsdorf	www.gussmagg.at
hagebau Österreich GmbH & CoKG	Brunn am Gebirge	www.oebau.at
Hasitschka M Agrarhandel GmbH	Deutsch Wagram	www.hasitschka.at
HEIZWERT Schörkhuber & Hörmann OHG	Waldneukirchen	www.heizwert.at
Holzmarkt Pabst	Obdach	www.holzmarktpabst.at
Hörmann GmbH	Ottendorf	www.hoermann-gmbh.at
HORNBACH Baumarkt GmbH Österreich	Wiener Neudorf	www.hornbach.at
Hot`ts Holz-Pellets Tirol	Zirl	www.holzpellets.com
Hot`ts Holz-Pellets Niederösterreich, Fa. Steinwander	Mank	www.holzpellets.com
Hot`ts Holz-Pellets Salzburg	Seekirchen	www.holzpellets.com
Lagerhaus Landeck	Landeck	www.lagerhaus-landeck.at
Lagerhaus Salzburg	Salzburg	www.lagerhaus-salzburg.at
Ländle Pellets	Dornbirn	www.laendlepellets.at
Mathis Brennstoffe GmbH	Rankweil	www.mathis-brennstoffe.at
OBI Bau- und Heimwerkermärkte Systemzentrale GmbH	Wien	www.obi.at
ÖkoWärme Holding GmbH	Reichraming	www.oekowaerme.at
Pellex Bioenergie GmbH	Lieserbrücke	www.pellex.at
Peter Seppele Gesellschaft m.b.H.	Sachsenburg	www.seppele.at
PROöko Energie GmbH	Neukirchen/V.	www.proöko.at
Quester Baustoffhandel GmbH	Wien	www.quester.at
RZ Pellets GmbH	Ybbs / Donau	www.rz-pellets.at
Schößwendter Holz GmbH	Saalfelden	www.schoesswendter-holz.at
Shell Direct Austria	Graz	www.shell-direct.at
Sihorsch Brennstoffhandels GmbH	Pirka	www.sihorsch.at
SPG Bio Pellets GmbH	Radstadt	www.spg.at
Stadlober Karl Brennstoffhandel	Fohnsdorf	www.stadlober.at
Stangl Walter	Traiskirchen	--
Sturmberger GmbH	Wartberg	www.sturmberger.co.at
Unser Lagerhaus Warenhandelsges.m.b.H.	Klagenfurt	www.unser-lagerhaus.at

Consumption

Total consumption:	509.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	63.000
Number of pellet boilers sold 2008:	11.500
Total number of pellet stoves (2007):	not known
Number of pellet stoves sold 2007:	12.000 (Source: Mudgal et al 2009)

Price development

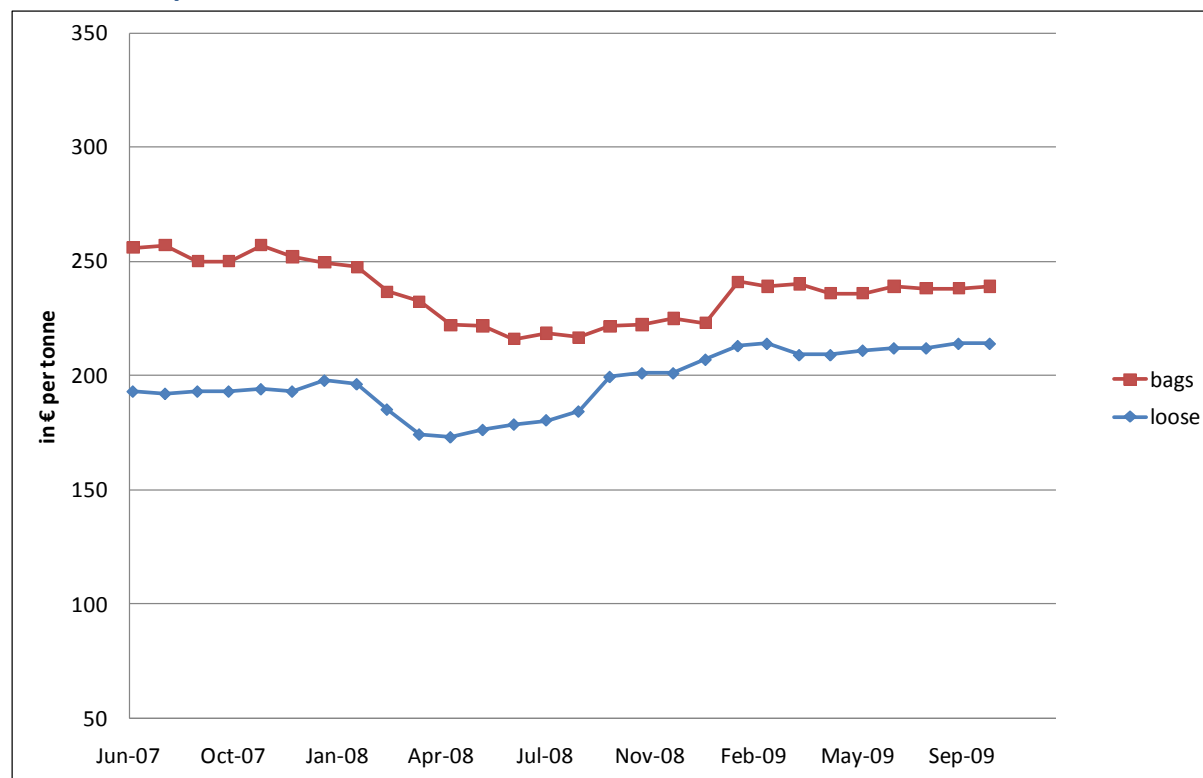


Figure A.4: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 10%);
 -) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 10%)
 Source: proPellets Austria

Pellets market in Belgium

Production

Production capacity:	450.000 t/a
Real production:	325.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (4)

List of producers:

Name of the company	City	www
Badger Pellets (Recybois)	Virton	www.badgerpellets.com
BIOFLAM BVBA	Dessel	www.bioflam.be
Delhez	DISON	www.delhezbois.be
ERDA	Bertrix	www.erda.be
EXINOR S.A.	MALMEDY	www.exinor-sa.com
Granubois SA	BIEVRE	www.granubois.be
HOGRAMIX	RENINGELST	www.hogramix.be
IBV Vielsalm	Vielsalm	www.ibv-cie.be
Pellets Mandi sa	Fleurus	www.pellets-mandi.com
Viscardy Benoît	Surice	www.pellets-viscardy.net
WONTERSPAN	DEINZE	www.wonterspan.be

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	920.000 t/a
Large scale consumption:	800.000 t/a
Total number of pellet boilers (2008):	1.000 (in Wallonia only)
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2007)	9.000 (in Wallonia only)
Number of pellet stoves sold 2008:	not known

List of large scale users (> 3000 t/a) – electricity companies:

Name of the company	City	www
Electrabel (Awirs CHP)	Flemalle	www.electrabel.be
Electrabel (Rodenhuize CHP)	Gendt	www.electrabel.be

Price development

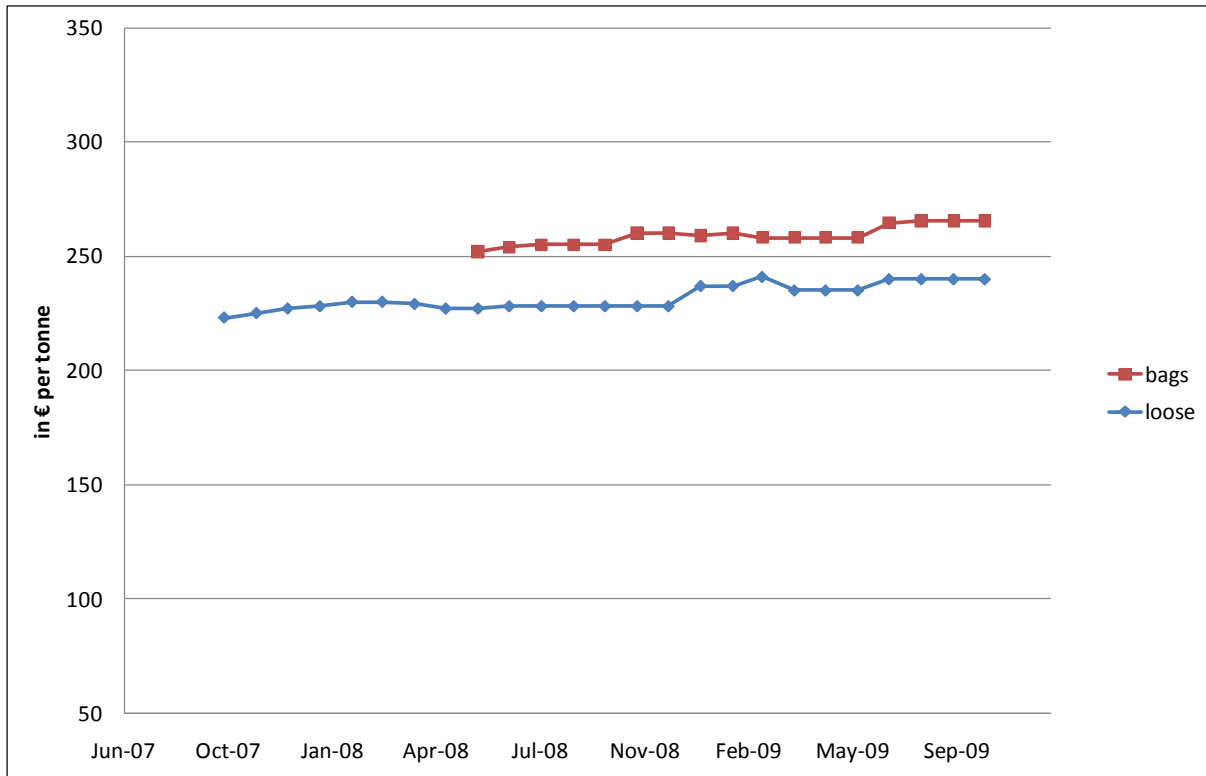


Figure A.5: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 6%);
 -) Average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 6%)
 Source: ValBiom

Pellets market in Bulgaria

Production

Production capacity:	62.000 t/a
Real production:	27.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Agro Mex LTD	--	--
Ahira JSC	Plovdiv	--
Ais-Les LTD	Ajtos	--
BALKANIC BIO FUEL LTD	Sofia	www.balkanicbiofuel.com
BIOFIRE LTD	Sofia	www.biofirepellets.com
Bosna-mt LTD	Burgas	--
Bulpellet LTD	Sofia	--
E i M - 99 GmbH	Sofia	http://eim99.bgcatalog.com
Eco Bio Plam LTD	Sofia	--
Ekoflam LTD	Sofia	--
EKOKALOR LTD	Velinograd	www.ekokalor.hit.com
ERATO RESURS	Haskovo	www.erato.bg
Montdental LTD	Montana	--
Pellets LTD	--	--
Projekta ekologika	Razlog	--
Sokola AD	Pestera	--
TECHNOWOOD JSC	Razlog	www.technowood.bg

Trade

List of wholesalers:

Name of the company	City	www
Ekoeffect Bulgaria LTD	Pernik	www.ekoeffect.com
Eurospace	Sofia	--

List of retailers:

Name of the company	City	www
BALKANIC BIO FUEL LTD	Sofia	www.balkanicbiofuel.com
BIOFIRE LTD	Sofia	www.biofirepellets.com
Ekoeffect Bulgaria LTD	Pernik	www.ekoeffect.com
EKOKALOR LTD	Velinograd	www.ekokalor.hit.com
K.A. Technology	Sofia	--

Consumption

Total consumption:	3.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

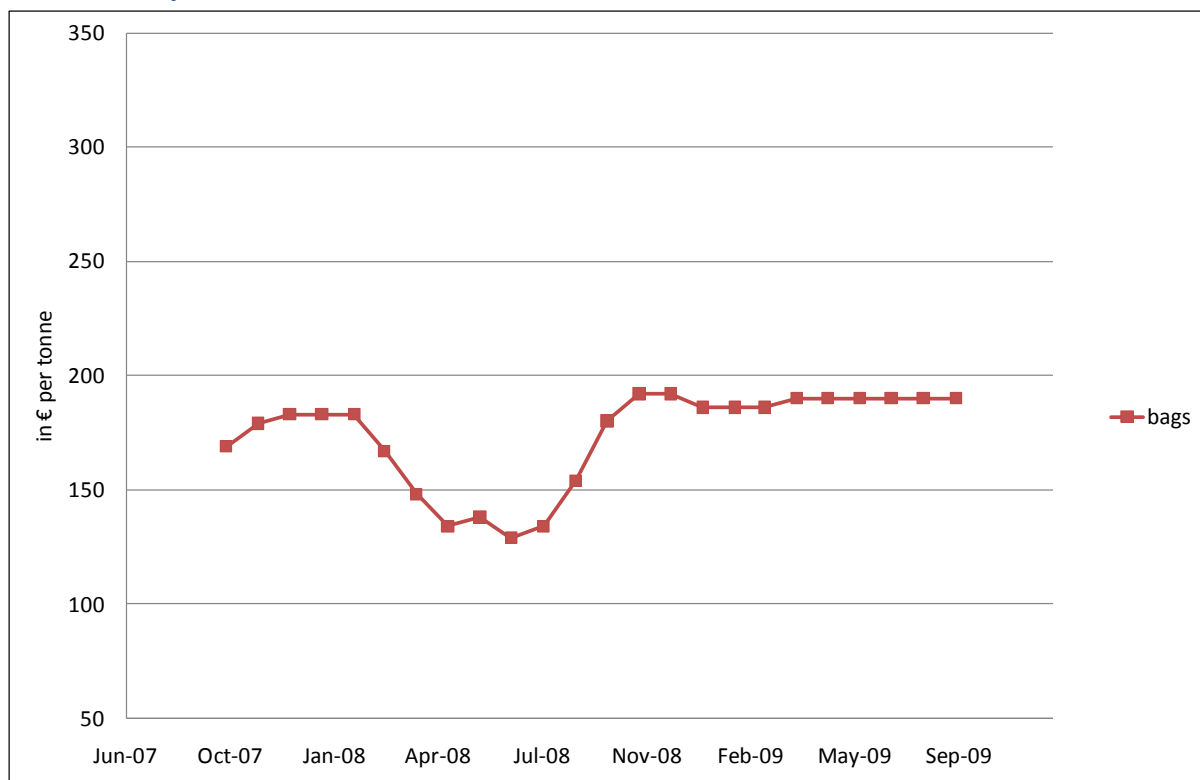


Figure A.6: -) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 20%)

Source: Holzforschung Austria

Pellets market in Czech Republic

Production

Production capacity:	260.000 t/a
Real production:	170.000 t/a
National pellets standard:	none
Existing certificates:	ÖNORM M 7135 (7), DINplus (3)

List of producers:

Name of the company	City	www
ATEA PRAHA, s.r.o	Rudná u Prahy	www.ateap.cz
ECOPELLETS s.r.o.	Brunn	www.ecopellets.cz
ENVITERM a.s.	Ždírec nad Doubravou	www.enviterm.cz
EUROPELET GROUP a.s.	Milín	www.europelet.cz
HOLZINDUSTRIE DONAU, S.R.O.	Trhanov	www.pfeifer- beteiligung.com/donau.html
Jesenicka Biopaliva s.r.o.	Opava	www.bioenergy.cz/jb
Leitinger Bio Pellets Paskov s.r.o	Paskov	www.mm-holz.com
Pal-Eko Ltd.	--	www.pal-eko.cz
PELLETIA_TEC s.r.o.	Smince	www.pelletia.cz
PILA.EKOPAL s. r. o	--	www.pilaekopal.com
Verner EcoStar	Jihocesky Kraj	--
Benaz a.s.	Plana	
Solitera spol. s r.o.	Chodova Plana	www.solitera-pelety.cz
Haas Fertigbau	Horažďovice / Chanovice	--

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
Benaz a.s.	Plana	--
ECOPELLETS s.r.o.	Brunn	www.ecopellets.cz
ECO-VEST s.r.o.	Uhlirské Janovice	www.ecovest.cz
OSTAX s.r.o.	Valasské Mezirčí	www.ostax.cz
PELLETTEX s.r.o.	Dacice	www.pellettex.cz
SDO Group	Okres Hodonín	www.peleta.cz
Verner EcoStar	Jihocesky Kraj	--

Consumption

Total consumption:	17.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2007:	900 (Source: Mudgal et al 2009)
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development (*no information available*)

Pellets market in Denmark

Production

Production capacity:	313.000 t/a
Real production:	134.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (1)

List of producers:

Name of the company	City	www
Bodilsen A/S	Nykøbing Mors	www.bodilsen.dk
Dan - Træpiller	Vamdrup	www.dan-traepiller.dk
Dangrønt, Års	Aars	--
Danpill I/S	Bjerringbro	--
Dansk Træemballage (DTE A/S)	Ribe	www.stampemollen.dk
Genfa Træpiller	Vinderup	www.genfatraepiller.dk
JK Bioenergy ApS	Røddekro	--
Kongea Formbrændsel	Gredstedbro	www.kongea-formbraendsel.dk
Lervanggaard	Ringkøbing	www.lervanggaard.dk
Sinding-Ørre Træpillefabrik	Herning	--
Skandinavisk Bio Brændsel Industri ApS	Assens	--
Steens Biobrændsel	Kjellerup	www.steensbiobrændsel.dk
VAPO A/S, Vildbjerg	Vildbjerg	www.vapo.fi/eng/

Trade

List of wholesalers:

Name of the company	City	www
Aarhusegnens Andel	Galten	www.aarhusegnen.dk
Abildgaard Brændsel	Hobro	www.abildgaard-braendsel.dk
Biobrændsel Danmark ApS	Ringsted	www.lars-meldgaard.dk
Celsico - GEE Bioenergy A/S	Sorø	www.celsico.dk
DLA Agro Grovvarerforretninger	Fredericia	www.dla.dk
Dlg Service	København V	www.dlg.dk
Energi Randers Supply	Randers	www.energiranders.dk
Energihuset - A/S Dansk Shell, Træpiller	Nærum	www.shell.dk
Flauenskjold Korn	Dronninglund	--
Grønbjerg Mølle ApS	Give	--
Himmerlands Grovvarer	Aars	www.himmerlands-grovvarer.dk
Hjaltelin Agro	Kolding	www.hjaltelin.dk
Højlund Mølle	Gudbjerg Sydfyn	www.hojlund.dk
Hornsyld Købmandsgård	Hornsyld	www.hk-hornsyld.dk
Hp Briketter Thy - Mors afd.	Snedsted	www.pille-peter.dk
Møllerup Mølle A/S	Nykøbing Mors	www.mollerup.dk
Nordjysk Andel	Vrå	www.nordjysk-andel.dk
NRGI Handel	Århus N	www.handel.nrgi.dk
OK	Viby J	www.ok.dk
Rosager ApS	Svendborg	www.rosager.dk
Rosenkrantz a/s	Aalborg	www.rosenkrantz.dk

RW Energi	Bindslev	--
S P Foder og Energi I/S	Østbirk	--
Spanvall A/S	Jerslev	www.spanvall.dk
Statoil	København SV	www.statoil.dk
Sydjysk Stoker	Løgumkloster	www.sydjysk-stoker.dk
TM Trading	Nykøbings Sj.	www.tmtrading.dk
TPI Bioenergy c/o DLA Agro	Fredericia	www.dla.dk
Vestjyllands Andel	Ringkøbing	www.vja.dk

List of retailers:

Name of the company	City	www
Aarhusegnens Andel	Galten	www.aarhusegnen.dk
Abildgaard Brændsel	Hobro	www.abildgaard-braendsel.dk
Biobrændsel Danmark ApS	Ringsted	www.lars-meldgaard.dk
Celsico - GEE Bioenergy A/S	Sorø	www.celsico.dk
DLA Agro Grovvarerforretninger	Fredericia	www.dla.dk
Dlg Service	København V	www.dlg.dk
Energihuset - A/S Dansk Shell, Træpiller	Nærum	www.shell.dk
Flauenskjold Korn	Dronninglund	--
Flex Heat	Horsens	www.flexheat.dk
Grønbjerg Mølle ApS	Give	--
Himmerlands Grovvarer	Aars	www.himmerlands-grovvarer.dk
Hjaltelin Agro	Kolding	www.hjaltelin.dk
Højlund Mølle	Gudbjerg Sydfyn	www.hojlund.dk
Hornsyld Købmandsgård	Hornsyld	www.hk-hornsyld.dk
Hp Briketter Thy - Mors afd.	Snedsted	www.pille-peter.dk
Lervanggaard	Ringkøbing	www.lervanggaard.dk
Møllerup Mølle A/S	Nykøbing Mors	www.mollerup.dk
Nordjysk Andel	Vrå	www.nordjysk-andel.dk
NRGI Handel	Århus N	www.handel.nrgi.dk
OK	Viby J	www.ok.dk
Rosenkrantz a/s	Aalborg	www.rosenkrantz.dk
RW Energi	Bindslev	--
S P Foder og Energi I/S	Østbirk	--
Spanvall A/S	Jerslev	www.spanvall.dk
Statoil	København SV	www.statoil.dk
Sydjysk Stoker	Løgumkloster	www.sydjysk-stoker.dk
Vestjyllands Andel	Ringkøbing	www.vja.dk

Consumption

Total consumption:	1.060.000 t/a
Large scale consumption:	355.000 t/a
Total number of pellet boilers (2007):	30.000 (Source: Mudgal et al 2009)
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

List of large scale users (> 3000 t/a) – electricity companies:

Name of the company	City	www
DONG Energy	Fredericia	www.dongenergy.dk
Vattenfall AS	København	www.vattenfall.dk

Price development

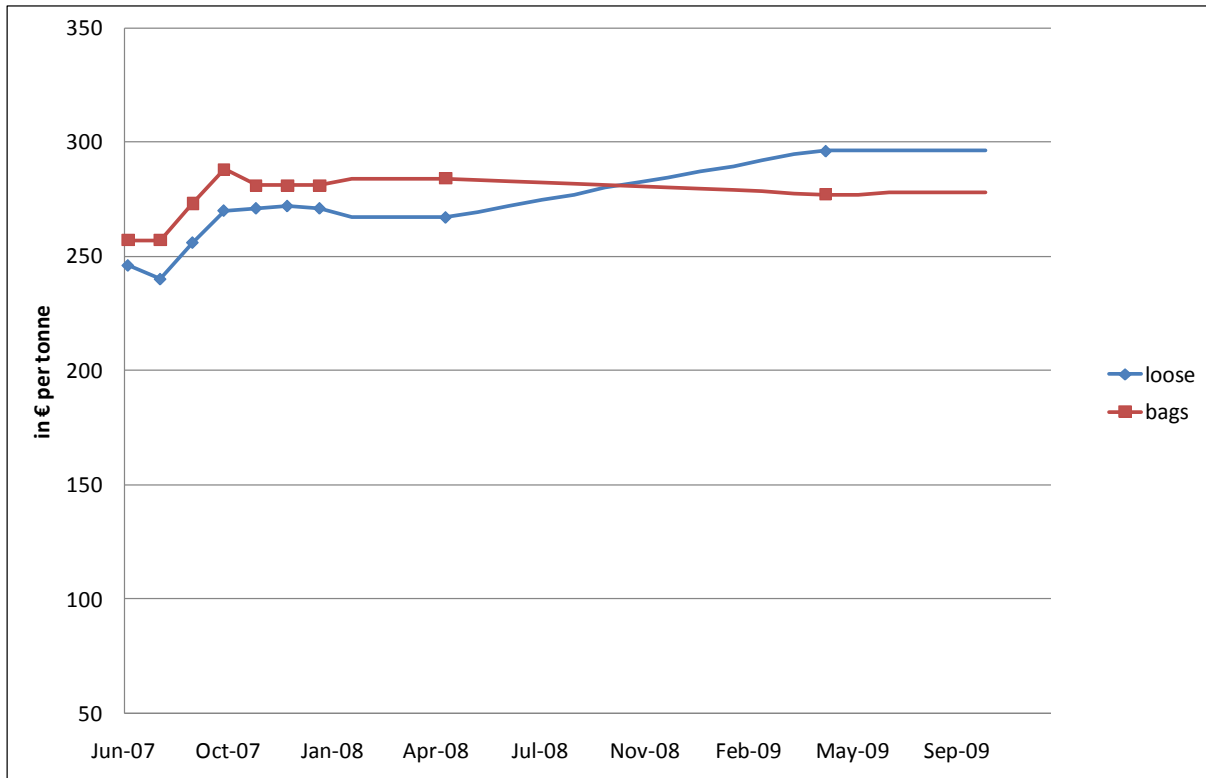


Figure A.7: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 25%);
 -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 25%)
 Source: FORCE Technology

Pellets market in Estonia

Production

Production capacity:	250.000 t/a
Real production:	100.000 t/a ³
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
AS Graanul Invest	Tallinn	www.graanulinvest.ee
AS Kalvi mõis	--	--
Flex Heat AS	Lääne-Virumaa, Väike-Maarja Community	www.flexheat.ee
Hansa Graanul AS	Valgamaa, Helme vald	www.hansagraanul.ee/
Kronopal OÜ	Jõgeva	www.kronopal.ee
Qcell OÜ	Assaku	--

Trade

List of wholesalers:

Name of the company	City	www
Tapor Trade OÜ	Tallinn	www.taportrade.ee

List of retailers:

Name of the company	City	www
Tapor Trade OÜ	Tallinn	www.taportrade.ee

Consumption

Total consumption:	< 3.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

³ Data of 2007

Price development

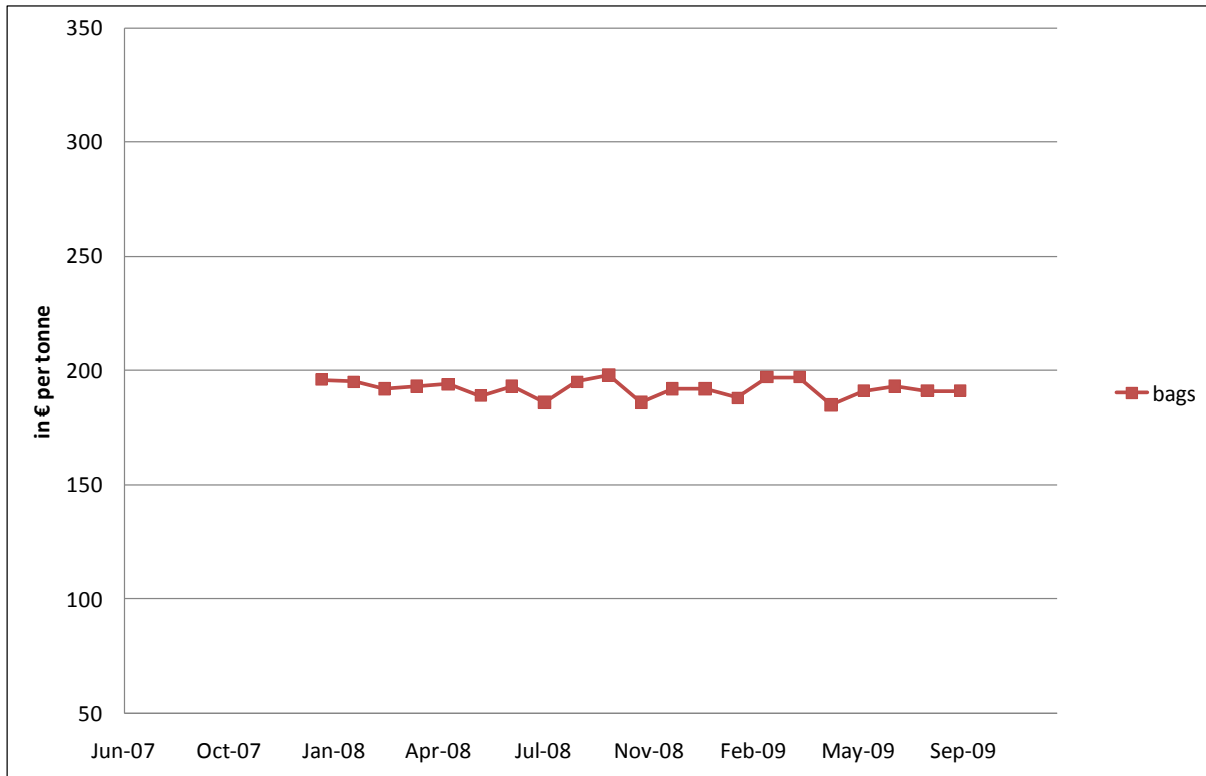


Figure A.8: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 18%);
 -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 18%)
 Source: LETEK South Estonian Centre of Renewable Energy

Pellets market in Finland

Production

Production capacity:	680.000 t/a
Real production:	373.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Biowatti Oy	Espoo	www.biowatti.fi
Formados Oy	Kuusamo	--
Green Energy Life Oy	Vihanti	www.greenenergy.fi
Haminan puunjalostus Oy	Metsäkylä	--
Keurak Oy	Keuruu	www.keurak.fi
Lapin Ekolämpö Oy	Keminmaa	--
Oy Kari Nummela Biopellet Systems	Lappila	www.pelletti-pel.fi
Oy Lardella Ab	Hormisto	www.lardella.fi
Paahtopuu Oy	Korkeakoski	www.paahtopuu.fi
Parkanon Pellet	Parkano	www.parkanonpellet.net
Pellettilämpö/A.J.A. Import	Nivala	www.pellettilampo.com
PP-Hot Oy	Korkeakoski	www.pp-hot.fi
Punkaharjun Pelletti Ky	Punkaharju	--
PuuPrisma Oy	Kesälahti	http://personal.inet.fi/yritys/puuprisma/
Sievin Konepalvelu Oy	SIEVI AS	www.sievinkp.fi
Turveruukki Oy	Oulu	www.turveruukki.fi
Vapo Oy	Jyväskylä, P.O.Box 22	www.vapo.fi

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	149.200 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2007:	200 (Source: Mudgal et al 2009)
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

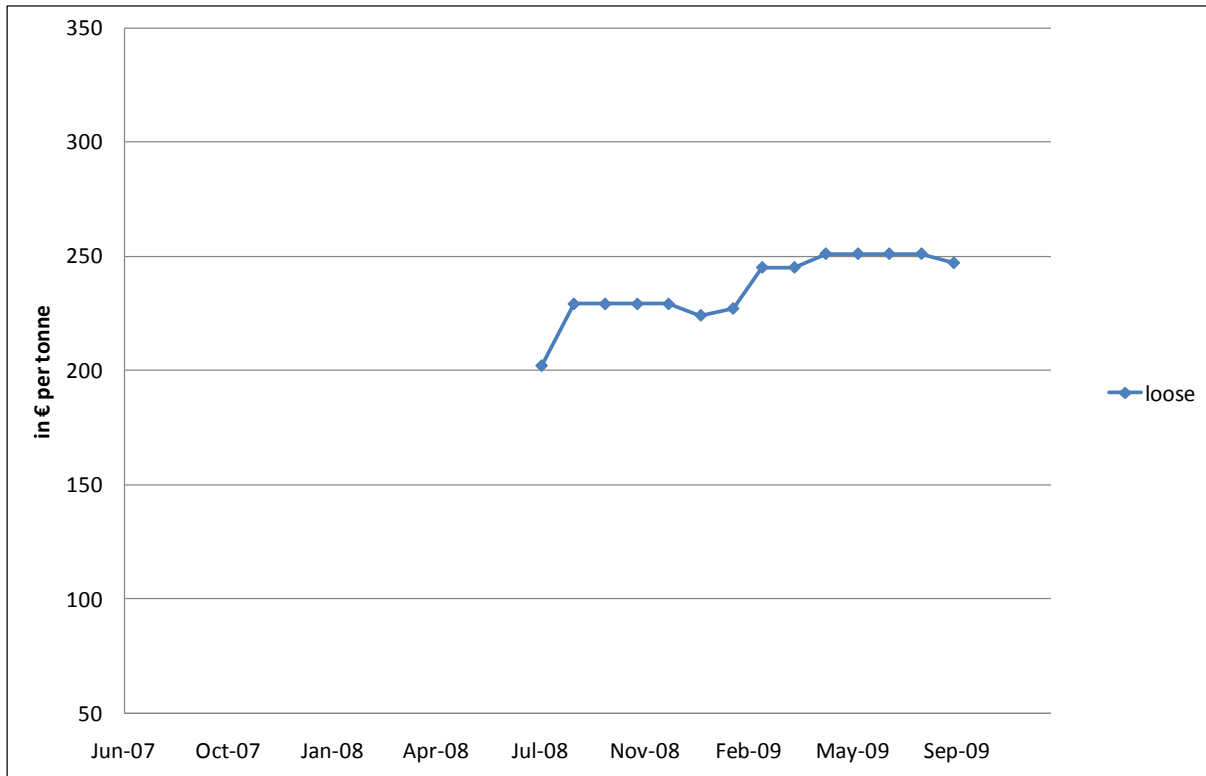


Figure A.9: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport; incl. VAT 22%)
 Source: VTT/SPE

Pellets market in France

Production

Production capacity:	350.000 t/a
Real production:	240.000 t/a
National pellets standard:	NF Granules Biocombustibles
Existing certificates:	NF (5), DINplus (5)

List of producers:

Name of the company	City	www
ALCAN SARL	Perpignan	www.alcal-chauffage.com/
ASWOOD SAS	BOULLEVILLE	www.aswood.fr
AZUR PELLETS	Pontcharra	www.azurpellets.fr/
BARA SAS	SARS ET ROSIERES	--
Biowood	CHALLANS	www.biowood.fr
BOIS 2 R	ST SAUVEUR DES LANDES	www.bois2r.fr
BOIS 2 R	Amboise	www.bois2r.fr
BOIS DU DAUPHINE	LE CHEYLAS	www.bois-du-dauphine.fr
BOIS SUP Energies Renouvelables	Engenville	www.boisup.fr
CAVAC	LONGUENOE	www.cavacweb.info/
CILC ENERGIE	JAUNAY CLAN	www.cilc.fr
COGRA 43	CRAPONE SUR ARZON	www.cogra.fr
COGRA 48	MENDES	www.cogra.fr
COOPEDOM Cooperative Deshydratation	DOMAGNE	--
EBURO	SAINT GERMAIN LES BELLES	http://eburo.fr/
ENERGIE RENOUVELABLE DE L'EST	LA BRESSE	--
EO2	Saint-Germain-Prés-Herment	www.eo2.fr
EURODESI SAS (euroluz)	PAUVRES	www.euroluz.fr
EUROFOURRAGE	ARC les GRAY	--
FONTAINE DES AUGES SAS	GENDREY	--
FRANCE GRANULE TECHNOLOGIE - FGT	PARAY LE MONIAL	--
GRANUVOSGES	GOLBEY	www.granuvosges.com
HAUT DOUBS PELLETS	LEVIER	--
LALLIARD-BOIS	ST PIERRE EN FANCIGNY	www.lalliard-bois.fr/
LE PELLETT VOSGIEN SARL	FRAIZE	--
MANUBOIS (gp Lefevre)	LES GRANDES VENTES	www.groupe-lefebvre.fr
Menuiserie DEVAUX	LONGEVILLE sur DOUBS	--
MINATEL	MIREMONT	www.granobois.com
N3DI-CEBEC	ERCES	www.n3di.fr
NEO SPHERE	SOMAIN	www.neo-sphere.fr
N'ERGYA	Vacheresse	www.nergya.fr
OMISN	LE BOUSQUET d'ORB	--
Parqueterie de Bourgogne	CERISIERS	www.parquet.fr
RHONALBOIS	ST BARTHELEMY DE	www.rhonalbois.fr/

	BEAUREPAIRE	
SAVOIE PAN SA	TOURNON	www.savoiepan.com
SCA de Déshydratation d'ARCIS SUR AUBE	ORMES	--
SCA de Déshydratation de la Haute Seine	BAIGNEUX LES JUIFS	--
Scierie ARCHIMBAUD	BRIOUX BOUTONNE	www.scierie-archimbaud.com
SCIERIE PIVETEAU	STE FLORENCE	www.piveteau.com
SERVARY SAS	Saint Vincent de Tyrosse	www.bioforest.fr
SGA DIWOOD	ARLANC	www.diwood.eu/
SICA GRASA	STE SABINE EN BORN	--
SIDESUP	ENGENVILLE	--
SIMONIN FRERES	MORTEAU	www.simonin-bois.fr
société des menuiseries OMI	La Tour sur Orb	--
SOCOFAG SAS	PONTIVY	www.socofag.com
Sofag Sarl	Champagneulle	www.lajurassienne.fr
STIVAB (gp SICSA)	CLEVILLERS	http://stivab.fr/
SUNDESHY	NOIRLIEU	www.sundeshy.fr
UFAB (gp Le gouessant)	LAMBALLE CEDEX	www.legouessant.fr
USIBOIS DU DOUBS	FOURNETS LUISANS	www.usibois.com
VALORIS ENVIRONNEMENT	ORGELET CEDEX	www.valoris-environnement.fr
VERT DESHY	MEXIMIEUX	www.vertdeshy.fr

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
ACTION HABITAT	JANS	--
AES	SAINT PAUL LA ROCHE	--
BARA SAS	SARS ET ROSIERES	--
BENEVENT SEBASTIEN	STE CHRISTINE	--
BFC GRANULES	LE FAY	www.bfcgranules.com
BIO ELEC	ST PROJET ST CONSTANT	--
BOBOIS ENERGIE - ETS BEAUD	THOIRY	www.boboisenergie.com
BOIS 2 R	PIERRES	--
BOIS 2 R	AMBOISE	--
BOIS 2 R	L'ABSIE	--
BOIS DU DAUPHINE SAS	LE CHEYLAS	www.bois-du-dauphine.fr
BOIS ENERGIE CEVENNES LANGUEDOC	ALES	www.boisenergie-cl.com
BOSC ET FILS	REALMONT	--
BREIZH ECO	LA FRESNAIS	www.breizh-eco.com
BUCAS ET FILS	STE MARIE	--
CHARPENTES SAINT JEAN - POELE-A-BOIS.FR	TOULOUSE	www.poele-a-bois.fr
CR BOIS ET ESPACES VERTS	MUTZIG	--
EARL CHEMIN DE LA BICHE - JURA PELLETS	CHILLY LE VIGNOBLE	--
ECO.CHAUFFE 39	CROTENAY	www.ecochauffe39.com

ENERBUCHES SARL	PAULX	www.enerbuches.fr
ENERGIES RENOUVELABLES BEAUJELAISES	VILLIE - MORGON	--
ENERGIES RENOUVELABLES INNOVATION SARL	CRENANS	--
ETS BALDIT	VIGNEUX SUR SEINE	-
EURO ENERGIES	GRANZAY GRIPT	www.woodstock-bois.fr
EUROFOURRAGES	ARC LES GRAY	--
France Pellets SAS	SILLY EN GOUFFERN	www.france-pellets.com
GRF PECHSEUL	AVOISE	--
HALL DE LA CHEMINEE	CAHORS	--
JURAPLAQUETTES	GEVINGEY	--
KONEX CONSULTING	CHALON EN CHAMPAGNE	www.konex-consulting.com
NATURFEU SARL	VALENCE	www.naturfeu.com
NEO SPHERE	SOMAIN	--
OMISN	LE BOUQUET D'ORB	--
SGA DIWOOD	ARLANC	--
SYLEOL	ORLEANS	www.syleol.com
TERRENERGIE	VULAINES LES PROVINS	www.terre-energie.com
USIBOIS DU DOUBS	FOURNETS LUISANS	www.usibois.com
VALDEBOIS	CUXAC D'AUDE	http://valdebois.chez-alice.fr
VOGEL GERARD SARL	TRUCHTERSHEIM	--
VRIET ET FILS	ST JULIEN L'ARS	--
WALLACH ENERGIES PELLETS - Etablissements	SAUSHEIM CEDEX	www.wallach-energies.fr

Consumption

Total consumption:	200.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	15 000 (Source: ADEME SER)
Number of pellet boilers sold 2008:	5 000 (Source: ADEME SER)
Total number of pellet stoves (2007):	49.000 (Source: ADEME SER)
Number of pellet stoves sold 2007:	13.000 (Source: ADEME SER)

Price development

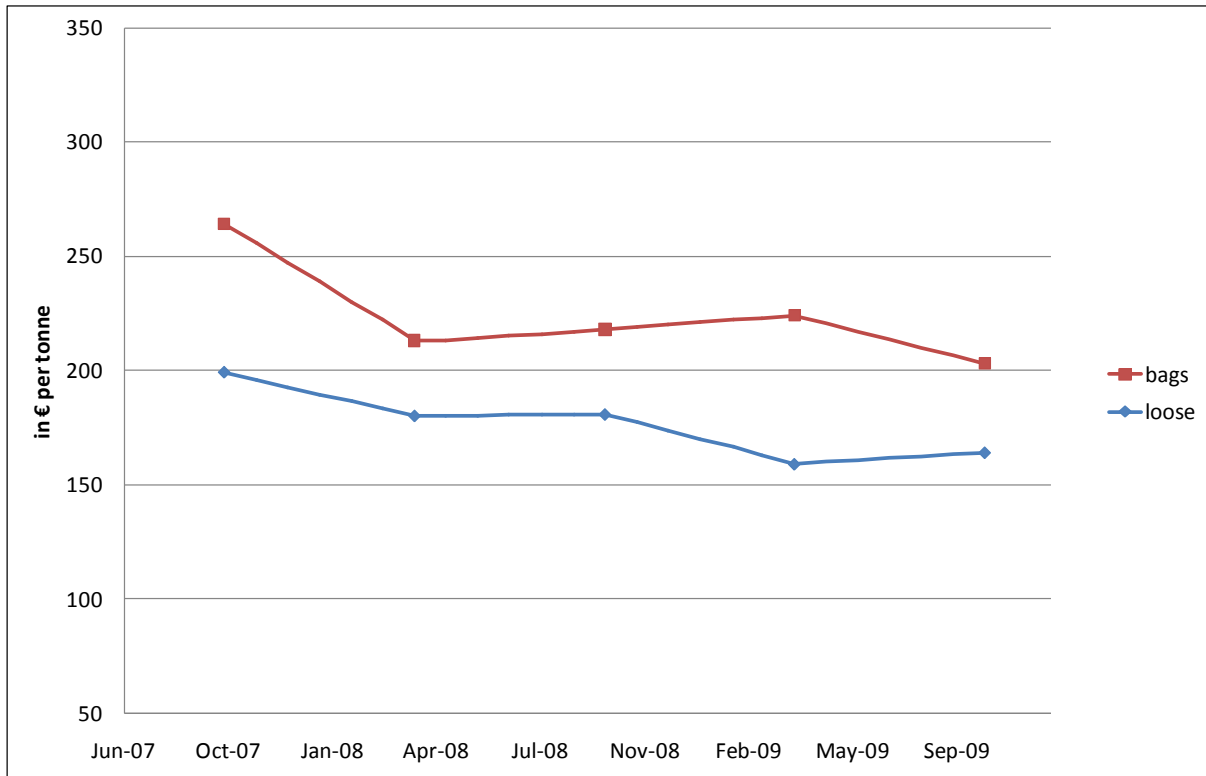


Figure A.10: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 70 km; incl. VAT 5,5%);
 -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 5,5%)
 Source: CEEB (part of FNB)

Pellets market in Germany

Production

Production capacity:	2.400.000 t/a
Real production:	1.460.000 t/a
National pellets standard:	DINplus, DIN 51731
Existing certificates:	DINplus (61), ÖNORM M 7135 (6)

List of producers:

Name of the company	City	www
Allspan GmbH Spanverarbeitung	Karlsruhe	www.allspan.de
ante-holz GmbH	Bromskirchen-Somplar	www.ante-holz.de
Anton Heggenstaller GmbH	Kühbach-Unternbach	www.heggenstaller.de
B&B Bioenergie GmbH	Calau	www.bioenergie-calau.de
Baust Holzbetriebs-GmbH	Eslohe-Bremke	www.baustholz.de
Bayerische Pelletwerke Kanak & Schwarz OHG	Böbrach	--
Bayerwald Pellet GmbH & Co. KG94209	Regen	www.holz-schiller.de
Bio-Energie Mudau GmbH & Co. KG	Mudau	www.bio-energie-mudau.de
Bioenergie Sonnen-Pellets GmbH	Buchenbach	www.bioenergie-sonnen-pellet.de
BioPell GmbH	Empfingen	www.biopell.de
BK Bioenergie GmbH Brennstoffwek Kehl	Heidelberg	www.pelletwerk-kehl.de
BSVG Biostoffverwertungsgesellschaft Klix GmbH	Großdubrau	www.bsvg-klix.de
CampacTec - Gesellschaft zur Kompaktierung nachwachsender Rohstoffe mbH & Co. KG	Straubing	www.1heiz-pellets.com
Drechserei Spiegelhauer oHG Pellinos Holzpellets	Pfaffrode-Hallbach	www.pellinos.de
Emil Steidle GmbH & co. KG	Sigmaringen	www.steidle.de
Energiepellets Hosenfeld	Hosenfeld	www.saegewerk-hosenfeld.de
Energiepellets Oberhonnefeld GmbH	Oberhonnefeld-Gierend	www.energiepellets.net
Enus NaturPower GmbH & Co. KG	Titz Ameln	www.enus.de
EPC	Torgau	www.epc-deutschland.de
EVS GmbH & Co. KG	Hengersberg	www.saegewerk-schwaiger.de
FireStixx Hartleitner GmbH & Co. KG	Ziertheim	www.firestixx-hartleitner.de
FP Franken-pellets GmbH & Co. KG	Stadtsteinach	www.frankenpellets.de
German Pellets GmbH	Wismar	www.german-pellets.de
Glechner Ges. m. b. H. und Co. KG	Simbach a. Inn	www.holzpellets.com
Gregor Ziegler GmbH	Plößberg	www.thermospan.de
Haas Fertigtbau GmbH	Falkenberg	www.haas-holzindustrie.com
Holz Schiller GmbH	Regen	www.holz-schiller.de
Holzhandlung Theodor herbert GmbH & Co. KG	Motten	www.herbert-motten.de
Holzindustrie Schlitz GmbH & Co. KG	Schlitz	www.holzindustrie-schlitz.de
Holzkontor und Pelletierwerk Schwedt GmbH	Fürstenberg	www.hps-pellets.de
Industriepark Offenbach	Offenbach	www.pellet-rheinmain.de
InEnergie GmbH & Co. Betreiber KG	Ingolstadt	www.inenergie.de
Iwo-Pellet Rhein.Main GmbH	Offenbach	www.pellet-rheinmain.de
JuraPellets GmbH & Co. KG	Ursensollen	www.jurapellets.de
juwi GmbH	Mainz	www.ljuwi.de
Landw. Trocknungsgesellschaft Neuhof a.d. Zenn	Neuhof a.d. Zenn	www.neuhof-eg.de

eG		
Leimholz Römer	Emskirchen	www.holzpellets24.de
Monnheimer-Holzwerk GmbH u. Co. KG	Grasellenbach	--
Naturenergie Ostalb eG	Bopfingen	www.naturenergie-ostalb.de
Neue Energie Gesellschaft mbH	Großenhain	www.neg-online.de
Pelltec GmbH	Sonsbeck	www.pelltec.de
Schneifel-Pellets Assenmacher	Ormont	www.schneifel-pellets.de
Sorpetaler Fensterbau GmbH & Co. KG	Sundern-Hagen	www.sorpetaler.de
Spessart Pellet GmbH & Co. KG	Aura im Sinngrund	www.spessart-pellets.de
Süd-Energie Bioplus GmbH	Monsheim	www.suedenergiebioplus.de
Trocknungsgenossenschaft Weißenburg eG	Ellingen	www.trocknung-ellingen.de
Tröger - Der Einrichter	Arzberg	www.troeger-der-einrichter.de
Unomondo Pellets GmbH & Co. KG	Mühlacker	www.unomondo.de
WEAG & Mohr GmbH & Co. KG Holz + Heizen	Trier	www.moselpellets.de
Westerwälder Holzpellets GmbH	Langenbach b. Kirburg	www.ww-holzpellets.de

Trade

List of wholesalers and retailers:

<http://www.carmen-ev.de/dt/energie/pellets/pelletliefer.html>

<http://www.bio-energie.de/index.php?id=359&tabelle=5&case=0>

Consumption

Total consumption:	900.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers and pellet stoves (2008):	140.000
Number of pellet boilers sold 2007:	6.000 (Source: Mudgal et al 2009)
Total number of pellet stoves (2007):	39.500 (Source: Mudgal et al 2009)
Number of pellet stoves sold 2007:	25.500 (Source: Mudgal et al 2009)

Price development

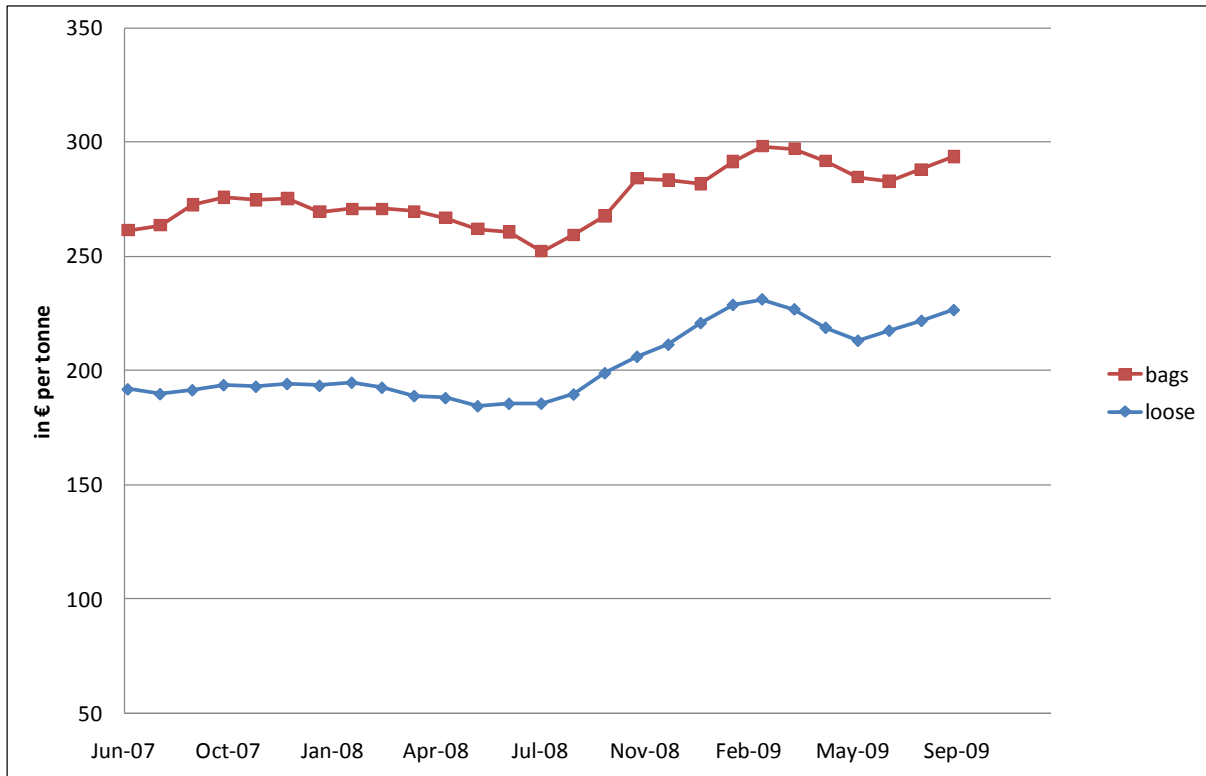


Figure A.11: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 7%);
 -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 7%)
 Source: CARMEN e.V. and DEPV

Pellets market in Greece

Production

Production capacity:	87.000 t/a
Real production:	28.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Agrop	Athens	www.agromulch.eu/mulch.html
Angelousis S.A.	Velesteino	--
Bioenergy Hellas Co	Larisa	www.bioenergyhellas.gr
MAKI SA	Larisa	--
SAKKAS SA	Karditsa	--

Trade

List of wholesalers:

Name of the company	City	www
Hellenic-pellets	Komotini	www.hellenic-pellets.gr

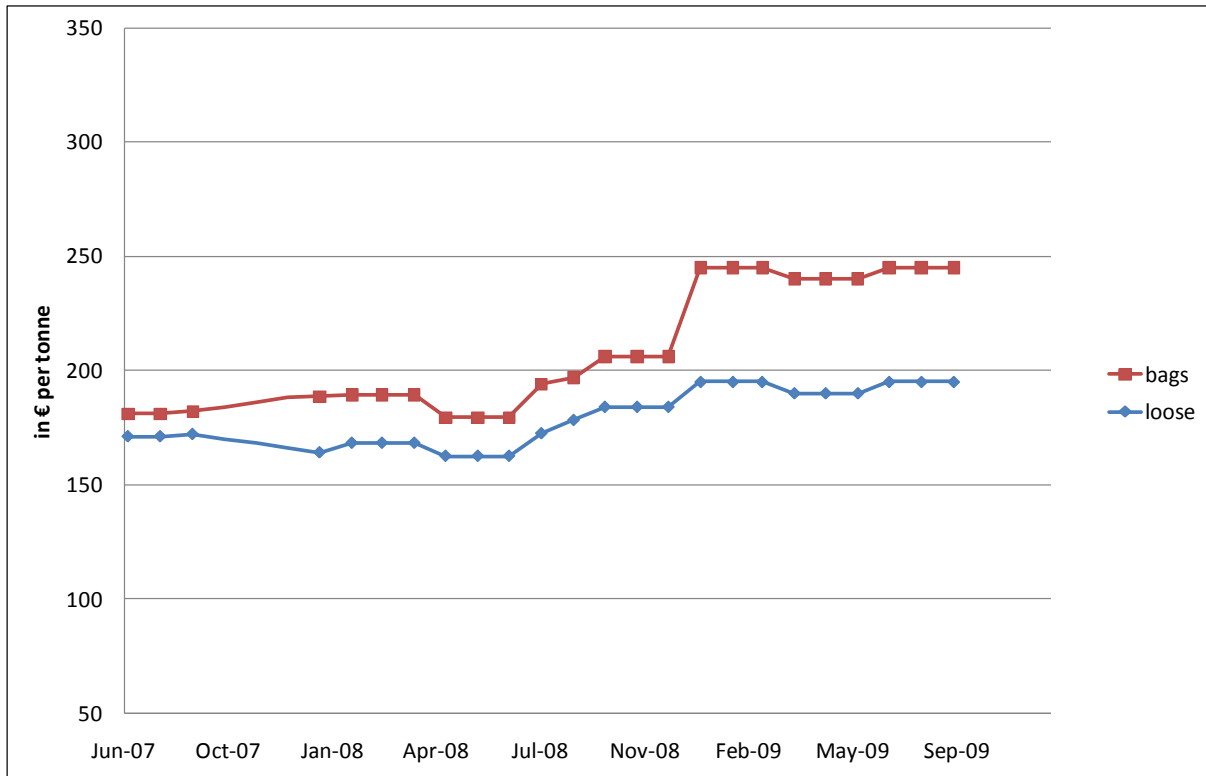
List of retailers:

Name of the company	City	www
Agrop	Athens	www.agromulch.eu/mulch.html
Angelousis S.A.	Velesteino	--
Bioenergy Hellas Co	Larisa	www.bioenergyhellas.gr
Hellenic-pellets	Komotini	www.hellenic-pellets.gr
MAKI SA	Larisa	--
SAKKAS SA	Karditsa	--

Consumption

Total consumption:	11.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development



**Figure A.12: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 19%);
 -) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 19%)
 Source: AUA – Agricultural University of Athens**

Pellets market in Hungary

Production

Production capacity:	5.000 t/a
Real production:	5.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
A-NRG ZRt	Budapest	www.a-nrg.hu
Energo Pellet	Gyöng	www.energo-pellet.hu
Fantázia Agrofa Kft.	Cegléd	--
Németh-Fa Kft	Lenti	www.nemeth-fa.hu
Pannon Pellet	Belezná	www.pannonpellet.hu
Pellet Produkt Kft.	Petőháza	www.pelletprodukt.hu
Raklap és Tüzép Kft.	Alsónémedi	www.hungaropellet.hu/content/hu/0000.htm

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
Europellet	Budapest	www.europellet.info
Pelletszolg Kft.	Szentendre	--
Zsófi Team Kft.	Miskolc	--
Globalstone	Páty	www.globalstone.hu
Pellet Hungary	Budapest	www.pellet.hu

Consumption

Total consumption:	1.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	2000
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	500

Price development

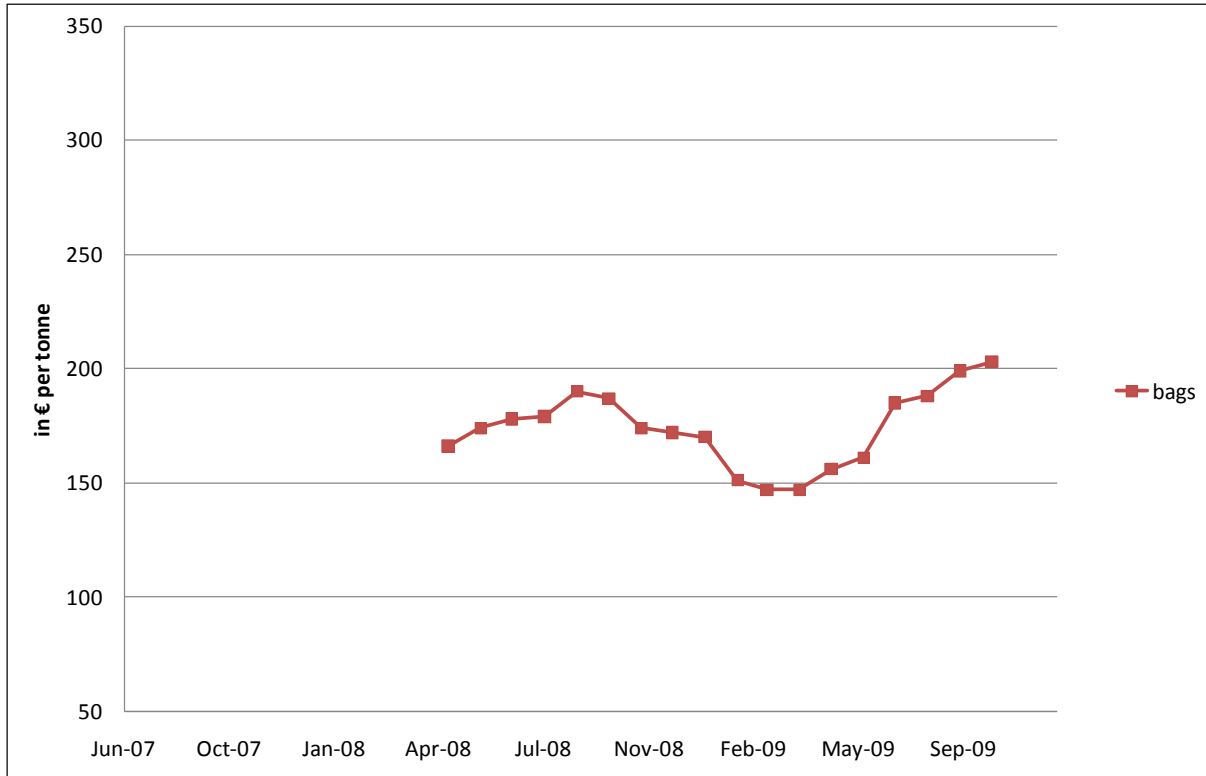


Figure A.13: -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 25%; 20% before 01.07.09)
 Source: GEONARDO

Pellets market in Ireland

Production

Production capacity:	78.000 t/a
Real production:	17.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
D Pellet Ltd	Kilkenny	www.dpellet.ie
Irish Wood Pellets	Co. Galway	www.irishwoodpellets.ie

Trade

List of wholesalers:

Name of the company	City	www
Clare Energy	Clare	www.clareenergy.ie
Western Bio Fuels	Galway	--

List of retailers:

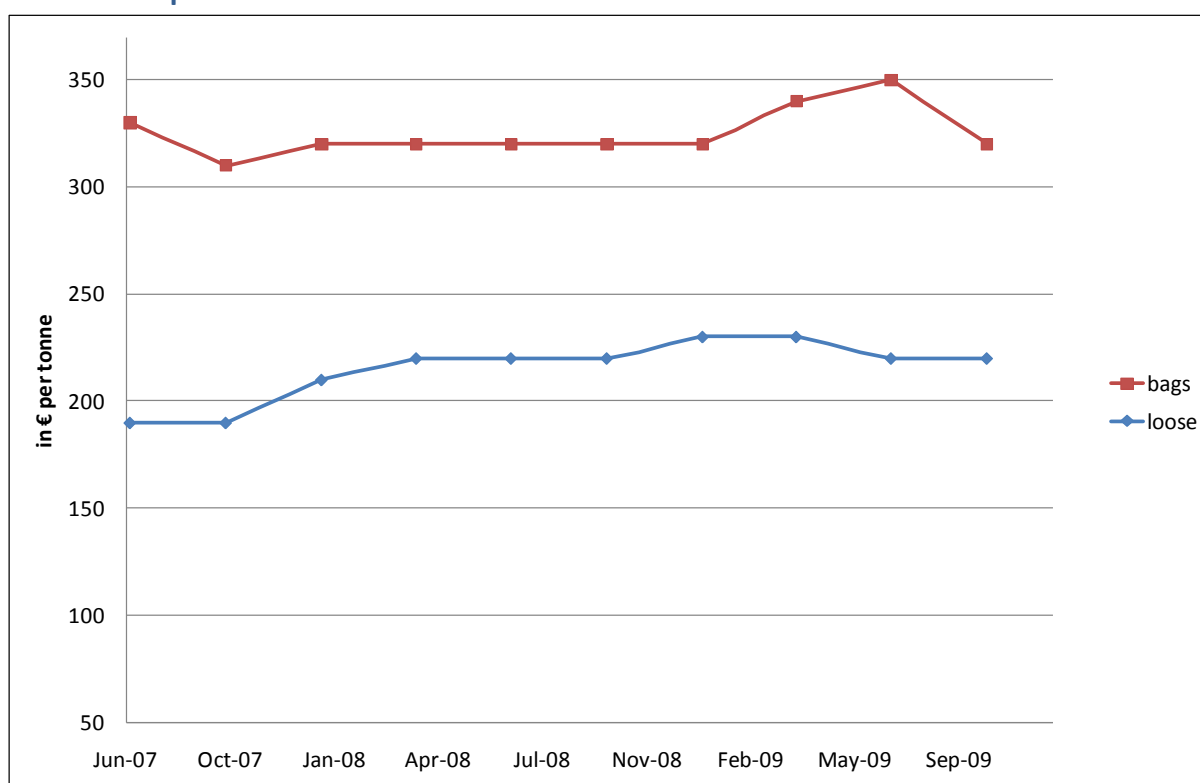
Name of the company	City	www
APS Energies	Galway	--
Blue Evolution	Dublin	www.blue-evolution.ie
C J Sheeran Ltd	Co Laois	www.timberfencinggates.ie
Clare Energy	Clare	www.clareenergy.ie
D Pellet Ltd	Kilkenny	www.dpellet.ie
DKS	Wexford	--
Donegal Heating & Plumbing	Donegal	--
Drummonds Ltd	Co Louth	--
Dublin Wood Pellets	Dublin	--
Eco Logic Solutions	Co. Mayo	www.ecologicalsolutions.ie
EcoBriquette	Carlow	www.ecoblocks.ie
Firestixx Ireland	Co Clare	www.firestixx.org
Fuel Merchant	Co Cork	--
Heatco Ireland	Wexford	www.heatcoireland.ie
Imperative Energy Ltd	Co Kildare.	www.imperativeenergy.ie
Irish Wood Pellets	Co. Galway	www.irishwoodpellets.ie
Jedcoe Manufacturing	Galway	www.jedcoe.com
Jem Distribution	Monaghan	--
Kedco Energy Group	Co Cork	www.kedco.ie
Kerry Biofuels	Tralee, Co Kerry	www.kerrybiofuels.ie
Laois Garden World	Co Laois	--
Louis McAuley	Meath	www.mcauleyrenewables.com
Martins Fuel	Galway	--
McDBP Ireland	Dublin	www.bioenergy.ie
Navan Coal Company	Meath	--
Ned Forge Ltd	Galway	--
P J McDaid & Sons	Donegal	--
Premier Castings	Co Laois	www.premiercastings.ie

Prime Energy Solutions	Athlone, Co Roscommon.	www.primeenergysolutions.ie
Radon Ireland	Co Cork	www.radonireland
Resolutions Ltd	Co. Meath	www.resolutions.ie
SmartHeat Ltd	Co. Longford	www.smartheat.ie
Solar Vision Ltd	Co. Laois	--
Stafford Fuels	Co Wexford	www.greenerfuels.ie
Suir Shipping	Wexford	--
The Stove Depot	Waterford	--
Timber Pro	Meath	--
Western Bio Fuels	Galway	--

Consumption

Total consumption:	30.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers and pellet stoves (2008):	4.000
Number of pellet boilers and pellet stoves sold 2008:	1.500

Price development



**Figure A.14: -) Quarterly average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 13,5%);
-) Quarterly average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 13,5%)**

Source: SEI - Sustainable Energy Ireland

Pellets market in Italy

Production

Production capacity:	750.000 t/a
Real production:	650.000 t/a
National pellets standard:	Pellet Gold
Existing certificates:	Pellet Gold (11), ÖNORM M7135 (1)

List of producers:

Name of the company	City	www
3 Erre B	Terni, Umbria	--
Antares energy s.r.l.	Napoli, Campania	--
Arcobaleno Ecologia e Calore	Ferrara, Emilia Romagna	--
Ardeco s.r.l.	Cremona, Lombardia	www.ardeco-srl.com
Beikircher Gruenland	Bolzano, Trentino Alto Adige	--
Belfuoco	Milano, Lombardia	--
Bini Fernando	Cremona, Lombardia	--
Biocalor	Pavia, Friuli Venezia Giulia	www.biocalor.it
Boffi srl	Milano, Lombardia	--
Braga s.p.a.	Casalmaggiore, Cremona, Lombardia	--
Buffoli Legnami	Brescia, Lombardia	www.buffoli-legami.com
C&B Calor s.r.l.	Milano, Lombardia	--
Celsa di Celsalonga G. c. s.n.c.	Foiano della Chiana, Arezzo, Toscana	--
Cogra 48	Mende	--
Colella Industria Legnami spa	Napoli, Campania	--
COUREN ENERGIA S.R.L	Prato, Tuscany	www.couren.it
Del curto s.r.l.	Lecco, Lombardia	www.greencolor.it
Denti Pierino di Denti Andrea & C. s.n.c.	Cortenova, Lecco, Lombardia	--
Ecoflame Commerciale s.r.l.	Mortegliano, Udine, Friuli Venezia Giulia	--
Ecogest	Rovigo, Lombardia	www.ecogestsrl.it
ECOLEGNO S.R.L.	Aquila, Abruzzo	www.ecolegnosrl.com
Ecologic Fire s.r.l.	Isernia, Molise	--
Elle Bi s.r.l.	Stabbia-Cerreto Guidi, Firenze, Toscana	--
Energiagri	San Miniato Basso, Pisa, Toscana	--
Energie2	Gailon-sur-Montcient, Aosta, Val d'Aosta	--
Energy Pellets s.r.l.	Riese Pio Decimo, Treviso, Veneto	www.amoke.it
Euro Pellets s.r.l.	Berlingo, Brescia, Lombardia	www.europelletsrl.it
Eventy Energie	Campotizzoro, Pistoia	www.eventyenergie.it
F.Ili Ragosa	Mercato San Severino. Salerno, Campania	--
Fontaine des auges SA	Gendrey, Aosta, Val d'Aosta	--

Friul Pellet s.r.l.	Capriva del Friuli, Friuli Venezia Giulia	www.friulpellet.com
Geminati s.r.l.	Cigole, Brescia, Lombardia	--
Gielle Imballaggi snc	Adrano, Catania, Sicilia	--
Gisacob s.r.l.	Montebello Vicentino, Vicenza, Veneto	--
Goppestein s.r.l.	Guidizzolo	--
Grillo Legno spa	Terzo, Alba, Piemonte	www.grillolegno.com
IG Wood	Barbariga, Brescia	www.igwoodpellet.it
Il Truciolo s.r.l.	Rovigo, Veneto	www.iltruciolosrl.it
In Pellet	Lagonegro, Potenza, Basilicata	--
Italtruciolo s.r.l.	Albareto, Modena, Emilia Romagna	www.italtruciolo.it
Itfire	Sassocorvaro, Pesaro-Urbino, Marche	--
Kaminella s.r.l.	Udine, Friuli Venezia Giulia	www.kaminella.it
La Ligne s.r.l. Truciolo	Pisa, tuscany	www.infopellet.it
La Pla. Fer. Cart.	San Benedetto del Tronto	www.laplafercart.it
La TiEsse s.r.l.	Treviso, Veneto	www.latiesse.it
LDM Pellet Piemonte s.r.l.	Rosta, Torino, Piemonte	www.ldmpellet.com
Legno Energia Soc. Coop. s.r.l.	Coltano, Pisa, Toscana	--
Legnopress	Quarrata, Pistoia, Toscana	--
Mabef s.r.l.	Cardano al Campo, Varese, Lombardia	--
Mancini F.lli s.n.c.	Matigge, Perugia, Umbria	--
Mepe s.r.l.	Torino, Piemonte	--
NORDPAN S.p.A.	Bolzano, Trentino Alto Adige	www.nordpan.com
Om Legno s.n.c.	Bardalona-San Marcello Pistoiese, Pistoia, Toscana	--
Pedemontana Legnami s.r.l.	Chiuppano, Vicenza	--
Priant s.p.a.	Vazzola, Treviso, Veneto	www.priant.com
Produttori Sementi Verona	Cognola ai colli, Verona	www.psvseed.com
Pulimars s.n.c	Nucleo Industriale Avezzano, L'aquila, Abruzzo	--
ROSSIKOL s.r.l.	Sambuceto, Chieti, Abruzzo	--
RP Pellets	Castellone, Cremona, Lombardia	www.nova-srl.com
RSE Pellets	Città di Castello	--
S.H.I.N.E. SOCIETA' HEAT ITALIA S.R.L.	Avellino, Campania	--
S.I.E.R. s.n.c.	Chiusa Di Pesio, Cuneo, Piemonte	--
San Benedetto s.r.l.	Salerno, Campania	--
Sartorilegno snc	Fondo, Trento, Trentino Alto Adige	www.sartorilegn.com
Savoie Pan SA	Tournon	--
Segatifriuli srl	Pavia di Udine, Udine, Friuli Venezia Giulia	--
SILMA Srl	Mallare, Savona, Liguria	www.allarini.it
SITTA s.r.l.	Udine, Friuli Venezia Giulia	www.sittasrl.com
Sofag	Arc Sous Cicon, Aosta, Val d'Aosta	--
Tagliaboschi	Frosinone, Lazio, Italia	--

Termocomposti Srl	Calvisano, Brescia, Lombardia	www.termocomposti.com
Thermopellet s.r.l.	Livorno, Toscana	--
Tribulini Armando e Domenico & C. snc	Urbania, Pesaro, Marche	--
Valpellet s.r.l	Ponte in Valtellina, Sondrio, Lombardia	--

Trade

List of wholesalers:

Name of the company	City	www
Avacom S.r.l.	Landriano, Pavia, Lombardia	www.avacom.it
BIESSE	Cancellara, Potenza, Basilicata	www.biesserl.com
C.I.P. Compagnia Italiana Pellet	Torino, Piemonte	www.cip-energia.it
DITTA DONADEI	Pratola Peligna, Aquila, Abruzzo	www.donadeiimballaggi.it
Ecowood	Vicenza, Veneto	--
F.Ili Rossi s.n.c.	Bergamo, Lombardia	--
GREGEN	Arezzo, Tuscany	www.gregen.com
LANZ s.r.l.	Rio di Pusteria, Bolzano, Trentino Alto Adige	--
R & B. s.r.l	Aosta, Val D'Aosta	--
Ronchiato s.r.l.	Vicenza, Veneto	www.ronchiato-legna.it
Toscana Pellet	Le Querci, Pistoia, Toscana	www.toscanapellet.it

List of retailers:

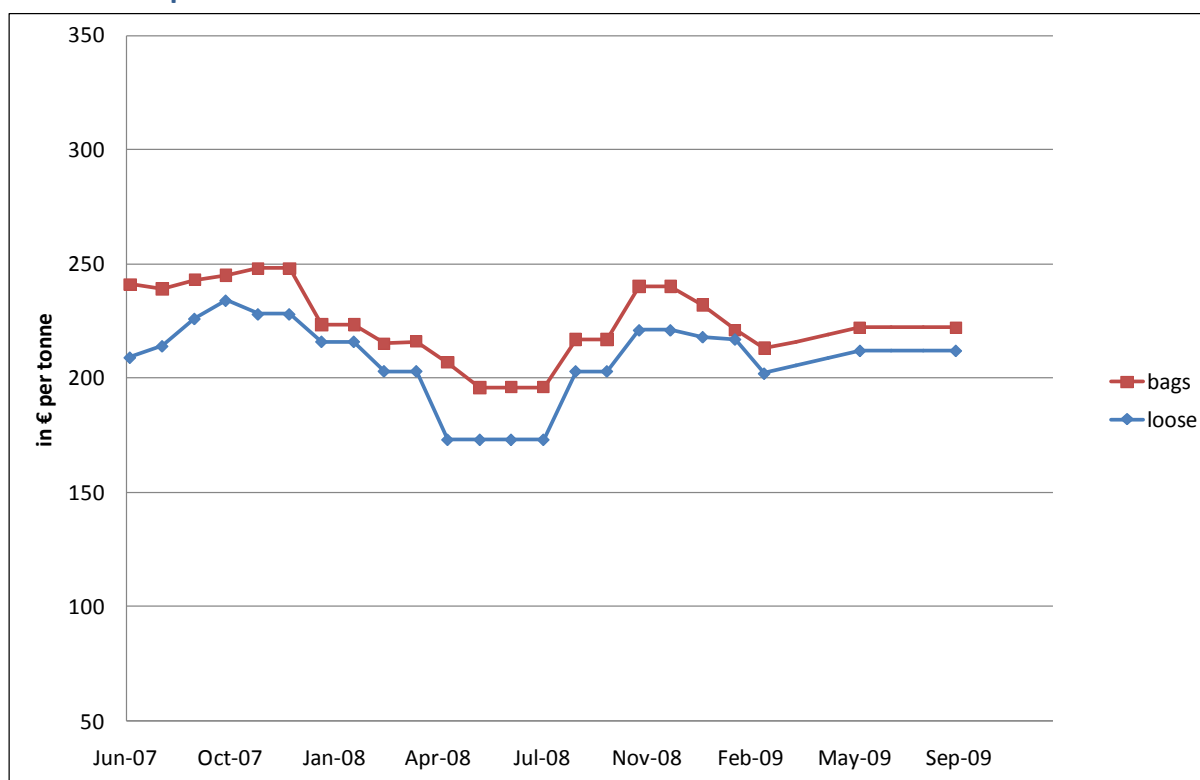
Name of the company	City	www
Il Truciolo s.r.l.	Rovigo, Veneto	www.iltruciolosrl.it
La TiEsse s.r.l.	Treviso, Veneto	www.latiesse.it
Biocalor	Pavia, Friuli Venezia Giulia	www.biocalor.it
C&B Calor s.r.l.	Milano, Lombardia	--
Del curto s.r.l.	Lecco, Lombardia	www.green calor.it
3 Erre B	Terni, Umbria	--
COUREN ENERGIA S.R.L	Prato, Tuscany	www.couren.it
ROSSIKOL s.r.l.	Sambuceto, Chieti, Abruzzo	--
S.H.I.N.E. SOCIETA' HEAT ITALIA S.R.L.	Avellino, Campania	--
R & B. s.r.l	Aosta, Val D'Aosta	--
LANZ s.r.l.	Rio di Pusteria, Bolzano, Trentino Alto Adige	--
Cr3 s.a.s	Trento, Trentino Alto Adige	--
Buffoli Legnami	Brescia, Lombardia	www.buffoli-legami.com
F.Ili Rossi s.n.c.	Bergamo, Lombardia	--
Caldaieabiomassa	Varese, lombardia	www.caldaieabiomassa.it
C.I.P. Compagnia Italiana Pellet	Torino, Piemonte	www.cip-energia.it
Amga Energia	San Muro Pascoli (FC), Emilia Romagna	www.amgaenergia.it
GREGEN	Arezzo, Tuscany	www.gregen.com
La Ligne s.r.l. Truciolo	Pisa, tuscany	www.infopellet.it
DITTA DONADEI	Pratola Peligna, Aquila, Abruzzo	www.donadeiimballaggi.it

IDEA CALORE	Benevento, Campania	--
Elea s.a.s	Mantinella di Albanella, Salerno, Campania	--
F.LLI RAGOSA	Mercato San Severino. Salerno, Campania	--
BIESSE	Cancellara, Potenza, Basilicata	www.biesserl.com
Toscana Pellet	Le Querci, Pistoia, Toscana	www.toscanapellet.it
Avacom S.r.l.	Landriano, Pavia, Lombardia	www.avacom.it
Vendita Pellet	Milano, Lombardia	www.vendita-pellet.com
Eco Pellet Group	Corciano, Perugia	www.ecopellet.it

Consumption

Total consumption:	850.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	>1.000
Number of pellet boilers sold 2007:	450 (Source: Mudgal et al 2009)
Total number of pellet stoves (2008):	800.000
Number of pellet stoves sold 2008:	270.000 (Source: Mudgal et al 2009)

Price development



**Figure A.15: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 10%);
-) Weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 10%)**

Source: ETA – Renewable Energies

Pellets market in Latvia

Production

Production capacity:	744.000 t/a
Real production:	379.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Graanul Invest	Launkalne	--
Kurzemes granulas LTD	Ventspils	--
Latgran SIA	Jaunjelgava	--
Latgranula	Incukalna, Riga	--
Nelss	Aizkraukle	--
SBE Latvia Ltd	Talsi raj	--
Lantmännen Agroenergi	Talsi	--
CED	Katrinkains, Cesu	--
Latgran	Jekabpils	--
Katlakalna	Latvia	--
Dekmeri	Baldone	--
Ekosource	Aluksne	--
Frix	Valmiera	--
Kokagentura	Lecava	--
Priedaines	Varaklani	--

Trade

List of wholesalers:

No information available.

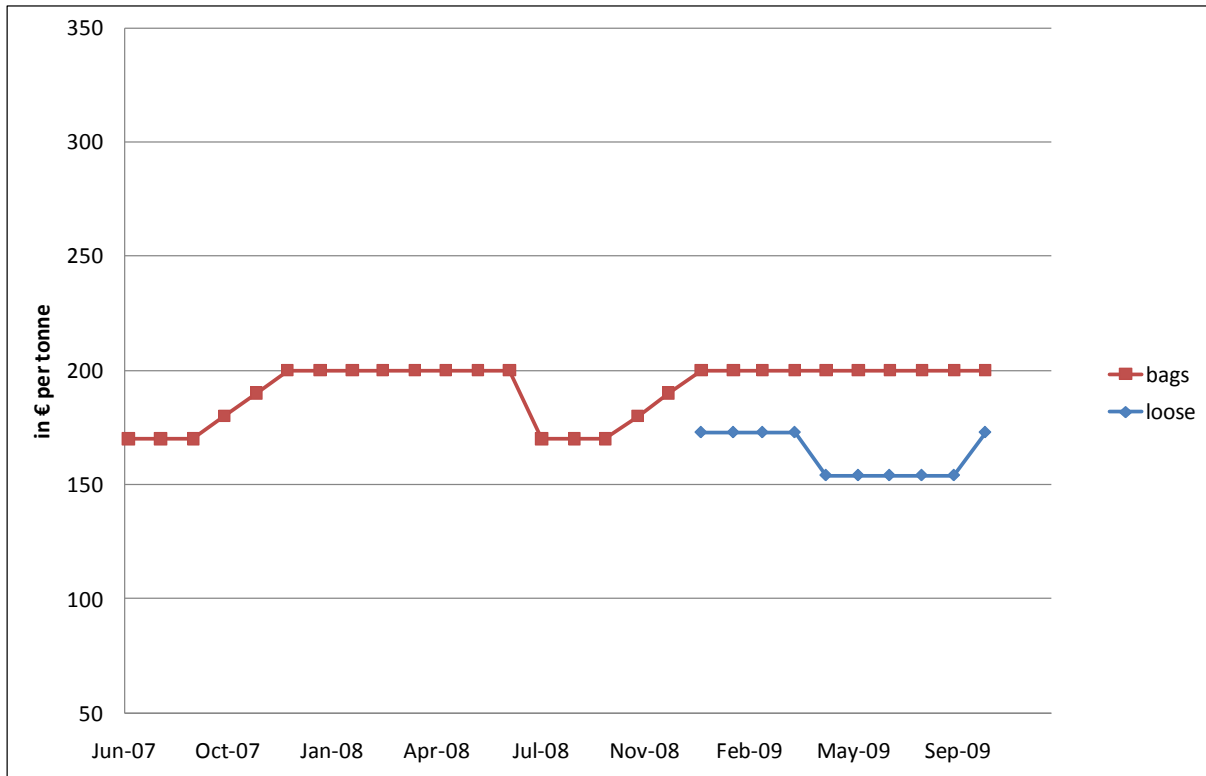
List of retailers:

No information available.

Consumption

Total consumption:	39.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development



**Figure A.16: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 18%);
 -) Average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 18%)
 Source: LETEK South Estonian Centre of Renewable Energy**

Pellets market in Lithuania

Production

Production capacity:	152.000 t/a
Real production:	120.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (2)

List of producers:

Name of the company	City	www
Baltwoods UAB	Grigiškės, Vilnius	--
Biodela UAB	Vilnius	--
Biofuelz UAB	Prienai	--
Gairėlita UAB	Radviliškis	--
Graanul Invest UAB	Alytus	--
Granulita UAB	Baisogala Radviliškio raj.	--

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	20.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

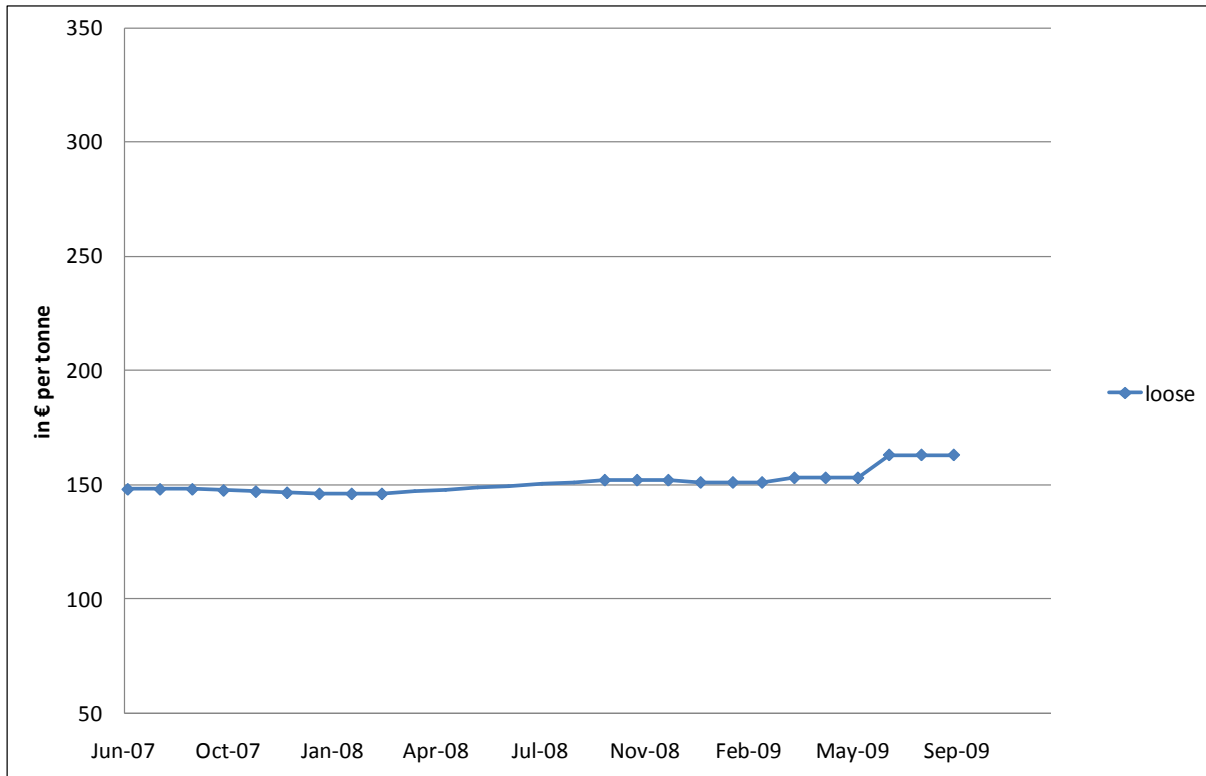


Figure A.17: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 18%);
 -) Weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 18%)

Source: LETEK South Estonian Centre of Renewable Energy

Pellets market in Luxembourg

Production

Production capacity:	0 t/a
Real production:	0 t/a
National pellets standard:	none
Existing certificates:	none

Trade

List of wholesalers:

Name of the company	City	www
Badger Pellets	Virton (B)	www.badgerpellets.com

List of retailers:

Name of the company	City	www
Die Dezentrale	Weiswampach	www.die-dezentrale.lu
Etablissement Hoffman Schwall	Alzingen	www.hoffmann-schwall.com
Glaesener Betz	Redange	www.glaesener-betz.lu
Husting & Reiser S.A.	Redange	www.husting-reiser.lu
Schmit Nico S.A.	Hoscheid-Dickt	www.nicoschmit.lu
Tubalux S.A.	Foetz	www.tubalux.lu
Walux Bioenergy S.A.	Beckerich	www.walux.lu
Gries Freres	Niederkom	www.griesfreres.com

Consumption

Total consumption:	5.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

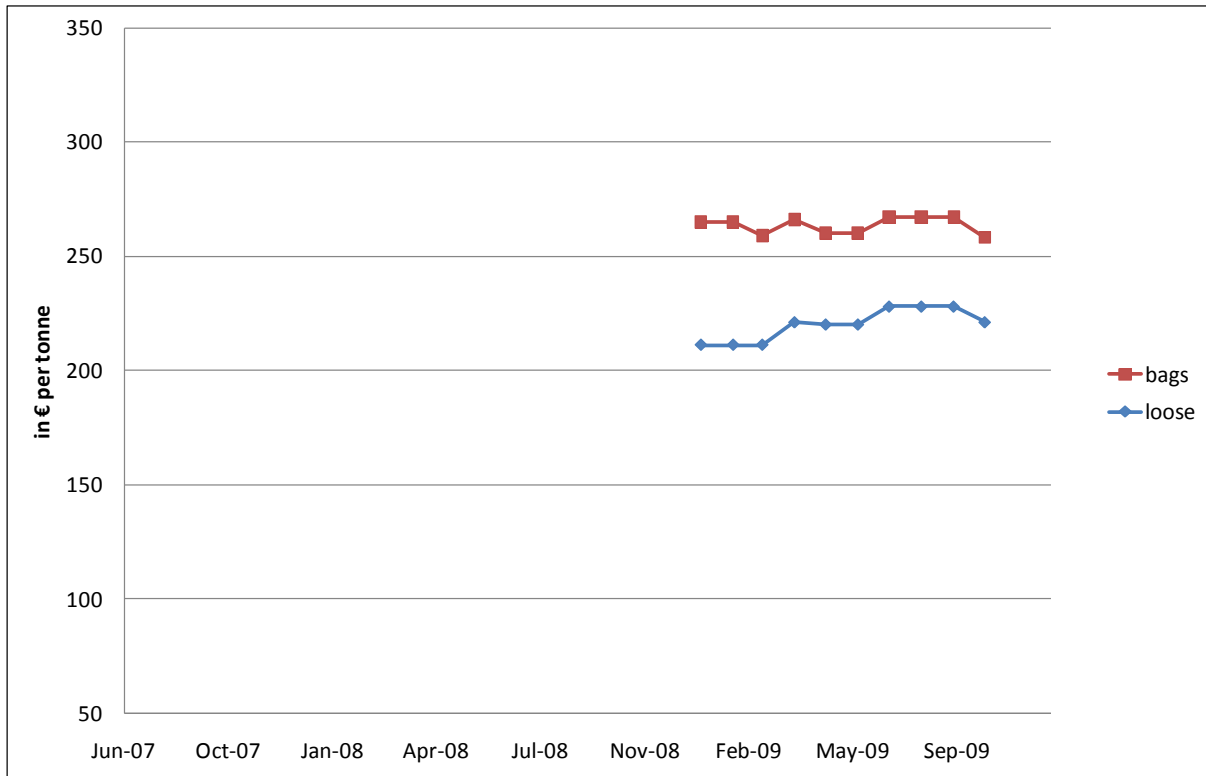


Figure A.18: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 15%);
 -) Weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 15%)

Source: UU – University Utrecht

Pellets market in Netherlands

Production

Production capacity:	130.000 t/a
Real production:	120.000 t/a
National pellets standard:	none
Existing certificates:	Green Gold Label, and industrial track-and trace certificate used by Essent, see http://certification.controlunion.com/certification/program/Program.aspx?Program_ID=19

List of producers:

Name of the company	City	www
Labeegroup	Moerdijk	www.labeegroup.com
Plospan	Waardenburg	www.plospan.nl

Trade

List of wholesalers:

Name of the company	City	www
GF Energy	Papendrecht	www.gfenergy.eu
Nidera	Rotterdam	www.nidera.nl
The Clean Energy Company	Utrecht	www.thecleanenergycompany.com
Van Leer Energy BV	Amsterdam	www.eduardvanleer.nl

List of retailers:

Name of the company	City	www
Brandenburg vof	Zelhem	www.houtpellethandel.nl
Broflame	Barneveld	www.broflame.nl
Comgoed BV	Dirksland	www.comgoed.nl
Green Orange Energy BV	Hoewelaken	www.go-greenorange.com
Indieco (Proflame)	Boxmeer	www.proflame.nl
Labeegroup	Moerdijk	www.labeegroup.com
Plospan	Waardenburg	www.plospan.nl

Consumption

Total consumption:	914.000 t/a
Large scale consumption:	876.000 t/a
Total number of pellet boilers:	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2007):	not known
Number of pellet stoves sold 2007:	not known

List of large scale users (> 3000 t/a) – electricity companies:

Name of the company	City	www
Delta Energie	Middelburg	www.delta.nl
Electrabel Nederland	Zwolle	www.electrabel.nl
EoN Benelux BV	Rotterdam	www.eon-benelux.com
Essent (Trade)	Arnhem	www.essenttrading.com
NUON	Amsterdam	www.nuon.com

Price development

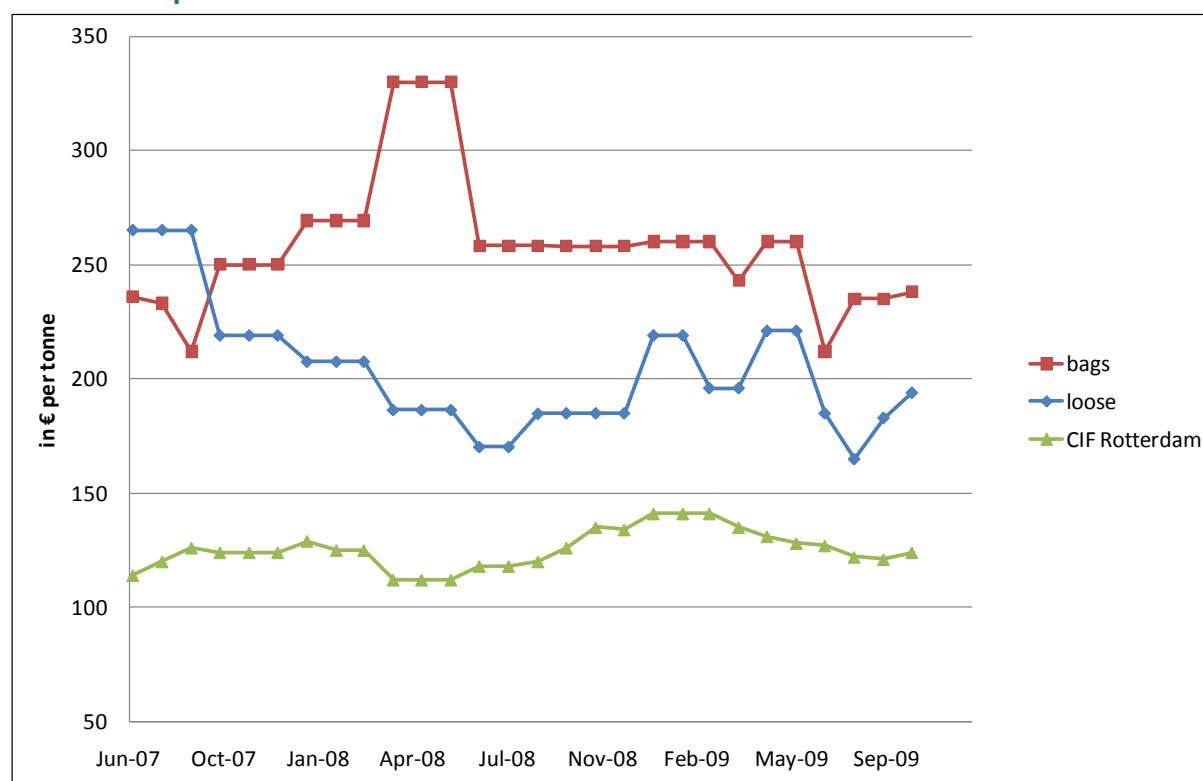


Figure A.19: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 19%);
 -) Weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 19%)
 -) Weighted average prices of bulk pellets for large scale power production (CIF ARA, excluding VAT) until November 2008; afterwards index prices of Endex (see section 2 Methodology)
 Source: UU – University Utrecht, Endex

Pellets market in Norway

Production

Production capacity:	164.000 t/a
Real production:	35.000 t/a
National pellets standard:	NS 3165 Edition 1 (1999)
Existing certificates:	none

List of producers:

Name of the company	City	www
BioWood Norway AS	Averøy	www.biowood.no
Forforedling AS	Levanger	www.forforedling.no
GRAN TRE ANS	Jaren	www.grantre.no
Hallingdal Trepellets	Ål	www.hallingdaltrepellets.no
Merpellets AS	Meråker	-
Möre Biovärme AS	Ikornes	-
Norsk Pellets Vestmarka AS	Vestmarka	www.norskpellets.com
Statoil Trepellets AS	Brumunddal	www.statoil.no
Vi-Tre AS	Røros	www.vi-tre.no

Trade

List of wholesalers and retailers:

http://www.nobio.no/index.php?option=com_bransje&Itemid=114

Consumption

Total consumption:	40.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers:	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2007):	not known
Number of pellet stoves sold 2007:	not known

Price development

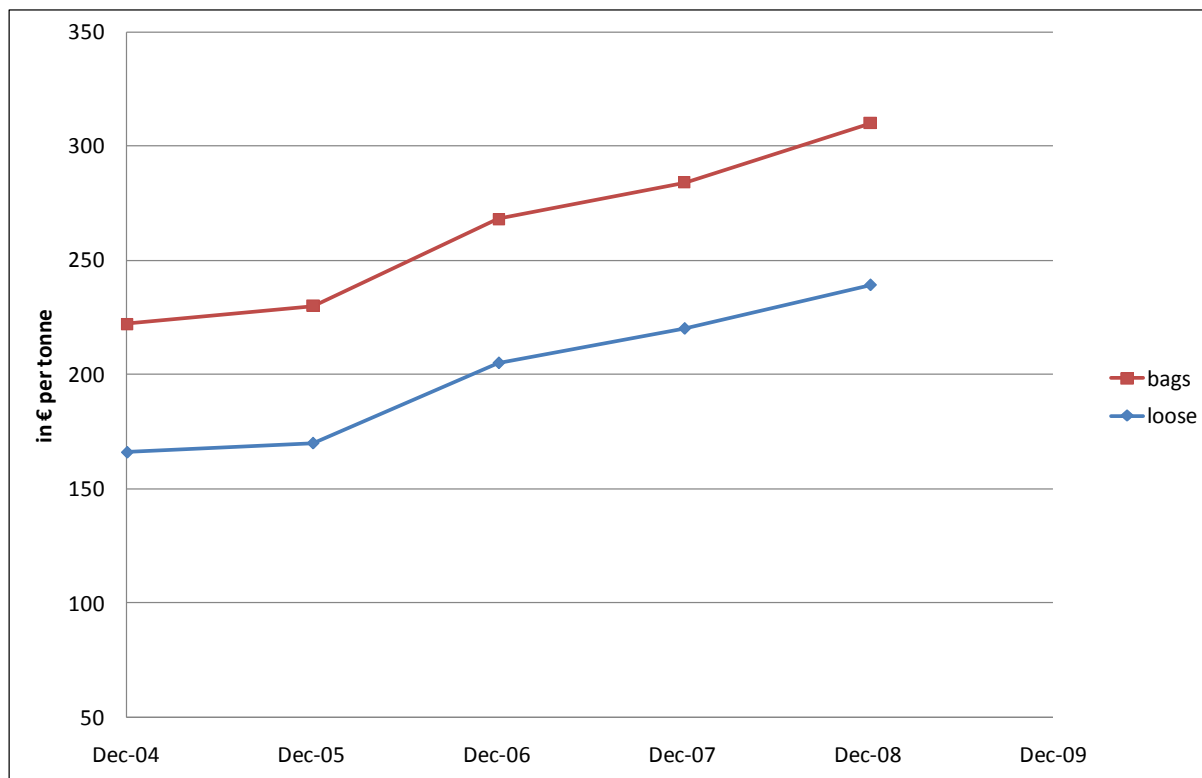


Figure A.20: -) Annual weighted average price/tonne wood pellets delivered as loose (excl. transport; incl. VAT 25%);
 -) Annual weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 25%)
 Source: NOBIO

Pellets market in Poland

Production

Production capacity:	674.000 t/a
Real production:	340.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (2)

List of producers:

Name of the company	City	www
Arno - Eko	Szczecin	www.arnoeko.pl
Barlinek	Barlinek	www.barlinek.com.pl
BIOPAL	Maszewo	www.biopal.com.pl
BRYTPOL s.c.	Mniszków	--
EKO-ORNETA	Orneta	www.eko-orneta.pl
EKOPAL	Pisz (Jagodne)	www.ekopal.pl
EMG Sp. z o.o. (Ekologiczne Materiały Grzewcze)	Szepietowo	www.emg.com.pl
Greenfield Polska Sp. z o.o.	Szczecin	--
Liberio F.H.U.	Kuczbork	www.pelet.eu
Max-Parkiet Sp. z o.o.	Żuromin	www.maxparkiet.com.pl
Mirosław Kaminski PPHU	Grajewo	--
MOTOWERK Zbigniew Misiarz	Mielec	www.multiverk.prv.pl
PELLET-ART sp. z o.o.	Torzyn	www.pellet-art.pl
Pellety Kozienice	Kozienice	www.pelletykozienice.pl
PPHU Ekomir Import - Export	Gdynia	www.ekomir.com.pl
PPHU FU-WI export-import sp. z o.o.	Elbląg	www.fuwi.pl
Regionalna Agencja Poszaniowania Energii	Kup	--
Stelmet S.A.	Zielona Góra	www.stelmet.com
SYLVA Sp. z o. o	Wiele k. Kościerzyny	www.sylvadrewno.com
Tartak "OLCZYK" Ludwik Olczyk	Krasocin	www.tartakolczyk.com.pl
TASK Marek Tasiemki, Zbigniew Skrzypczak	Kiszkowo	www.pelet.pl
Vapo sp. z o.o.	Toruń	www.vapo-poland.pl

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
Arno - Eko	Szczecin	www.arnoeko.pl
Barlinek	Barlinek	www.barlinek.com.pl
BIOPAL	Maszewo	www.biopal.com.pl
BRYTPOL s.c.	Mniszków	--
EKO-ORNETA	Orneta	www.eko-orneta.pl
EKOPAL	Pisz (Jagodne)	www.ekopal.pl
EKOPELLETS	Rumia	www.ekopellets.pl
EMG Sp. z o.o. (Ekologiczne Materiały Grzewcze)	Szepietowo	www.emg.com.pl
FAPEL Sp. z o.o.	Wrocław	--

FUREL	Łódź	www.pellet.furel.pl
Libero F.H.U.	Kuczbork	www.pelet.eu
Max-Parkiet Sp. z o.o.	Żuromin	www.maxparkiet.com.pl
Mirosław Kaminski PPHU	Grajewo	--
MOTOWERK Zbigniew Misiarz	Mielec	www.multiverk.prv.pl
NeoTermo	Białe Błota	www.neotermo.pl
NORDWIT Lech Kowalewski	Chodzież	www.paliwadrzewne.pl; www.woodfuels.eu
P.H. BESTPOL	Zielona	--
PELLET-ART sp. z o.o.	Torzyn	www.pellet-art.pl
PPHU Ekomir Import - Export	Gdynia	www.ekomir.com.pl
PPHU Fabich	Drawsko Pomorskie	--
PPHU FU-WI export-import sp. z o.o.	Elbląg	www.fuwi.pl
PUH DYTRYCH Sp z o.o. (no contact)	Łódź	www.elewacje-dytrych.lodz.pl
Radmar Ekoenergia	Czempień	www.radmar-ekoenergia.pl
Regionalna Agencja Poszaniowania Energii	Kup	--
Stelmet S.A.	Zielona Góra	www.stelmet.com
SYLVA Sp. z o. o	Wiele k. Kościerzyny	www.sylvadrewno.com
Tartak "OLCZYK" Ludwik Olczyk	Krasocin	www.tartakolczyk.com.pl
TASK Marek Tasiemki, Zbigniew Skrzypczak	Kiszkowo	www.pelet.pl
Vapo sp. z o.o.	Toruń	www.vapo-poland.pl

Consumption

Total consumption:	120.000 t/a
Large scale consumption:	not known
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

List of large scale users (> 3000 t/a):

Name of the company	City	www
„Rybnik” power plant	Rybnik	www.elektrownia.rybnik.pl
„Kraków” CHP plant	Kraków	www.eckrakow.pl
„Kogeneracja” CHP plants	Wrocław	www.kogeneracja.com.pl
„Turów” power plant	Bogatynia	www.elturow.bot.pl
„Wybrzeże” CHP plants	Gdańsk, Gdynia	www.ecwybrzeze.pl

Price development

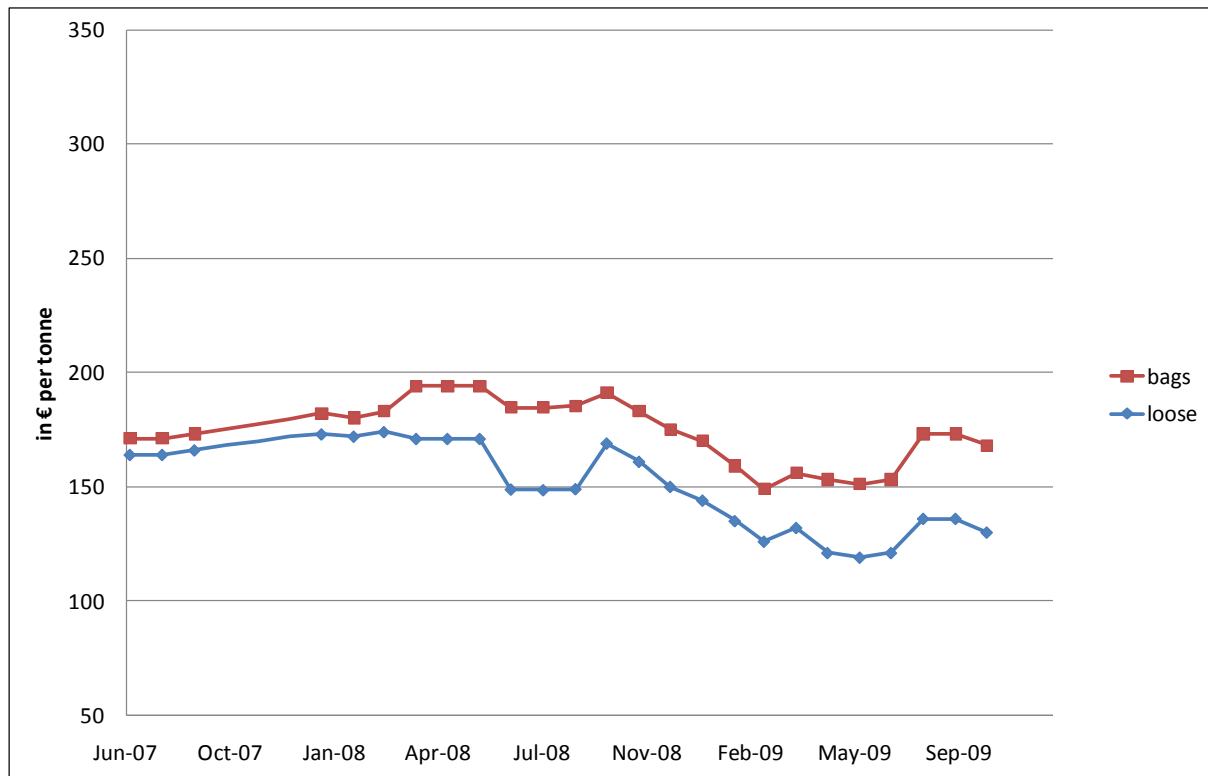


Figure A.21: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 22%);
 -) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 22%)
 Source: BAPE - Bałtycka Agencja Poszanowania Energii

Pellets market in Portugal

Production

Production capacity:	400.000 t/a
Real production:	100.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Biomad Energias Renovavies	Lousada	--
Enermontijo	Pegeos	--
Pellets Power	Viseu	--
Junglepower	Porto	--
Pellets Power 2	Setubal	--
Biobriquete	Quimbres	--

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	10.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development (*no information available*)

Pellets market in Romania

Production

Production capacity:	260.000 t/a
Real production:	114.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (3), ÖNORM M 7135 (1)

List of producers:

Name of the company	City	www
Ameco Renewable Energy SRL	Gheorgheni (Jud. Harghita)	www.ameco.ro
Csillag SRL	--	www.woodfuel.ro
DAN PROLEMN SRL	Ibanesti (Jud. Mures)	--
ECO LEMN PRODUCTS (PIN GROUP CORPORATION)	Caransebes (Jud. Caras-Severin)	www.ecolemn.info
Frijo Transilvania	Cluj-Napoca	www.frigotransilvania.ro
Gala Comtrade SRL	Borsec	www.gcomtrade.com
Mark ! It production	Bucuresti	--
MONKATRADE INTERNATIONAL SRL	Galati	--
Pellet Harghita SRL	Vlahita (Jud. Harghita)	www.pellet.ro
Phoenix Company S.A.	Miercurea Ciuc	www.phxcompany.ro
Rompelet SRL	Ramnicu Valcea	www.rompelet.ro
S.C. ABC Trend Cervice SRL	Constanta	--
S.C. Holzindustrie SCHWEIGHOFER Srl.	Sebes/ Alba	www.schweighofer.ro
Salomone ambalaje	Babeni	--
SC ECOPELLETS SRL	--	www.ecopellets.ro
SC Industry Transilvan SRL	Gheorgheni (Jud. Harghita)	www.transilvan.ro
SC NEVAL SRL	Zetea (Jud. Harghita)	--
R & R Harghita	Sanraieni (Jud. Harghita)	www.schweizer-pellet-ag-com
Transyl-Bau Construct & Pellet SRL	--	www.biomass-pellet.eu
Transylpellet SRL	Mugeni (Jud. Harghita)	www.pellet.ro
Unicom Wood Production	Rosiorii de verde	www.unicom-group.ro

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
Ameco Renewable Energy SRL	Gheorgheni	www.ameco.ro
Mark ! It production	Bucuresti	--
Pellet Harghita SRL	Vlahita	www.pellet.ro
R & R Harghita	Sanraieni	www.schweizer-pellet-ag-com
Transylpellet SRL	Mugeni	www.pellet.ro
Unicom Wood Production	Rosiorii de verde	www.unicom-group.ro

Consumption

Total consumption:	25.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	<1.000
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

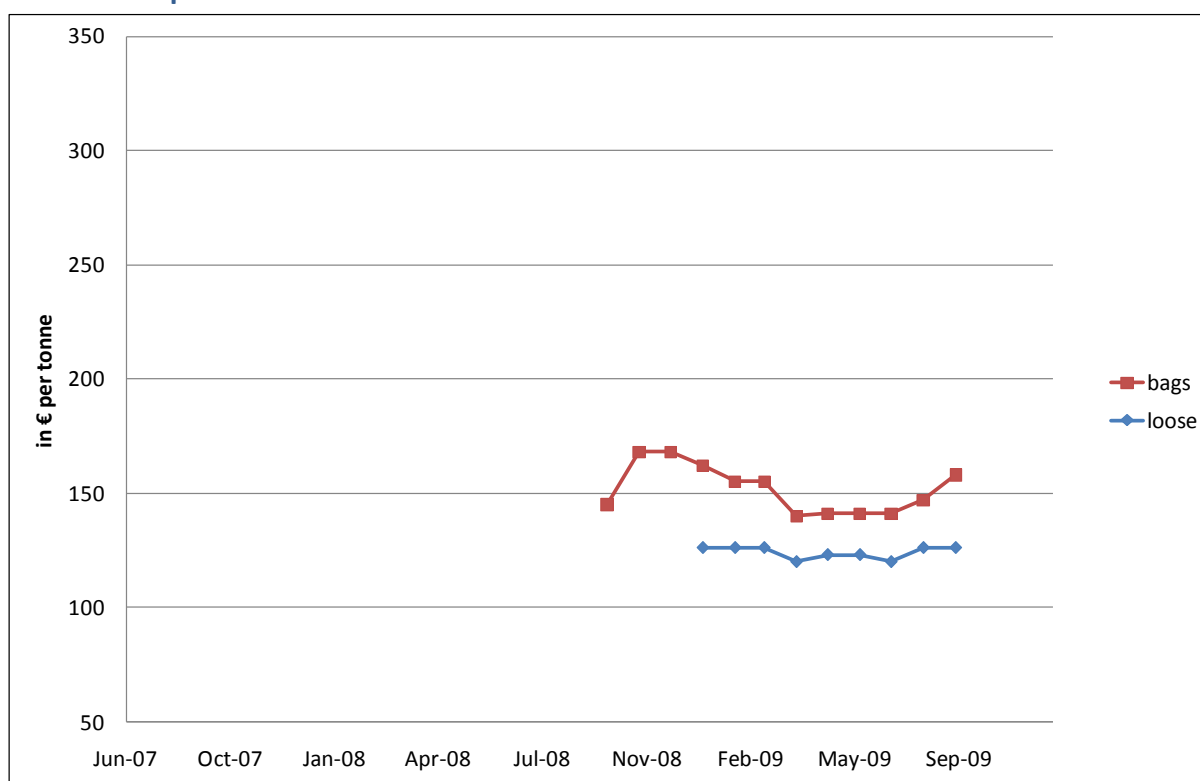


Figure A.22: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 19%);
 -) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 19%)
 Source: HFA - Holzforschung Austria

Pellets market in Slovakia

Production

Production capacity:	142.000 t/a
Real production:	117.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (1)

List of producers:

Name of the company	City	www
AMICO Drevo	Oravsky Podzamok	--
AVS Plus	Bratislava	--
BIMPEX s.r.o.	Prešov	www.bimpex.sk
BIOMASA	Kysucký Lieskovec	www.biomasa.sk
DREVOMAX	Rajecké Teplice	www.drevomax.sk
EKODRIM s.r.o.	Kosice	--
HELIOPLAST, s.r.o.	Ludanice	--
ITALIAN DESIGN S.R.O.	Trencin	www.italiandesign.sk
JUGI	Lučenec	www.jugi.sk/
KONSKA	Konska	--
KT SERVIS, s.r.o.,	Banská Bystrica	www.ktservis.sk
MT PELET, spol. s.r.o.	Závažná Poruba	www.peletky.eu
PALIENERGY	Sladkovicovo	--
PFA Lozorno	Lozorno	--

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	18.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development (*No information available*)

Pellets market in Slovenia

Production

Production capacity:	185.000 t/a
Real production:	154.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
GGP »ENERLES	Pivka,	www.enerles.si
MADJ d.o.o.	Cerknica/Martinjak	--
Mizarstvo Kovac d.o.o.	Mozirje	www.mizarstvo-kovac.com/index.html
PROFILES	Razdrto	--

Trade

List of wholesalers:

Name of the company	City	www
BIODOM	Kozina	www.biodom27.si
ENERLES d.o.o.	--	--
Istrabenz - Gorenje	Nova Gorica	www.istrabenz.si
LINDAP d.o.o.	Gonilsko	www.lindap.si/
Peleti-Expres doo	Škofja Loka	www.peleti.com
Profilles	--	--

List of retailers:

Name of the company	City	www
BIOMASA	Solcava	www.biomasa.si/
ETIKS d.o.o.	Štore	www.etiks.si

Consumption

Total consumption:	112.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	not known
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development *(No information available)*

Pellets market in Spain

Production

Production capacity:	250.000 t/a
Real production:	100.000 t/a
National pellets standard:	none
Existing certificates:	DINplus (1)

List of producers:

Name of the company	City	www
BIOGAR	Leguitano, Alava	www.biogar.es
BIOTERM AGROFORESTAL S.L.	Cordoba	www.bioterm.es
CARSAN BIOCOMBUSTIBLES	Granada	--
COMPANIA GENERAL DE CARBONES	Cadiz	--
ECOFORREST	Vigo	www.ecoforest.es
ECOWARM S.L.	Brion, la Coruna	www.ecwarm.es
EMPA S.A.	Navarra	--
ENERLOGICA	Toledo	--
ENERPELLET S.L.	Muxika	www.enerpellet.com
GABINETE TECNICO SOLY AGUA	Granada	www.solyagua.es
MB CARBONES	Madrid	--
RECUFOREST S.L.	Cruilles	--
RECYCLADOS LUCENA S.L.	Lucena, Cordoba	www.recicladados.com
RESIFOR	la Coruna	--

Trade

List of wholesalers:

No information available.

List of retailers:

Name of the company	City	www
BIERZOCONFORT, S.L.	Leon	www.caryse.com
BIOGAR	Leguitano, Alava	www.bioterm.es
BIOTERM AGROFORESTAL S.L.	Cordoba	www.caryse.com
CARYSE S.L.	Madrid	www.grupo-cgc.com
CGC BIOMASA	Madrid	www.importtex.com
COMPANIA GENERAL DE CARBONES	Cadiz	www.pmv.com.es
E2 TRADER & CONSULTING	Sevilla	www.grupoagrosa.com
ECOFORREST	Vigo	--
ECOTRANS Transformaciones ecologicas, S.L.	Jadraque	--
RECUFOREST S.L.	Cruilles	www.biogar.es
SERVICIOS LOGISTICOS MEDIO AMBIENTALES	Badajoz	www.ecoforest.es

Consumption

Total consumption:	10.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2007):	600-700
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	not known
Number of pellet stoves sold 2008:	not known

Price development

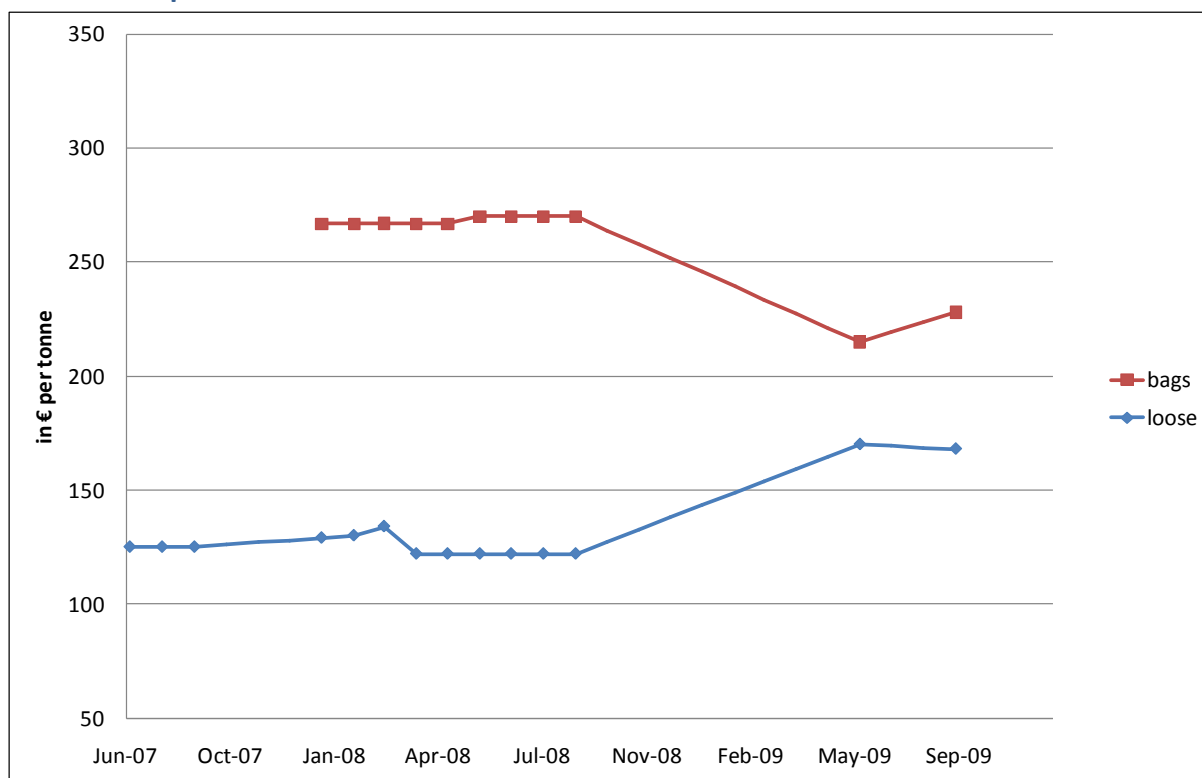


Figure A.23: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 16%);
 -) Weighted average price/tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 16%)

Source: ETA – Renewable Energies

Pellets market in Sweden

Production

Production capacity:	2.200.000 t/a
Real production:	1.405.000 t/a
National pellets standard:	SS 18 71 20
Existing certificates:	none

List of producers:

Name of the company	City	www
Alfta Skogstekniska Maskinskola AB	Alfta	--
Älvdals Bygg AB	Älvdalen	--
Ängbo Såg o Hyvleri o Pellets	Rengsjö	--
Bäckebrons Sågverk	Bäckebron	--
Baro Wood AB	--	www.baro.se
Bennsätters Sågverk AB	Eringsboda	--
Bioenergi Böta Kvarn	Böta, Långemåla	--
Bioenergi i Luleå AB	Luleå	www.bioenergilulea.se
BooForsjö AB	Katrineholm	www.booforsso.se
Börjes Pellets AB	Torestorp	--
Bure Pellets AB	Bureå	--
Dalarna Lumber Hyvleri AB	Linghed	--
Dalsjö Energi AB	Ankarsrum	--
Dejträ AB	Deje	--
Derome Bioenergi AB	Veddige	www.derome.se
Fågelfors Hyvleri	Fågelfors	--
Femett Pellets AB	Nordmaling	--
Föllinge Golv	Föllinge	--
Fredells Trävaru AB	Nacka	--
Glommers Miljöenergi AB	Glommersträsk	--
Gotlands Värmepellets AB	Klintehamn	--
Hällefors Ekobriketter AB	Hällefors	--
Hälleforsnäs Sågverk AB	Hälleforsnäs	--
Hällerums Trävaru AB	Hällerum	--
Helsinge Pellets AB	Edsbyn	www.helsingepellets.se
HMAB	Sveg	www.hmab.se
Hyvelkompaniet	Kisa	--
JG Anderssons Söner AB	Linneryd	--
Johannisberg Trä & Pall AB	Säter	--
Kastebergs Gård	Ljungby	--
Killebergs Pelletsfabrik	Killeberg	--
Knäredssågen AB	Knäred	--
Komponentverken	Krokom	--
Lantmännen Agroenergi AB	Huskvanar	www.agrol.se
Lantmännen Agroenergi AB	Norberg	--
Lantmännen Agroenergi AB	Ulricehamn	--
Lantmännen Agroenergi AB	Malmbäck	--
Lantmännen Agroenergi AB	Sölvesborg	--
Lantmännen Lantbruk	Ystad	--
Läppe Pellets	Läppe	--
Laxå Pellets AB	Röfors	www.laxapellets.se

Lövhässjan	Stugun	www.jamtlamell.se
MBAB Energi	Robertsfors	--
Mockfjärds Biobränsle AB	Mockfjärd	www.dalapellets.se
Munkebo Lantbruks AB	Hjo	--
N T Pelletsfabrik	Bergkvara	--
Neova AB	Jönköping	www.neova.se
Neova AB	Vaggeryd	--
Neova AB	Forsnäs	--
Neova AB	Främlingshem	--
Neova AB	Ljusne	--
Nordupplands Pellets	Skutskär	--
Norrlands Trä AB	Älandsbro	www.norrlands.com
Nybro Pelletsfabrik	Nybro	--
Ölmstad Träförädling AB	Ölmstad	--
Olssons Bioenergi	Färila	--
Pajala Bioenergi	Pajala	--
Pelab Pellets AB	Nås	--
Plane Wood in Sweden	Ljungbyhed	--
PO Hiller Trävaror	Runhällen	--
Rindi Älvdalen AB	Älvdalen	--
Rindi Västerdala AB	Vansbro	--
Sågverksassistance AB	Svanskog	--
Sävsjö Träbränsle	Sävsjö	--
SCA BioNorr AB	Härnösand	www.bionorr.com
SCA BioNorr AB	Stugun	--
Skånefrö	Tommarp	--
Skellefteå Kraft AB	Skellefteå	www.skekraft.se
Skellefteå Kraft AB	Hedensbyn	--
Skellefteå Kraft AB	Storuman	--
Slättholmens Såg & Trä AB	Skephult	--
Smålandspelletts AB	Korsberga	--
Södra Skogsenergi AB	Halmstad	www.sodra.com
Södra Skogsenergi AB	Långasjö	--
Södra Skogsenergi AB	Åtvidaberg	--
Södra Skogsenergi AB	Mönsterås	--
Sörsågens Bygg & Interiör AB	Tibro	--
Statoil Pellets AB	Säffle	www.statoil.se
Stenvalls Trä AB	Sikfors	--
Stocka Emballage AB	Stocka	--
Stockhorvan Trä & Pellets AB	Hultsfred	--
Stora Enso Gruvöns Sågverk	Gruvön	--
Stora Enso Kopparfors Sågverk	Norrundet	--
Sydpelletts AB	--	www.sydpellets.se
TalOil AB	Stockholm	www.talmoil.se
Trä & Bygg i Lockne AB	Lockne	--
Vida Pellets AB	Hok	--
Vindö Byggvaror AB	Djurhamn	www.vindobyggvaror.se
V-Pellets AB	Grums	--
Wallströms Trävaru AB	Sandviken	--
Wasa Byggträ	Mora	--
Wermlandsved i Höljes	Höljes	--
Wisswood AB	Hok	www.wisswood.se

Trade

List of wholesalers:

No information available.

List of retailers:

No information available.

Consumption

Total consumption:	1.850.000 t/a
Large scale consumption:	800.000 t/a
Total number of pellet boilers (2007):	120.000 (Source: Davidson 2008)
Number of pellet boilers sold 2007:	6.000 (Source: Davidson 2008)
Total number of pellet stoves (2007):	20.000 (Source: Mudgal et al 2009)
Number of pellet stoves sold 2007:	2.000 (Source: Mudgal et al 2009)

List of large scale users (> 3000 t/a) – electricity companies:

Name of the company	City	www
FORTUM, Hässelbyverket	Hässelby	www.fortum.com
Öresundskraft, Västhamnsverket	Helsingborg	www.oresundskraft.se

Price development

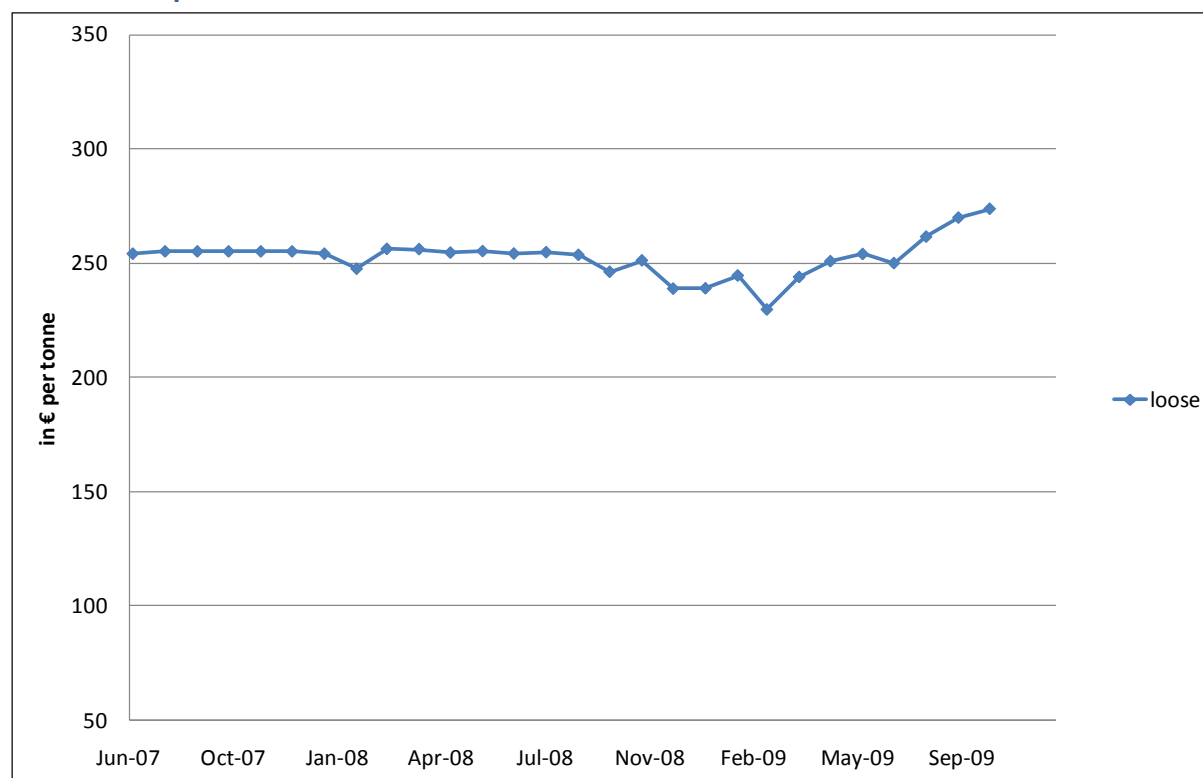


Figure A.24: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 3 tonnes; incl. transport of max 50 km; incl. VAT 25%);
Source: PiR

Pellets market in Switzerland

Production

Production capacity:	171.000 t/a
Real production:	70.000 t/a ⁴
National pellets standard:	none
Existing certificates:	DINplus (5), ÖNORM M 7135 (2)

List of producers:

Name of the company	City	www
AEK Pellet AG	Solothurn	www.aekpellet.ch
Baltenschwiler AG	Laufenburg	--
Bartholdi Pellets AG	Schmidshof	www.bartholdipelletsag.ch
Bestpellet.ch	Bösingen	www.bestpellet.ch
Bürli Holzpellets	Gettnau	www.holz-pellets-buerli.ch
Holzbau Zenger Habkern	Habkern	www.blockhaus-zenger.ch
Keller Konrad AG	Unterstammheim	www.konradkellerag.ch
Mivelaz Bois SA	Le Mouret	www.mivelazboissa.ch
Mühle Scherz AG	Scherz	www.muehlescherz.ch
Nyffenegger Rud. AG Sägerei/Transporte	Wasen	www.nyffenegger-holz.ch
Ostschweizer Pellets Beniwood.Gossau	Gossau	www.beniwood.ch
Peter Holzbau AG	Blumenstein	www.peter-pellets.ch
Tschopp Holzindustrie AG Produktion Swisspellets	Buttisholz	www.buttholz.ch

Trade

List of wholesalers:

Name of the company	City	www
Bise O. SA Bois et Charbon	Murist	www.obise.ch
Crüzer Reto Transporte	Scuol/Untervaz	www.cruezer.ch
fenaco Holz-Pellet	Bern	www.holz-pellet.com
fenaco Pellet de bois	Puidoux	www.pelletboi.ch
Jenni Brennholz	Diegten	www.jenni-brennholz.ch
LV-St. Gallen	St. Gallen	www.holz-brennstoff.ch
Migrol AG	Zürich	www.migrol.ch
Valais Pellets SÀrl	St. Leonhard	www.vallais-pellets.ch
waldenergie.ch Pellets und Brennholz	Winzau	www.waldenergie.ch

List of retailers:

Name of the company	City	www
Bartholdi Pellets AG	Schmidshof	www.bartholdipelletsag.ch
Bestpellet.ch	Bösingen	www.bestpellet.ch
Bise O. SA Bois et Charbon	Murist	www.obise.ch
Crüzer Reto Transporte	Scuol/Untervaz	www.cruezer.ch
fenaco Pellet de bois	Puidoux	www.pelletboi.ch
fenaco Holz-Pellet	Bern	www.holz-pellet.com

⁴ Data of 2007

Jenni Brennholz	Diegten	www.jenni-brennholz.ch
Keller Konrad AG	Unterstammheim	www.konradkellerag.ch
LV-St. Gallen	St. Gallen	www.holz-brennstoff.ch
Nyffenegger Rud. AG Sägerei/Transporte	Wasen	www.nyffenegger-holz.ch
Ostschweizer Pellets Beniwood.Gossau	Gossau	www.beniwood.ch
Peter Holzbau AG	Blumenstein	www.peter-pellets.ch
Tschopp Holzindustrie AG Produktion Swisspellets	Buttisholz	www.buttholz.ch
Valais Pellets SÀrl	St. Leonhard	www.vallais-pellets.ch
waldenergie.ch Pellets und Brennholz	Winzau	www.waldenergie.ch
Bürli Holzpellets	Gettnau	www.holz-pellets-buerli.ch
Holzbau Zenger Habkern	Habkern	www.blockhaus-zenger.ch
Migrol AG	Zürich	www.migrol.ch

Consumption

Total consumption:	90.000 t/a
Large scale consumption:	no large scale consumption
Total number of pellet boilers (2008):	8.500
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	5.000
Number of pellet stoves sold 2008:	not known

Price development

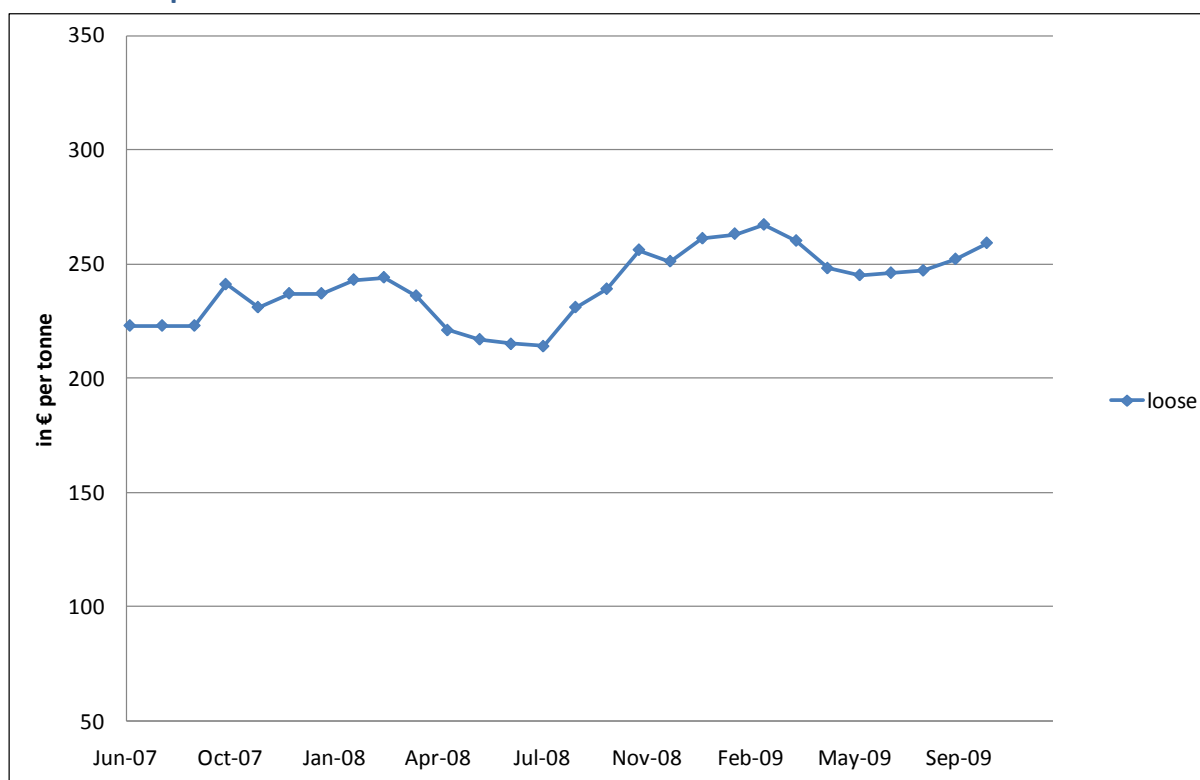


Figure A.25: -) Average price/tonne wood pellets delivered as loose (purchase volume of about 3-8 tonnes; incl. transport of max 50 km; incl. VAT 7.6%)
Source: Holzenergie Schweiz

Pellets market in Great Britain

Production

Production capacity:	218.000 t/a
Real production:	125.000 t/a
National pellets standard:	none
Existing certificates:	none

List of producers:

Name of the company	City	www
Arbuthnott Wood Pellets	Laurencekirk, Kincardineshire	www.hotstovies.com
Balcas Brites	Enniskillen, Northern Ireland	www.balcas.com
Balcas Brites	Invergordon, Scotland	www.balcas.com
Biojoule Ltd	Retford, Nottinghamshire	www.biojoule.co.uk
Blazers Fuels (Clifford Jones Timber)	Ruthin, North Wales	www.blazersfuels.co.uk
Briquette and Pelleting Co	Lowestoft, Suffolk	www.briquetteandpellet.co.uk
Duffield Wood Pellets	Ripon, N Yorkshire	www.duffieldwoodpellets.com
Ecowood Fuels	Cullompton, Devon	www.ecowoodfuels.co.uk
Forest (Bio Products) Ltd	Perth, Scotland	None
Harvest Wood Fuels	Farnham, Surrey	www.harvestwoodfuels.co.uk
Land Energy	Bridgend	www.land-energy.com
Puffin Pellets, Boyndie	Boyndie, Scotland	www.puffinpellets.com
Rainworth Fencing	Mansfield	www.rainworthfencing.co.uk
Rawnsley Wood Products Ltd	St Austell, Cornwall	www.cornishwoodland.co.uk
Silvigen Ltd	Goole, E. Yorkshire	www.silvigen.co.uk
Strawsons	Retford, Nottinghamshire	www.strawsonsenenergy.co.uk
Wood Pellet Energy UK Ltd	Chilton, Co.Durham	www.woodpelletenergy.co.uk

Trade

List of wholesalers:

Name of the company	City	www
Biomass UK Ltd	London	www.biomassuk.com
International Forest Products (UK)	Newbury	www.ifpcorp.com

List of retailers:

Name of the company	City	www
Able Fuels Ltd	Huddersfield	www.ablefuels.co.uk
Arborworks Ltd	Stockbridge	www.arborworksltd.co.uk
Arran Woodfuels	Isle of Arran	www.arranwoodfuels.co.uk
Artisan Oak Ltd	Ashford	www.artisanoak.co.uk
Balcas Ltd (Northern Ireland)	Enniskillen (NI)	www.balcas.com
Bioener G Ltd	Milton Keynes, Bletchley	www.bioenerg.co.uk
Briquette and Pellet Co Ltd	Chesterfield	www.briquetteandpellet.co.uk

Carbon Neutral Fuels - now Global Pure Energy Solutions	Colchester	www.cnfuels.co.uk
Champfleurie Estate Ltd	Linlithgow	www.champfleurie.co.uk
Corley Bio-Wood	Coventry	www.corleybiowood.co.uk
Dafydd Cadwaladr	Gwynedd	--
Duffield Wood Pellets	Ripon, North Yorkshire	www.duffieldwoodpellets.com
Eastern Woodfuels	Woodbridge	www.bentwatersparks.com
ECO Living Solutions	Bedford	www.ecolivingsolutions.co.uk
Eco Plumb	Christow	www.eco-plumb.biz
EcoEnergyDepot	Cheshire,	www.ecoenergydepot.co.uk
Ecowood Fuels	Cullompton	www.ecowoodfuels.co.uk
Eden Products Ltd	Middlewich	www.edenproductsLtd.co.uk
English Wood Fuels	Rutland	www.englishwoodfuels.co.uk
Enviro Installations Ltd	Honiton	--
Forest (Bio Products) Limited	Perth	www.forestbio.co.uk
Forever Fuels	Maidenhead	www.forever-fuels.com
Goodwood Forest Sales	Chichester	www.goodwood.co.uk
Grate Expectations	Redruth	grateexpectations.org
Grate Fireplaces Ltd	Stafford	www.gratefireplaces.net
Green Energy Solutions Ltd (Northern Ireland)	Craigavon	www.greenenergyLtd.com
Harvest Wood Fuels (previously Surrey Hills Wood Fuel)	Guildford	www.harvestwoodfuels.co.uk
Island Core Green Energy (Northern Ireland)	Co.Antrim	--
Jack Moody Biomass	Wolverhampton	www.jackmoodyLtd.co.uk
LC Energy Ltd	Albury	www.lcenergy.co.uk
Liverpool Wood Pellets	Liverpool	www.liverpoolwoodpellets.co.uk
Logs Direct Ltd	Carnforth	www.logsdirect.co.uk
Manco Energy Ltd	York	www.mancoenergy.com
Midland Bioenergy	Nuneaton	www.midlandbioenergy.co.uk
NI Kedco Energy (Northern Ireland)	Banbridge	www.kedco.com
Norfolk Woodfuels	Mattishall, Dereham, Norfolk	www.norfolkwoodfuels.com
OLS Eco Ltd	Bagshot	--
PBE Bioenergy	St Davids	www.pbe.org.uk
Pentland Plants	Edinburgh	www.pentlandplants.co.uk
Perthshire Biofuels	Perthshire	www.perthshirebiofuels.co.uk
PSF Division, St Croix Power Systems Ltd.	Greater London	--
Puffin Pellets	Banff	www.puffinpellets.com
Rainworth Fencing Manufacturing	Nottingham	--
Raith Partners (Woodfuel) Ltd	Perth	www.woodfor4warmth.co.uk
Rawnsley Woodland Products (Cornish Wood Fuels)	Victoria	www.cornishwoodfuels.co.uk
Renewable Fuels Ltd	York	www.renewablefuels.co.uk
Rocfuel Ltd	Doncaster	www.rocfuel.com
Rural Generation Ltd (Northern Ireland)	Londonderry	www.ruralgeneration.com
Silvigen Ltd	Selby, North Yorkshire	www.silvigen.co.uk
Solar Thermal Ltd	Wiltshire	www.solarthermal.co.uk
Stako UK Ltd	Bassaleg	www.dustfreehorsebedding.com
Strawsons Energy	Retford	www.strawstonsenergy.co.uk
Sylvestrus Ltd	Inverness	www.sylvestrus.co.uk
The Fergusson Group	Stirling	www.purepowerpellets.co.uk
The Woodstove Shop Ltd	Kent	www.woodstoveshop.co.uk

Treenergy Ltd	Monmouth	www.treenergy.net
Wood Pellet Fuels (was the Spalding Gardener)	Spalding	woodfuelpellets.co.uk
Wood Pellet Stoves	Stockport	www.woodpelletstove.co.uk
wood2warm	Dumfries	www.wood2warm.co.uk
Woofwoodfuel	Axminster, Devon	www.woofwoodfuel.co.uk

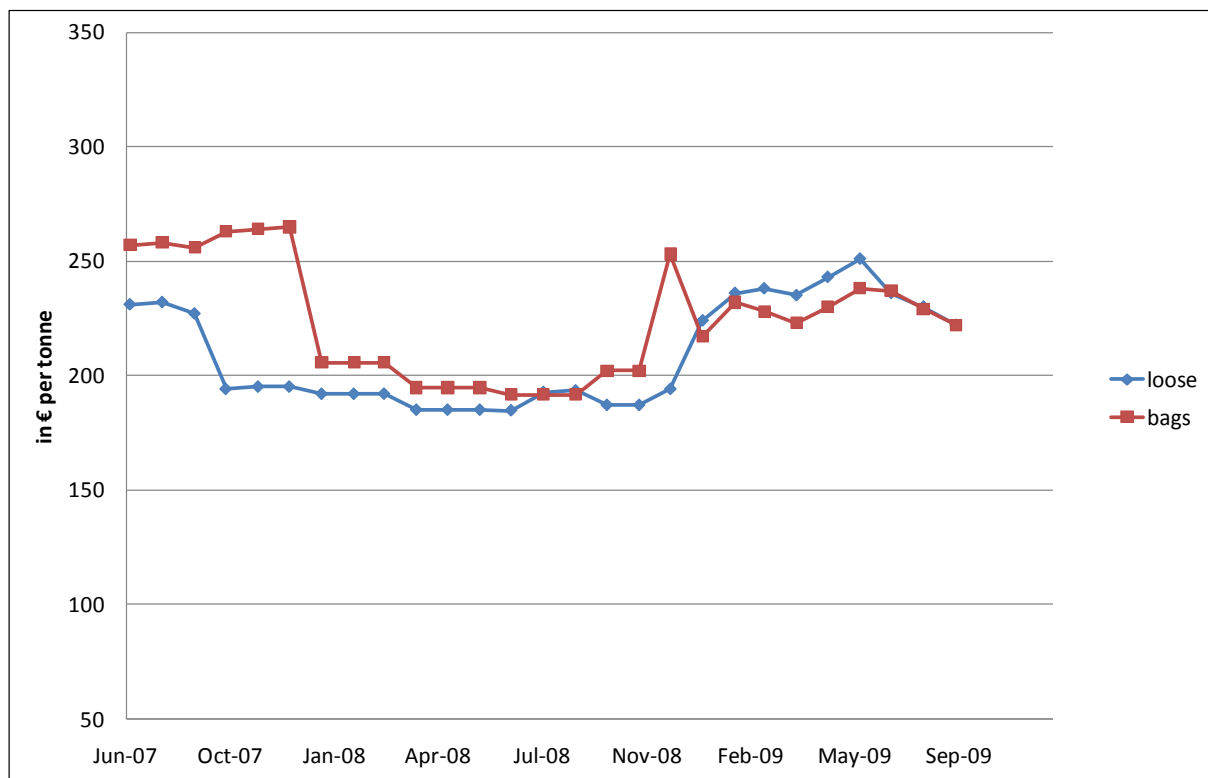
Consumption

Total consumption:	176.000 t/a
Large scale consumption:	166.000 t/a
Total number of pellet boilers (2008):	750-1.000
Number of pellet boilers sold 2008:	not known
Total number of pellet stoves (2008):	200
Number of pellet stoves sold 2008:	not known

List of large scale users (> 3000 t/a) – electricity companies (believed to be):

Name of the company	City	www
Drax Power Station	Selby, Yorkshire	www.draxpower.com
Scottish & Southern Energy plc	--	www.scottish-southern.co.uk
E.ON UK plc	--	www.eon-uk.com
Lynemouth power station	Ashington	--

Price development



**Figure A.26: -) Weighted average price/tonne wood pellets delivered as loose (purchase volume of about 5 tonnes; incl. transport of max 50 km; incl. VAT 5%);
-) Weighted average price per tonne wood pellets in bags < 25 kg on pallets (excl. transport; incl. VAT 5%)**

Source: NEF – The National Energy Foundation