

INFONAVIGATOR

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Above You can see the Info - Navigator that is used in the internetversion of the Bioenergy International. Articles there are distributed in two ways. Either through the Editorial where all articles are produced or judged by an editor or through the Connection section, where professional can publish information concerning bioenergy. It is also possible to publish information in many major languages.

Welcome to participate in the Bioenergy International

Welcome

to the new media product

the Bioenergy International.

In Your hand You have the special edition made for the Sustain 2001 exhib.

We are proud to present this new media product, the *Bioenergy International for You*. It is also published on the web with the adress www.bioenergyinternational.com.

One of the unique advantages with the **Bioenergy International** is that it is a very suitable forum for spreading local news world wide.

The reason is that with the internet version every professional have the possibility to write or paste in a news release, a report or some other text of interest. Then it will immidiatly be spread around the world.

We belive that the best way to promote an increase in the use of sustainable bioenergy is to make it easy for professionals to learn from each other and to create a good working commercial forum. This product is therefore also financed by advertisers with the ambition to keep a commercial view of things.



Pellets, the new international fuel for large scale as well as for small scale consumers. Below, You will find a presentation of this unifuel, how it is produced, distributed and burned. Read more on www.bioenergyinternational.com

Premium biofuel is today produced in many countries around the world.

The largest markets are in Canada, Sweden, Austria and Denmark, but is rapidly growing in many other countries.

Pellets, small cylindrical high condensed units from pul-

verized wood with diameters from 6 mm to 12 mm and length of around 20 mm is however not a new product.

In the agriculture industry pelleting is a common way to distribute food for animals. Even in many other industries pellets is a well known transport and handling media.

Pellets should be seen as an effective way to handle lowdensity products.

For example, pelletsfuel can be delivered to the consumers in tank-trucks with up to 20 meters long hoses. They are connected directly to the local storage bin.

page two

The Bioenergy Internationals ambition is to help develop the market and knowledge of bioenergy on an international level.

The publisher is Bioenergi Förlag, a private Swedish company with experience of bioenergy development for over 20 years. It is also the publisher of the swedish magazines Bioenergi and Kretslopp (Recycling) and the internet station www.novator.se including the popular bioenergy sphere.

In Sweden Bioenergi Förlag has a good working relation with the Swedish Bioenergy Association.

Therefore, a cooperation with the European Biomass Association (AEBIOM) for the production and distribution of the Bioenergy International, has been established

The goal is to also establish new forms of co-operation with other associations working for a positive development of bioenergy all over the world.

Lennart Ljungblom
Editor and publisher

AEBIOM Views



Kent Nyström, president of AEBIOM

It is a pleasure for me to note that the first issue of Bioenergy International now has been realised.

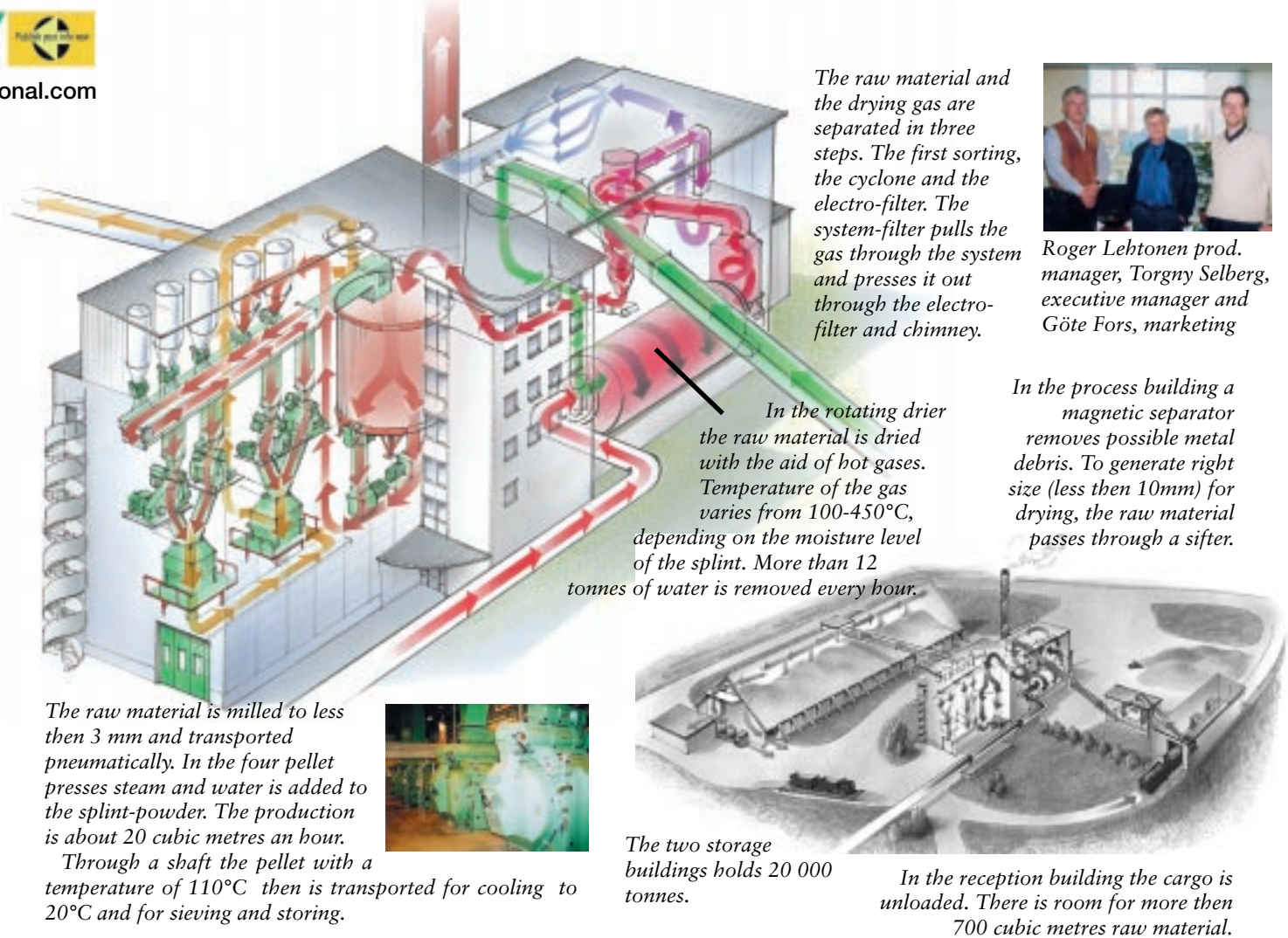
AEBIOM, European Biomass Association, with 21 countries as members has the intention to contribute with information.

The aim with AEBIOM's participation in the magazine is to disseminate important information about implementation of bioenergy projects in all fields and in that connection stimulate further activities.

For the moment AEBIOM stress the importance of steering instruments in order to speed up implementation of bioenergy and will one of these days send a position paper on this subject to the European Union institutions. It is called *Steering instruments for decreasing of CO2 emissions*.

Furthermore we are working on a position paper where we give our points of view on the commission green paper *Towards a European strategy for the security of energy supply*. It will also be sent to EU institutions in May.

Kent Nyström



The raw material and the drying gas are separated in three steps. The first sorting, the cyclone and the electro-filter. The system-filter pulls the gas through the system and presses it out through the electro-filter and chimney.



Roger Lehtonen prod. manager, Torgny Selberg, executive manager and Göte Fors, marketing

In the rotating drier the raw material is dried with the aid of hot gases. Temperature of the gas varies from 100-450°C, depending on the moisture level of the splint. More than 12 tonnes of water is removed every hour.

In the process building a magnetic separator removes possible metal debris. To generate right size (less than 10mm) for drying, the raw material passes through a sifter.

The raw material is milled to less than 3 mm and transported pneumatically. In the four pellet presses steam and water is added to the splint-powder. The production is about 20 cubic metres an hour.



Through a shaft the pellet with a temperature of 110°C then is transported for cooling to 20°C and for sieving and storing.

The two storage buildings holds 20 000 tonnes.

In the reception building the cargo is unloaded. There is room for more than 700 cubic metres raw material.

Production and use of pellets

Bioenergi i Luleå AB runs one of Sweden's largest pellet factories with a yearly production of 90 000 tonnes. It was started 1998. It is a part of a large combinat, that uses excess gases and energy from a steelwork, for power, district heating and also for drying of the rawmaterial for the pellets.

An unbelievable amount of energy is derived from the steelworks, more than 2 TWh per year. First, electricity and district heat is produced from part of the source and then the pellet raw material is dried. Despite that, a large amount of excess heat is let out into the sea. In the future a plant for vehiclefuel production might be added.

Locally owned
The plant is run by locally owned Luleå Energi in co-operation with SCA Forest and Timber, one of Swedens largest forest industries.

The function
The Chief of the plant, Roger Lehtonen explains how the plant works for us.
– Simplified you can say that the factory consists of four parts, receiving, preparation, processing and storage with shipping.

Receiving
The goods are transported in regular trucks which first passes a scale. There, the driver receives a card that identifies the shipment and then follows it to testing and further on.

The scale is connected to the computer in the control room. In the receiving

building the truck tips the cargo into a receiving pocket. The driver also samples a test in a 10-litre can.

Next to the receiving pocket is a lab which decides the moisturecontent. The driver then puts thr ID card for the shipment in the sample can.

There is also a loading area at which a wheel-loader is used to load splint into the receiving pocket. The wheel-loader is also used loading trucks for shipment to the harbour which is harbour located two kilometres from the factory.

Just In Time
There is no extra storage area except for the two receiving pockets of 350 cubic metres each. The system is therefore built on JIT basis.

Initially, the



The pipe with the drying gases with the pelletsplant and storage facilities in background.

production will be based on sawdust and bark. Later, forest residues may also be added as a source.

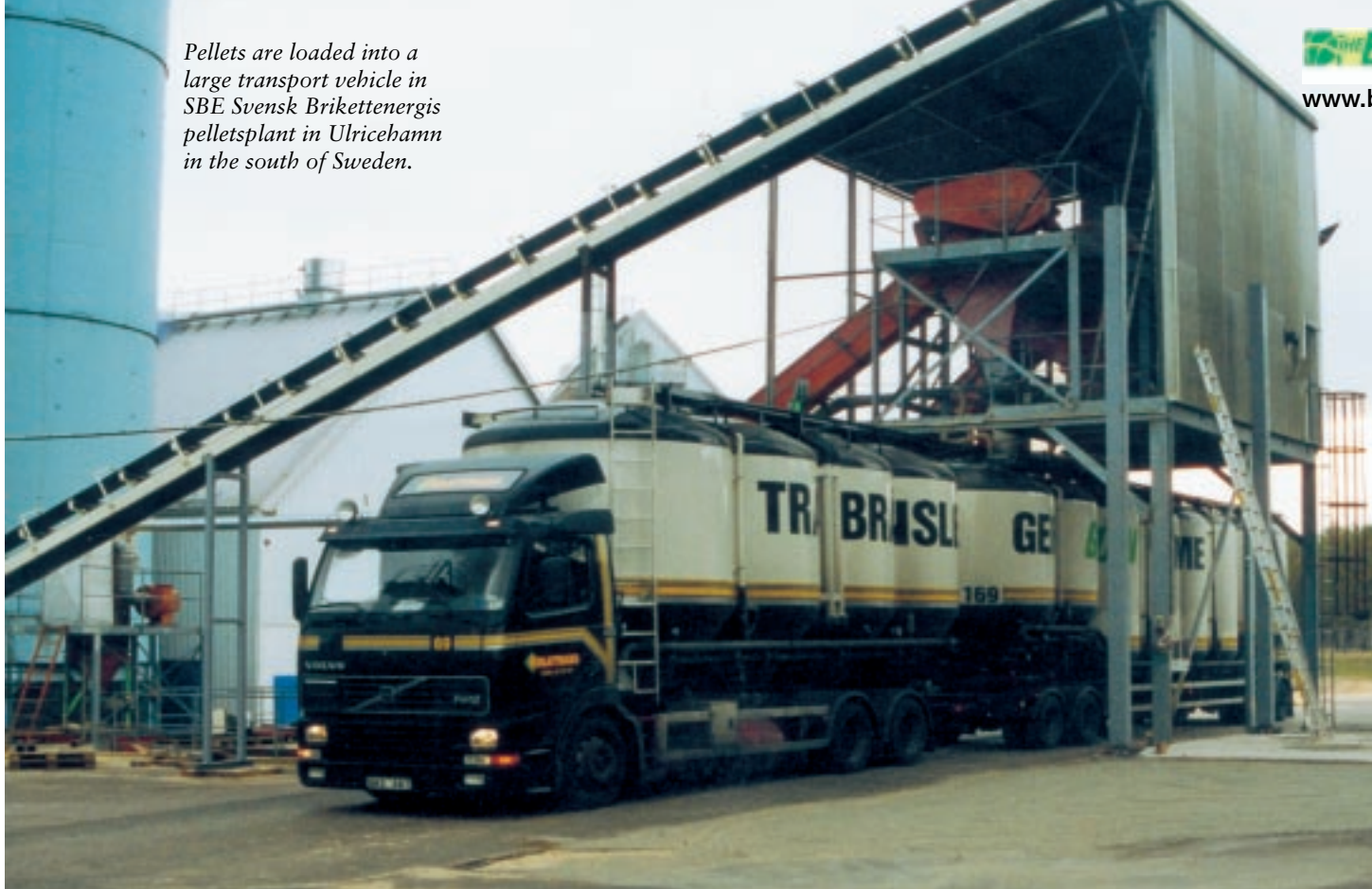
Process building
From the reception the material is transported on a conveyer to the preparation building, there magnetic separators will make sure that no contamination or oversized material enters the process.

First the material enters a buffer silo of 50 cubic meters. The level in that silo is crucial for the process. A 15-meter long rotor drier with a diameter of four meters

dries the sawdust with smoke gases from the nearby power plant. Each hour 14 tonnes of dry goods are produced from a 52 percent moisture level down to 10 percent.

Mills
From a storage silo two lines transport the material to a grinding process. The mills takes care of maximum 10 mm size dried sawdust and grinds it to a maximum three mm.
After the mills, which are placed in a explosion safe area, the powder is transported to the

Pellets are loaded into a large transport vehicle in SBE Svensk Brikettenergis pelletsplant in Ulricehamn in the south of Sweden.



Bioenergy News

Finland

One of the largest bioenergy countries of Europe has an even higher bioenergy ambition. The official goal is now to increase bioenergy use with 50 percent to the year 2010. Already 25 percent of the goal is under construction, also including 500 MW of biopower.

Poland

The bioenergy-sector is since five years rapidly increasing. Straw-fired district heating systems are one major area. Under upstart is now Poland's first straw based combined Heat and power (CHP) unit.

A national development strategy is just about to be debated in the parliament.

Ireland

The republic's first CHP unit based on gasification technology (300 kWe) will be built by the Tipperary Institute together with B9 Energy Biomass Ltd. Funding through Thermie.

A national strategy launched in november to meet the requirements according to the Kyoto protocol has initiated a discussion on how to reach the goals. Two major solutions are an increased use of anaerobic digestion and Short Rotation Coppice.



Pellets are transported in large quantities in boats. Here is loading with pellets from Fulghum Fibre Fuels under progress in Halifax, Canada.



In Austria integrated pellets-boilers are very popular for small houses. Moore than 10 different products are on the market. Here is one from the company Hargassner in an exhibition in Wels. In the background, a pellets truck from pelletsplant Hot's in Oberösterreich.



Small bags with pellets intended primarily for the stove market. Produced and delivered by the large Norwegian oil-company Statoil.



A nice looking pelletsstove, Ecobaby from Italian company Italvas.



Pell-X pelletburner, an example of burners that is connected directly to the smallhouse boiler in the same way as the oilburner. Moore than 20 different brands are produced in Sweden.

100 MW of pellets-burning capacity for CHP in Helsingborg (Öresundskraft) in south of Sweden. Pellets are delivered by boat and trucks.



A pelletburner from Danish Linka installed in a boiler with the output of around 500 kW.

four pellets-presses.

The Presses

With the help of a feeder screw each, the powder is inserted into each pellet press. Before the contact with the matrices, steam is added with the help of a mixer screw so that the right environment for the

pellet process is created. The pellets keep a temperature of 110 degrees Celsius when it exits the matrices. After that it's cooled to 20 degrees, which takes place in an air cooler. After the cooling a sieve is passed and the finished pellets are transported on a

conveyer to the storage space.

The system is delivered by Bühler.

Pellets storage

The two storage buildings stores 20 000 tonnes. Large doors in both ends make loading and unloading easy. In the western part

unloading for bulk trucks and a sack packing arrangements are set up. There they can pack large sacks with 500 kg as well as smaller ones at 20 kg.

Crew

The plant is run in five shifts, meaning eight-hour shifts

during weekdays and twelve-hour shifts on weekends.

- We are a total of twelve persons including me, ends Roger Lehtonen.

*Text and photos
Lennart Ljungblom,
Translation
Patric Storm*

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Quality in every bucket



A large part of what we produce is shipped directly to our customers.

Precision is a virtue. Each hour, around-the-clock, year round, we sample our product during production. Our modern production facility is a guaranty for a high degree of delivery assurance. Bioenergi's pellets maintain the highest quality. Bucket after bucket.

Feel free to contact our marketing manager, Göte Fors, +46 920 26 44 00, or our production manager, Roger Lehtonen at +46 920 25 50 96.



BIOENERGI

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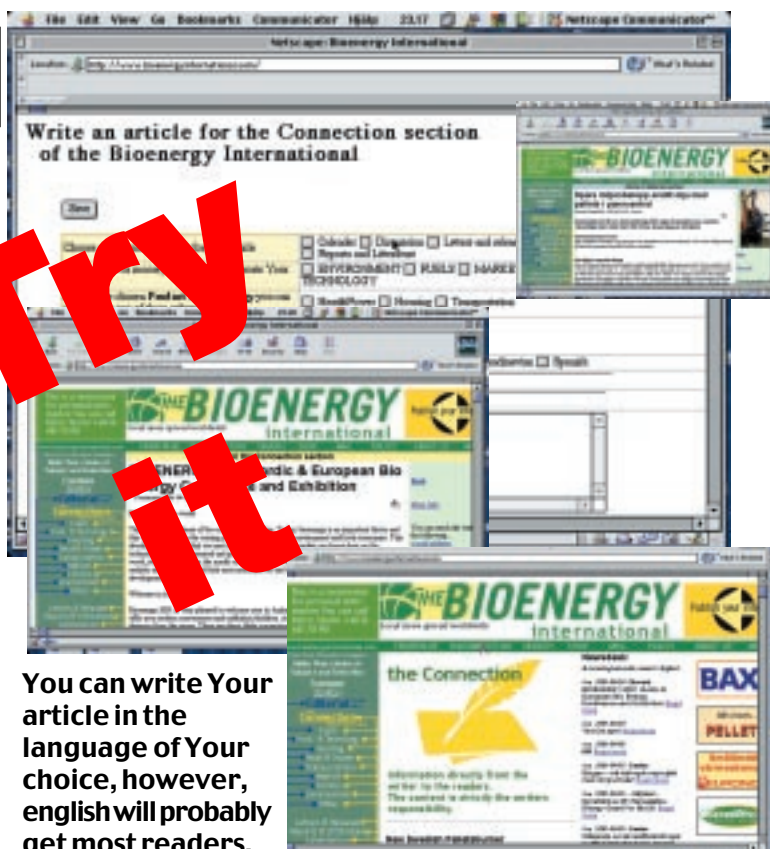
SPROUT-MATADOR

Manufacturer and supplier of grinding and pelleting equipment for refining of biomass

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Five easy steps to publish material in www.bioenergyinternational.com

- 1) Press the button in the upper right corner.
- 2) Choose between **Connection**, where You will be the sole editor of the text or **Editorial** where we will edit and judge Your article before publishing.
- 3) Then pick the categories best describing the content of Your article.
- 4) Write or paste in Your article. In the **Editorial** section it is also possible to include illustrations.
- 5) Press the save button. Then You will see the layout of Your article and be able to edit it before publication.



Try it

You can write Your article in the language of Your choice, however, english will probably get most readers.

Bioenergy International is a new media product published on the internet and on paper.

The internet address is www.bioenergyinternational.com

It can also be reached through the www.novator.se the home of the Bioenergy- and Environmental sphere including the text and pdf archive of the Swedish magazines Bioenergi and Kretslopp.

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