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AEBIOM

Above You can see the
Info - Navigator that is
used in the internet
version of the
Bioenergy Interna-
tional.

Articles there are dis-
tributed in two ways.
Either through the Edi-
torial 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

Pellets

The biofuel pellets
represent the major
theme in this number.
We are presenting dif-
ferent aspects of this
field starting from
pellets production,
through handling
sytems and coming
into the market
spectrum.

In September last Year a
large conference was
held in Stockholm - The
First World Pellets
Conference.

300 participants
includes 100 of those
who came from
countries outside of
Europe - fantastic!

Jan Erik Dahlström one
of the initiative takers
of the conference has
prepared a report that
was published in
Swedish magazine
Bioenergi but right now
our colleague - Anders
Haaker has done some
editorial work to
make the text possible
to read also by
international readers.

PAGE 3

PELLETS- BAG

The story behind it

We have
visited Forsjö
pellets plant, located
150 km south west of
Stockholm outside
Katrineholm. We saw,
and right now we
would like to describe
also for You, two ex-
cellent working
machinery that
produces the bags and
places them on
pallets, facinating...

PAGE 6 - 7



The pellets dragon as shown in the large exhibition in Wels in March 2003. Inside the magazine You will find a report which among other things also presents a nice integrated kitchen stove that can automaticly change from pellets to wood use and vice versa.

PAGE 14 - 15

Expanding market

From some of the active bioenergy companies
we have got articles which shows how
exciting todays market become. For example in
Germany there is a boom for large heat and
power units to take care of demolition wood.

PAGE 11

Report from Bratislava

Bioenergy in the countries in central south
east region of Europe has really started up
their development. We report from Bratislava
were a large conference and also an activity
from ManagEnergy took place.

PAGE 8-9

Welcome to another issue of the Bioenergy
International, paper version. As You
probably know, we do also have an internet
based magazine which You will find at
www.bioenergyinternational.com

The Bioenergy International is a commercial
product and every issue has to be financed. In
this number we have 16 advertisers and we are
very proud of this. We hope that those

companies will meet a part of their market through
us. We look forward to following issues based on
good cooperation with readers and advertisers.
Please share with us Your ideas and views either
directly on www.bioenergyinternational.com or
contact me or Mrs Dorota Natucka on mail or
phone. You will find necessary contact adresses and
telephone numbers on the back cover.

Lennart Ljungblom Editor and publisher



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Editorial content

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Country reports start

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Pellets

The conference Pellets 2002 in Stockholm Success for Pellets



The pellets' market is expanding in many countries. National experiences was shared internationally during the First World Conference on Pellet. The documentation from the conference can be ordered from SVEBIO, Swedish Bioenergy association, info@svebio.se

The interest for pellets used as fuel is growing rapidly in all parts of the world. That was obvious after the 1st World Conference on Pellets in Stockholm last year.

More than 300 persons from all over the world gathered for three intensive days.

The mix of participants was impressive with 37 delegates from outside Europe from USA, Canada, Japan, China, Thailand, New Zealand and Uruguay. More than

100 delegates came from European countries outside of Scandinavia.

Exhibitions and posters

In the exhibition part 20 companies from Sweden showed state-of-the-art-equipment. Companies from USA, China, Denmark and Austria were also represented. A number of posters showed research projects in several countries.

Research session

During the conference there was also a research session covering some of the following subjects;

- Reasons for slagging during stemwood pellets combustion

and some measures for preventions.

- Emissions from burning of softwood pellets.
- Comparison of air emissions and ash behaviour when co-firing densified refuse-derived fuel pellets
- Optimisation of efficiency and emissions in pellet burners.
- Physical characterisation and chemical composition of densified biomass fuels with regard to their combustion behaviour.
- Chimney emissions from small-scale burning of pellets and fuelwood
- Examples referring to different combustion appliances.
- Wood pellet



Beijing Laowan Bioenergy Technology CO., Ltd is a major supplier of coal fired domestic appliances in northern China. Since 2001 they are also manufacturing an automatic pellet fired kitchen stove. The capacity of the kitschen stove is 1-4 kW.

production costs under different framework conditions - comparison between Austria and Sweden . -PELL-SIM: Dynamic model for forecasting storage and distribution of wood pellets. Three study tours

Three study tours were arranged showing examples of pellets' use in Sweden. The second World Pellet Conference will be arranged in USA and Canada during 2004.

Jan Erik Dalhström



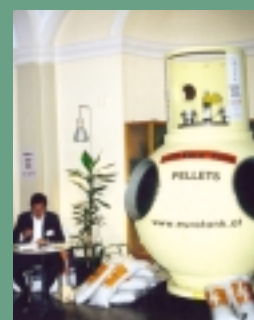
The poster session showed the latest research results.



A steam boat trip in the archipelago during one evening offered good food and opportunities for



The leading market actors presented the latest news.



A German made pellet store for storage in the ground.



Sharing experiences during a coffee break.

Pellets in small houses

30 000 installed pellets burners and boilers in Sweden

During the year of 2002 the number of installed pellets burners and pellets boilers increased with 25 percent. The total of small scale installations are now around 37 000. The information was presented by Anders Östergren from the manufacturers organisation SBBA, Swedish Pellets Burners and Boilers Association on the national pellets conference in Lundsbrunn 4-5 februari 2002.

The conference that was arranged by Swebio attracted around 130 participants. /LLj

European Biomass Days of the Regions 2002

Between 29th September and 6th October 2002, the European Biomass Days of the Regions took place.

The meeting was officially opened during the press conference in the European Parliament in Strasbourg. Politicians, media and biomass organisations were all present.

Werner Döller, C.A.R.M.E.N.'s executive secretary, thanked for the support.

By 2010, twelve per cent of the energy used in the EU should be won from regenerative sources of energy,

Especially in private and communal institutions (in-door swimming pools, schools, etc.) an enormous potential for a change to regenerative sources of energy was available, Ferber said.

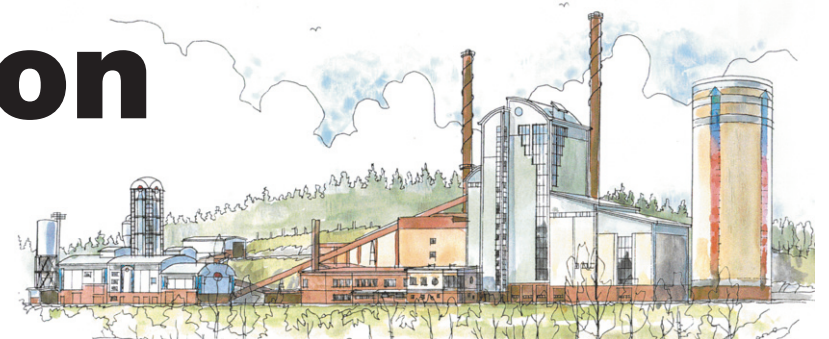
Combined heat, power and pellets production

Pellet is produced from wet wood material in a very efficient way in Skellefteå in northern Sweden.

In order to increase the heat value in biomass a dry product is desired. The target is of course to dry with minimum consumption of energy. By integrating the dryer with heat and power production (CHP-plant) this can be achieved at very low cost.

Skellefteå Kraft has a CHP-plant com-

bined with production of wood pellet mill. For drying the wood before pelleting an Exergy dryer from GEA Exergy AB was installed. The main boiler is fired with undried biomass producing high pressure steam for heat and power production. Medium pressure steam (25 bar) is bled off from the steam turbine and used for heating the Exergy dryer. The secondary product steam generated in the dryer (4,5 bar) is converted into



The combined CHP and pellet production plant in Skellefteå.

clean steam in a re-boiler. This low-pressure steam is used for power production in a condensing turbine. By this about 90% of the energy used for the drying is recovered. Capacity 50 ton wet feed/hour, about 22 ton evaporation/hour.

The combined pellet and CHP-plant

makes it possible to extend the operation time of the CHP-plant. One result is that 50 GWh more electricity can be produced.

The output from the plant is 64 MW heat, 36 MW electricity and 130 000 ton pellet per year.

Total investment in the combined CHP

and pellet plant was 55 million Euro.

A similar system is to be erected at Junckers Flooring production in Koege, Denmark.

Danish energy company Energi E2 will operate the plant and use the pellet produced in the new block at the Avedøre CHP plant.



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Pellets



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One way to produce pellets

Several technologies are available for producing pellets. Bioenergy International is looking closer at the Kahl way of doing pellets.

Agglomeration by compression is a process, where the adhesion of the particles is promoted by forces acting from the outside. By means of suitable pelleting elements the product is compacted to such an extent that agglomerates of sufficient solidity are produced. The Kahl pelleting presses are built in a basic design.

As flat die press, where the pan grinder rollers rotate on a horizontally arranged

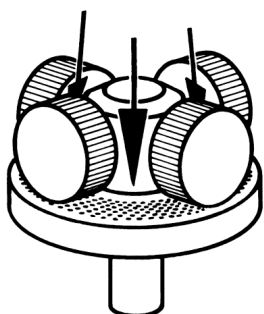


Figure 1.

die pressing the product downwards through the die holes, figure 1.

Pelleting process and pelleting elements

The pan grinder rollers and the dies are the most important elements in the pelleting process.

Compaction takes place in the open effective bores of the die. The product is fed

to the press vertically from above and is uniformly distributed into the pelleting chamber. A product layer is formed on the surface of the die. The rollers run over this layer and compact it.

The pressure is continuously increasing whilst the product is being rolled towards the effective bores, thereby pushing the product plug in the bores slightly forward. To achieve this, the frictional force within the effective bores must not exceed the effective pressure created by the rollers. On the other hand, the frictional force must be high enough to cause a sufficient compaction of the

product to a solid agglomerate, figure 2.

A small layer of product is forced into the effective bores which is united to a pellet by means of the pressure and the adhesive powers of the product. The individual layers of product form endless strands in the bores which are cut at the lower side of the die to the desired pellet length by means of rotating knives.

As for the pan grinder rollers, a large outer diameter and a solid bearing are required. The profile of the running surface can be varied, but this does not have such an influence as the execution of the die. Kahl presses are used with rollers of up to 450 mm in diameter and 192 mm in width. The profiles of the running surfaces are available in grooved, perforated, and corrugated design.

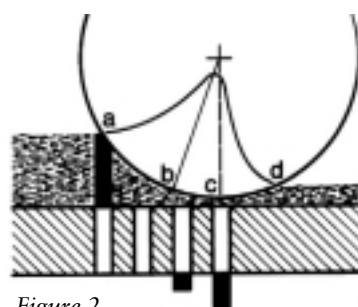


Figure 2.

From idea to leading industrial operation in 20 years

Janfire is one of the most experienced pellet burner manufacturers today.

The story began in 1979 when a friend of Mr Jan Magnusson returned from the USA with a bag full of wood pellets.

Mr Magnusson realised that after the oil crisis of the 70's, that was the fuel of the future. He was granted permission to experiment with municipal heating system during the evenings and his spare

moments and was soon known as the "caretaker".

In due course he developed an automatic feeder and burner for wood pellets.

The business Swedish Bioburner Systems AB (SBS) was

established in 1983 and he started to manufacture burners for large buildings such as schools and multi-family houses.

In the early 90's the market interest for smaller burners increased and he also

developed a burner for single-family houses.

Today Mr Magnusson still partly owned the company and can observe that his more than 20 years old ideas have given rise to an industrial operation.

Stefan Andreasson



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Jaakko Pöyry Group

EC The Energy and Transport Forum - Members appointed

The European Commission has appointed the 34 members and as many alternates of the new European Energy and Transport Forum.

– This Forum is part of the Commission's initiatives to improve European governance through increased public participation, transparency and dialogue between the Commission and those involved in public life" said Loyola de Palacio, Vice-President responsible for energy and transport.

Provide opinions

The Forum's mission is to provide opinions on any Commission initiative in the field of energy and transport policy, particularly on the avenues of approach and proposals generated by the Green Paper "Towards a European strategy for the security of energy supply" and the White Paper "European transport policy for 2010: time to decide".

Amongst the members following are representing renewables;

Arthouros ZERVOS who is Président of EREC – European Renewable Energy Council and Vice Président of EWEA – European Wind Energy Association is appointed as a full member with

dr Heinz KOPETZ the Vice Président of AEBIOM, the European Biomass Association, as the alternate. /LLJ

Pellets



Pelletsproduction in Forsjö Bruk

Forsjö Bruk sawmill together with the pellets plant is located 150 km south west of Stockholm.

Yearly production of wooden products are 100 000 tonnes and 85 percent of that amount is exported. Around 165 000 m³ of timber are used each year.



Yearly production of pellets is around 45 000 tonnes.

Raw material consists of sawdust from pine and spruce. It is produced at the premises and also bought from others.



Two pellets presses from Sprout Matador represents the base of the system.



The bagging line starts outside the production building. Here the pelletbid, of around 20 cubicmeter, is located. It is loaded with a frontloader.

The pellets intended for the bagging line are then transported with an elevator up over the roof and towards the sieve inside.

The dust is separated from the pellets and transported down to a container as shown by the production manager Benny Westman.

He has seven years of experience working with service inside the plant and from January this year he has become the production manager.

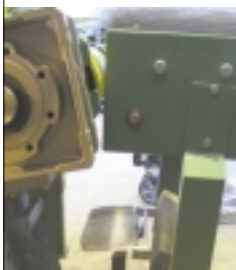
To the left You can see the front of the packing line. Transport of small separated fractions goes downward directly from the roof.

In the middle the roll of plastic film is shown. The plastic film is used for the production of the bags that takes place directly during the filling process. The film consists of three layers of different polyethylene kinds: first layer guarantees the right strength and elasticity, second gives proper UV-protection and third one ensures right kind of smoothness on the surface.

The system is called "Form, fill and seal" meaning that the bags for the pellets is produced in the process. There are no pre-manufactured bags that are filled.

After the 16 kg weighted bag is produced, it is further transported over a passage of around 15 unsymmetric rollers. The passage creates vibrations so the bag gets thinner and becomes more easy to handle when it's laid on the pallet.

One security detail, if a bag gets broken and material is spilled out all the package will fall down on the sensor as shown beside.



Pellets

This is the story describing how sawdust, after passing the pellets' plant, is surrounded by plastic film, formed as a bag and waiting to be used in some pelletsstove or boiler in a nearby household. It is not so simple as You probably believe.

We have visited Forsjö Bruk, one of the 23 Swedish pellets' plants. Forsjö Bruk produces 47 000 tonnes of pellets each year, using two Sprout Matador presses.

Nowadays almost 40 percent of pellets is delivered to households and half of that is packed in small bags. Most of the other small scale users get their pellets in bulk delivery.

The Danish company Fisker Pakkemaskiner A/S has designed and delivered the system that automatically produces 750 pellet bags (16 kg each) every hour.

The packaging line is working quite well says Benny Westman the production manager. We run the plant daytime and when needed also during the other shifts, depending on orders and the number of working

people.

Our pellets plant operates on 5 shifts with 2 men working on each one and during the daytime I am also here together with another service technician.

In principle we only produce pellets in bags depending on

order. We do not produce a large stock of bagged pellets, says Per Stenegaard, marketing manager for the pellets department in Forsjö Bruk.

What we have delivered here is a complete line for bagging pellets says Peter M.Henningsen.

Pellets



www.bioenergyinternational.com



In the laboratory

It is a lot of experience covered behind the well designed pellet bags. For example the size.

The bag should be economical in production which means the larger the better - but from the other hand it should be also possible to carry for all grownups in the family.

It should be easy to produce a pile on the pallet and it should be easy to empty the bag in the pellets stove. But there is of course other aspects, like resistibility against sun and water for example.

The quality of the pellets is also very important. In Sweden there is a standard SS187120 that has to be followed by all producers. In order to make sure that everything is okay, sample of the product is taken every 90 minutes and tested in the laboratory.

Mats Karlsson above checks the moisture content by putting 5 g of woodpowder into the automaticly functioning moisture instrument. To the left marketing manager Per Stenegaard demonstrates differnt types of baggs.



Outside there is a rotary drum dryer from AB Tork-apparater. Drying capacity is counted for around 7 tonnes of water per hour. Drying energy is of course produced using their own fuel.

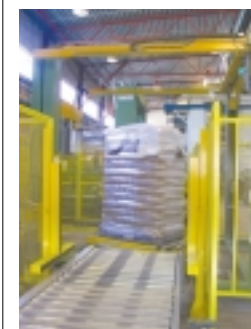


Most of the pellets have been delivered to large scale users. However, two years ago there was a breakthrough in the small scale market which during one year doubled its volume.

This season about half of the production from Forsjö is directed towards the small scale market and more than half of it, 15 000 tonnes, is delivered in small bags.



Prod. manager Benny Westman from AB Forssjö Bruk and Peter M. Henningsen from Fiskerpakkemaskiner



The Wrapping

After 52 pellet bags has been placed on the pallet the bale is first covered with a plastic "lid" protecting against sun, birds and rain.

Then its wrapped with plastic film. The film is first extended 100 percent so the pallette will contain a stable delivery of bagged pellets. Inside the wrapping a deliverence paper is placed.

It states the product, it's quality, time of the production and the producer name.

A packaging line of this kind costs around 2.1 milions Danish Krona around 260 000 Euro.

– Depending on how You calculate, from strictly economical point of view or if also ergonomic is important for You. With a strictly economical analysis you need to have 4-500 000 bagges a year. But You can also start from as low as 50 000 bages if ergonomics is very important.

– The alternative with manual handling of bags is also possible but they are heavy and have also a low productivity - finishes Mr Henningsen.

Text and photo: Lennart Ljungblom

We have been on the market for long time and I know that two of our Swedish customers that used to bagged flowers' soil for household use has also started with fuel pellets production.

After some discussions, also SÅBI Pellets, an other Swedish pellets producer, bought a complete line of that kind.

We have now delivered our equipment and ideas to many other pellet plants for example SBE Svensk Brikett-energi (Ulricehamn), Bio Norr (Härnösand), Bioenergi Scandinavien (Landskrona) and to the Danish Group VE in Grenå.

Fisker Pakkemaskiner A/S is a Danish

engineering company with 12 employees located nearby Aarhus.

– We are specialised in packaging machinery for bagging production using the polyethylene in a roll. says Peter Henningsen.

– Scandinavian countries represents our main market but we have also delivered equipment to England for example. Europe in general is becoming very interesting.

Most of the machinery is manufactured in Italy, however often in close cooperation with us.

Our responsibility is to design the packing line - and also to provide maintenance and service at the customer site in the future.

the story

Networks

Bratislava Workshop on Biomass utilisation

at local and regional level 4-5 February 2003

Norway Support for installation of pellets stoves

Enova, an organisation, owned by the government, for promotion of the transition towards renewable energy in Norway, now hands out up to 5000 NOK (around 600 Euro) for an installation of a pellets stove.

One of the demands is that the installation should replace electricity for heating.

Norway can be probably considered as one of the world's "leading" country with the highest amount of electricity use for heating proposes and therefore the parliament has put up 500 mio NOK, around 60 mio Euro, to promote other heating sources.

Most of the money will go for installations of heatpumps which also is accepted for support. Application was possible until the 15th of March. At that time there were around 4 859 applications for pellets-stove installations and 43 503 for heat pumps.

More info (Norwegian language) www.enova.no/LLj

Poland

A frequent situation in Poland is that the residues originating from the wood-processing production process are often dumped in the landfills or uselessly burnt at the production site.

Even if they are used for heating the premises of the enterprise, usually no attention is paid to

The Bratislava workshop was one in a series of workshops organised by ManagEnergy within the process of facilitating global thinking on strategies for local issues. The aim of the workshop was to support local actors in their capacity building process and in their development of concrete replication strategies. Below you will find summaries of some of the speeches that were held. A complete documentation can be found at www.managEnergy.net

Elmu Potter, Regional Energy Centres of Estonia

DemoEast programme is a part of Baltic Billion Fund 2 with the overall aim to stimulate the development of industry and trade in the Baltic Sea region from a Swedish perspective.

The DemoEast programme objective in Estonia was to promote the pellets firing technology - equipment, and also to inform future clients about the projects' economical and technological outcomes.

The projects included replacement of three light oil fired

boilers by wood pellets burners.

Lessons learned:

- * The existing boiler must be suitable for installation pellet burner

- * The quality of wood pellets is an important factor for good operation of pellets burning equipment - European standards are of big value.

- * Although pellets are more expensive than wood chips, they are often more suitable to use by small plants in municipal buildings.

Fiona Jennings, Renewable Energy Information Office, Ireland

Starting from a low

base, Ireland has been considerable advances in Biomass in recent times, so much so that it is foreseen that some three 50 000 tonne wood fuel production facilities will proceed within the Irish mechanical forest industry and agricultural sector in 2003. This is the result of an integrated action plan comprising market research, information dissemination, organised events, national targets and a funding programme.

As a result of a national Wood Energy Conference, as well as a successful annual wood energy study tour which took place in Sweden in 2002, three potential wood pellet production projects have now emerged in Ireland. All three have applied for feasibility and demonstration support.

The pellet production plants will result in:

Economic benefits: Saving 176 000 tonnes (or 1.3 Million barrels) of oil per year.

Annual savings of Euro 36 million substituting for oil.

Environmental benefits: 250 000



The end of session discussion led by Ann Segerborg-Fick, ManagEnergy.



Good examples to encourage replication is important...



Visit to biomass in Zvolen. The boiler room.

tonnes of CO₂ equivalent
Jobs created: 72

Lessons learned:

- * Key steps for the fast and successful implementation activities is good cooperation and sufficient information transfer - e.g. study tour

- * the funding pro-

gramme has been a driving force.

Jozef Viglasky, SK-BIOM, Slovakia

Being on the list for accession to the European Union, the Slovak Republic will increasingly have to aim at environmentally sound energy generation and utilisation. Therefore, the



Around Europe there are hundreds of regional energy offices. Ann Segerborg Fick is the chief of staff and project leader for the new communication project, managEnergy, that will increase the efficiency in communications with the purpose to promote a development for a sustainable Europe.

rapid growth of alternative energy sources is observed. With abundant biomass resources available, the market for energy from biomass looks very promising.

Biomass energy has the potential to combine economic, environmental and social benefits.

According to the current estimates, the share of renewables will rise to 5% in 2010, of which 40% will be covered by biomass energy (30 PJ). The ultimate potential of biomass energy lies between 100 and 400 PJ/a.

Bioenergy will become increasingly competitive in the coming years: prices for natural gas and electricity rise continuously to international market level as they will be harmonized with the rest of EU. Moreover, fossil fuels, especially brown coal, will be significantly charged with environmental taxes.

Lessons learned:

- * The prices of natural gas are expected to increase which gives biomass better possibilities

- * The larger plants, to be developed, will most probably use wood chips, while smaller plants could be of interest using pellets.

- * 90% of the pellets production is exported, and export is also in the future considered as a great option.

- * What is needed to utilise the potential is information campaigns, training of installers, capacity building through networks, as well as good examples.

Study tours

Three different study tours were organized during the workshop and more detailed descriptions concerning each site can be found on the ManagEnergy web site.

Concluding remarks

- The possibilities for biomass in the candidate countries, as well as in most EU member countries, are very large but stronger financial security is required in most cases.

- The main benefits from biomass utilization are: job creation, regional development, environmental and economic benefits.

- Biomass has the possibility to promote cross-border co-operation.

- Standardisation work regarding both, fuel and equipment, is important to ensure low emissions and also to ensure higher possibilities for increased export within Europe and between members (and future members) countries.

- Driving forces are mainly based on the financial side, but in addition information and education is still important. The importance of business development should not be underestimated.

- Countries with a small internal use of biomass could consider export opportunities as a driving force. This is true especially if we talk about wood pellets.

Summarized by Dorota Natucka from documentation available in www.managenergy.net



International Slovak Biomass Forum

Official opening of the forum (l. to r.): Josef Urmin, Director General of Energy Section, Ministry of Agriculture SR, Onno Simons, Counsellor and Head of Preaccession Section, European Commission Delegation in the SR, Karl Ernst Kellner, Head of Renewable Energy Sources Unit, Energy and Transport DG, European Commission, Belgium, Michael Wild, Director, ABEX, Austria, Gottfried Lammers, Ministry of Agriculture, Forestry, Environment and Water Management, Austria and Josef Urmin, Director General of Energy Section, Ministry of Economy SR

For the third time International Slovak Biomass Forum took place in Bratislava on 3rd and 4th February 2003. More than 150 participants from all over Europe were there. Among conference objectives there was an effort to highlight the importance and perspectives of biomass.

Slovakia has a long tradition of wood processing industry and agriculture. Bioenergy represents a new market potential, which can significantly contribute to competitiveness of Slovak economy and development of backward regions.

Economical, social and other acquisitions of biomass market can be exploited only after reduction of existing barriers, in particular in the field of legislation, supportive mechanisms and information dissemination.

Intern. Slovak Biomass Forum has now become an important event

/Martina Sumenjak, text and photo

Don't forget to look for bioenergy business and political news in [bioenergyinternational.com](http://www.bioenergyinternational.com)

New Alstom plants in Germany

Alstom has been awarded three contracts in Germany, worth a total of approximately 120 mio euro to supply new waste wood-fired plants.

Each plant will have the output of 20 MWe. Waste wood will be used as a fuel in the louvered grate boiler. The plant that were previously constructed by ALSTOM in Germany - Zolling in Bavaria and Landesbergen in Lower Saxony - represents the base for designing the current projects.

Two of the contracts involve turnkey supply of a plant for E.ON Kraftwerke GmbH, Hanover. One will be located in Emden, Lower Saxony, and the other in Stapelfeld, near Hamburg. The first power is expected to be supplied to the grid in December 2004. The third plant is ordered by BMHKW Delitzsch GmbH and the contract also covers the turnkey supply of a plant.

Alstom in Thailand

Two large-scale (40 MW) bioenergy plants in Thailand will be supplied by Alstom Power.

The plants are developed for the Mittr Phol Sugar Corporation and both will be fired by bagasse, rice husks and other wood waste. The process steam and power produced will be provided to nearby sugar mills, and the surplus electricity will be sold to the national grid. Based on a similar design to a plant in Queensland, Australia, the facilities should start to operate early 2004.

energy efficiency.

The idea of an integrated approach to the use of wood waste for heating production has been formulated.

This has led to a project proposal, the main objective of which was to optimise the use of the existing potential of wood-waste for space heating.

(III international Slovak Biomass Forum, Adam Gula: adamgula@ceti.pl, Arkadiusz Figorski: afigorski@o2.pl)

Austria

Austrian agricultural biogas plants are characterised by a small-scale structure.

Currently, twelve biogas plants are operational in Lower Austria, with a total electric output capacity of about 282 kW, producing approximately 1 GWh green electricity p.a.

In 2000 there was about 100 biogas plants across the country.

On 1st January 2003 a tariff ordinance related to green electricity fed into the grid came in to force.

However, this ordinance applies to new plants only.

As a result of the nationwide regulation, which had been expected for a long time already and is the first to be valid for a longer period, a boom in the construction of biogas plants is anticipated.

It is assumed that also municipal plants will be built.

Slovakia

INTERREG III A project - sharing the experience between Lower Austria and Slovak Republic

"Know how transfer from Lower Austria to Slovakia in the field of Biomass District Heating and Biomass CHP" project has started in January 2003 and will last for three years until December 2005.

The action goal is to establish a competence centre for biomass district heating systems, biomass micro-grids and biomass CHP in Slovak Republic.

The Biomass Centre shall, after the time of the project continue its work autonomously. Target group of the Biomass Centre will be investors and potential operators./DN

Hungary

Waste wood burning boiler as part of an ESCO project at a chemical plant in Hungary EETEK (Energy Efficiency Technologies Ltd.) implemented an ESCO project at a chemical factory in Hungary with six energy conservation projects.

The total investment in Euro was 1.26 million of which 160 000 was nonrepayable subvention.

The 71% of the total investment was to install a new biomass boiler house. There were 2 low efficiency steam boilers of 8.5 MW with gas firing at the site.

New boiler house was built and new biomass steam boiler

Simatec gets order from Energi E2

The Largest Wood Dust Filtration Order in 2002

The Danish company Simatec gained the huge filtration order 2002 for the new wood pellet power plant Avedøre II in the outskirts of Copenhagen and Energi E2 A/S, the owner, has chosen SIMATEC again for the next wood pellet power plant at Amagerværket, also nearby Copenhagen. The new transformation of the existing power plant takes place in the spring of 2003.

The project at Avedøre consists of totally 28 filter systems, varying from intakepit filters at a discharge hopper at the quay, over independent belt conveyor filters and silo filters to normal aspiration filters. All of them with different explosion classifications ranging from the very restrictive zone 21 to the more normal zone 22.

When dealing with wood pellets it is necessary, to consider seriously how to

handle dust. Some reasons could be environmental, some contribute to the workers' health, and some are simply safety.

A mixture of wood dust and air can easily be hazardous and cause injuries to people and damage to constructions.

Therefore it is necessary to remove wood dust from the air as soon as possible and to keep the areas

free of dust.

– We have gained the orders at Energi E2 because our company has such an extensive range of competitive filter products that we can cover all types of filtration around the power plant, says sales manager, Anders Larsen.

The New ATEX Explosion Code

For many years in most of the countries

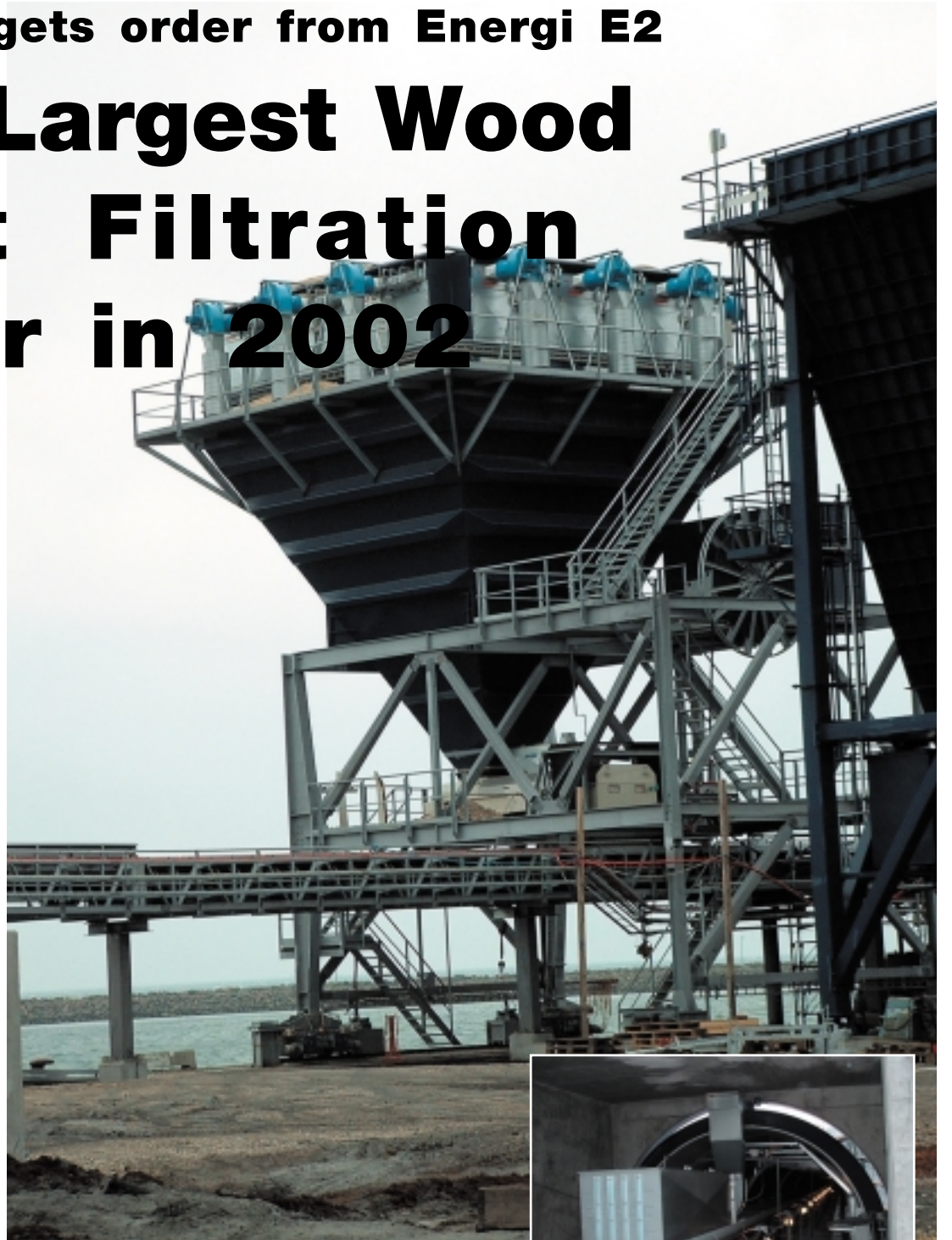
it has been up to the moral of the parties engaged in a project, to decide whether some explosion risk should be considered or not.

As per June 30, 2003 this is no longer the case.

From this date all parties involved (suppliers, planners, advisors, purchasers, and end-users) are obliged

to make risk analyses if explosion risks can occur.

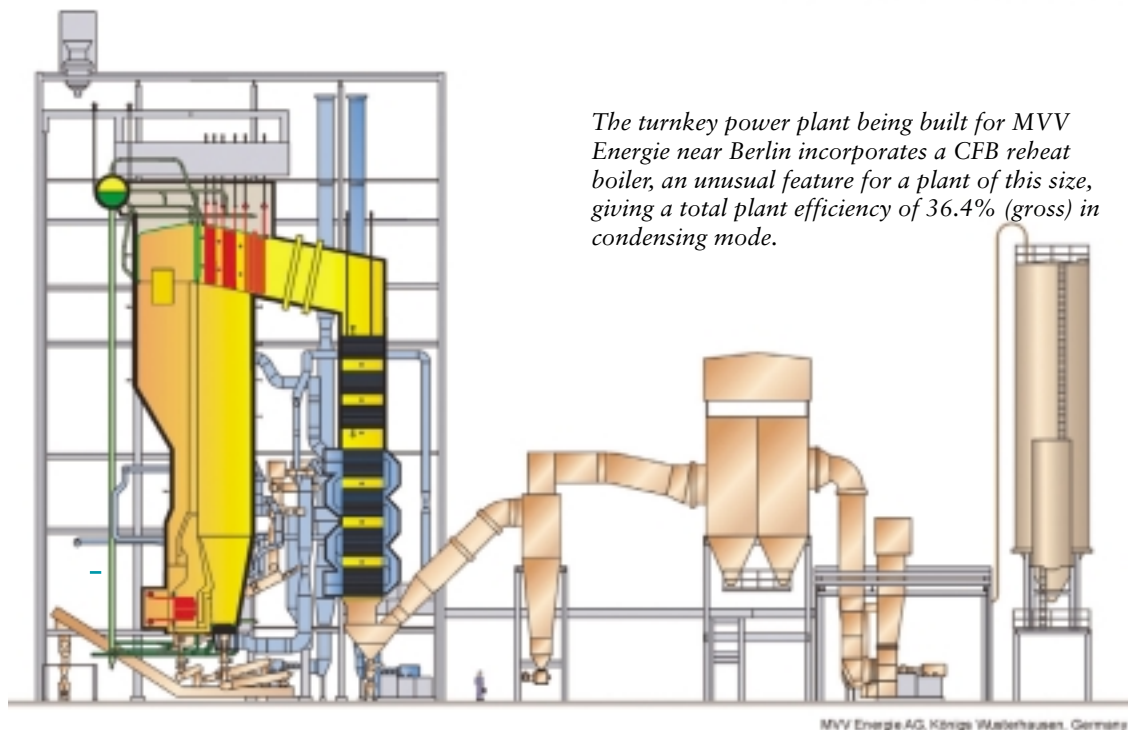
From a time where it has been a grey zone to decide which of the few existing codes in the European countries to apply, we will soon enter into a new era where there will be no doubt of the outcome.



BioPower



www.bioenergyinternational.com



The turnkey power plant being built for MVV Energie near Berlin incorporates a CFB reheat boiler, an unusual feature for a plant of this size, giving a total plant efficiency of 36.4% (gross) in condensing mode.

MVV Energie AG, Königs Wusterhausen, Germany

Demolition wood for power



Kehl 44 MWth

A new bioenergy legislation (*Biomasseverordnung*) passed the German parliament in June 2001. This offers generators a guaranteed electricity price for 20 years from completion of a new plant. The new legislation has launched a wave of new projects in Germany. Three of the contracts was won by Foster Wheeler Oy of Finland.

20 MW e Königs Wusterhauser

The largest in terms of contract value - and Foster Wheeler's first turnkey power plant delivery in Germany - is a 20 MWe plant for MVV Energie at Königs Wusterhausen near Berlin, construction of which started in February 2002.

Due to be commissioned this summer, the design incorporates a reheat boiler, an unusual feature for a plant of this size.

This offers an efficient steam cycle, and

will give a high total plant efficiency of 36.4% (gross) in condensing mode, above the official minimum of 29% set for plants under the biomass legislation.

Fuel consumption will be cut by a factor of 25% compared to a unit meeting the legal minimum for efficiency - an important factor, given possible rises in the cost of demolition wood. Ash output and gaseous emissions will also be lower than in a more standard design.

The plant will be able to burn all four officially specified categories of demolition wood without any impact on emissions.

Barge will be used to deliver around half of the fuel requirement, while the other half will be brought in by road and rail. Fuel will be

held in a storage area capable of holding up to 30 days of inventory. The staged combustion of the CFB and its low operating temperature mean that no NOx reduction measures are needed. Acid components will be removed by injecting limestone, and heavy metal and dioxins and furans by injecting activated carbon.

Kehl 44 MWth

A turnkey 44 MWth CFB boiler island for Harpen Energie Contracting ordered in June 2001 for a site at Kehl in southern Germany was handed over in March this year. The unit is already generating electricity for the national grid and process steam for the adjacent Köhler paper mill.

Papenburg 63 MW
The third demolition

wood-fired contract awarded to Foster Wheeler in 2001 covers a 63 MWth CFB boiler island for a power plant in Papenburg in northern Germany near the Dutch border.

Output from the plant, being supplied to Prokon Nord Energiesysteme GmbH, will be 20 MW of electricity. The plant is at an advanced stage of completion, and is scheduled to begin generation in fall 2003.

The multifuel capability of Foster Wheeler's circulating fluidized bed (CFB) technology makes it ideal when using biofuels with properties such as high moisture content and problematic ash content. Bark, wood chips, sawdust, forest residue, and sludge have all been specified for use in Foster Wheeler boilers - as well as industrial waste and RDF produced from municipal solid waste.

Other CFB benefits include lower levels of NOx, SO₂, and volatile organic compounds (VOCs) emissions;

excellent availability; and high efficiency. The latter is largely due to the higher steam temperatures that can be generated without the danger of corrosion, even with fuel chlorine content as high as 1%, thanks to the use of Foster Wheeler's unique I N T R E X (t m) integrated heat exchangers.

by Peter Herring,
Foster Wheeler
Energia Oy, Finland

was installed.

The capacity of the new biomass boiler is 5MWth. A daily and monthly chip storage was set up. /DN

Sweden Certificates replaces state support for REC

The 1st of May Sweden will start up a system with electricity certificates according to a decision in the parliament in the beginning of April.

All producers of electricity from biofuels, wind, photovoltaics and small-scale hydro will get one certificate per MWh.

All customers must buy certificates to a certain quota of their demand. The first year's 6,7% will increase with 1% per year until 2010.

This will create a market for the certificates.

Thus the customers will pay for and replace all state subsidies for renewable electricity.

Slovenia Steps Towards Sustainability

According to 2002 approved Governmental Decree for Qualified Producers (RES + cogeneration), distribution companies are obliged to buy all produced electrical energy for fixed prices.

The producers can chose between fixed price or market price + fixed premium. The fixed electricity prices are as follows (EUR/kWh):

Biomass: 0,07
Small hydro: 0,06
PV <36 kW 0,28

Wind farms 0,06
Geothermal 0,06

Slovenia introduced in 1997 a CO₂ tax for fossil fuels. The recent change of the CO₂ tax law introduces the possibility to get a decreased CO₂ tax obligation if one is investing in energy efficiency.

With a 4,3 Mio US dollar grant from the Global Environmental Found (GEF) the Slovenian government will support the development of Biomass district heating centrals during the coming years.

Franko Nemas

Bulgaria Strong need for political decisions and investments

Bulgaria has signed the Kyoto protocol and made the commitment to reduce emissions of greenhouse gases by 8 % in the period 2008-2012, compared to 1988 levels.

To avoid the possibility to experience difficulties in the future, the government of Bulgaria adopted a National Climate Change Action Plan (NCCAP). Measures have also been prewieved in the National Program for Energy Efficiency and the National Strategy for the Development of the Energy Sector, approved by the Bulgarian Parliament on July 17, 2002.

Anna Aladjadjiyan
National Biomass
Association of
Bulgaria

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Bioenergy Business News with both an Editorial and a Connection section in which You can publish Your info directly to the readers, without processing the info through our editors

WOOD PELLETS IN BAGS



Fisker Pakkemaskiner A/S is supplying packaging machinery as well as complete packaging lines.

Wood pellets in bags ensure a simple logistic. The pellets can be stored outside and the product can be handled in an easy way.

The machines are based on the well known FFS concept, where the bags are Formed Filled and Sealed at the same time in the machine. The packaging material is PE flat film on reels.

PE on reel is the most economic solution to pack pellets in bags.

We have a lot of experience with wood pellets in bags, and are the market leader in Scandinavia.

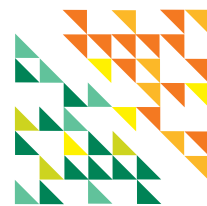


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- locate potential partners for co-operation projects
- meet existing and potential business partners

World Bioenergy 2-4 June 2004

'Additional Study Tours 1st and 5th of June 2004'

– "Taking you from Know-How to Show-How"

For further information please contact

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e-mail info@svebio.se or visit www.svebio.se/worldbioenergy

Elmia

Elmia AB, Box 6066, SE-550 06 JÖNKÖPING, Sweden, Tel +46 36 15 20 00, Fax +46 36 16 46 92
e-mail: bioenergy@elmia.se, www.elmia.se/bioenergy

Presentation



www.bioenergyinternational.com

NORDIC BIOENERGY 2003 International Nordic Bioenergy Conference

a presentation by Professor Dan Asplund, Chairman of the Conference, President of AEBIOM and Executive Director Pekka-Juhani Kuitto, FINBIO

An important meeting, for all people involved in the bioenergy field, will take place next September. International Nordic BIO-ENERGY2003 Conference with Technical Tours and Bioenergy Exhibition will be held in Finland on September 2nd-5th, 2003 (www.finbioenergy.fi).

Nordic Bioenergy Conference has been arranged every second or third year by a cyclic order in Finland, Sweden, Denmark or Norway.

This year it will take place in the heart of bioenergy - in Central-Finland in the City of Jyväskylä.

In Central Finland it is possible to see more bioenergy harvesting systems and different scale of power and heating plants in a day than during a week somewhere else.

Below You will find more information concerning the arrangement, Finland and Finland.

Welcome to Jyväskylä

The EU target is to double the percentage of total primary energy production provided by renewable energy from 6% to 12% by 2010. Electricity production based on biofuels is to be increased ten times above its present level. Another EU goal is to decrease strongly greenhouse gas emissions by the years 2008-2012. Bioenergy plays the main role in all of those targets

Co-operation
Bioenergy 2003 is the

largest conference and event in the field during this year.

It is also more international, practical and business oriented than ever.

Main organizers are: FINBIO with its member companies and organisations together with close co-ordination with SVEBIO (Sweden), DANBIO (Denmark) and NOBIO (Norway) as well as ITEBE (France) and ABA (Austria).

Today biomass represents huge amount of the primary energy use in

all the Nordic countries: in Finland over 25 percent, in Sweden 20 percent, in Denmark 8 percent and in Norway 4 percent.

Moreover the utilisation of bioenergy is growing all the time. Environmentally friendly, safe and secure technologies and know-how methods represent the driving forces of the process.

The biomass utilization in Finland equals more than 25 % (95 TWh) of total primary energy consumption. 20% of electricity is based of bioenergy and that indicates the highest rate in the world.

In Central Finland the bioenergy share is as high as 45%.

Technology

Finland is also the world leader in the development of biomass combustion technology and the manufacture of fluidized bed boilers that are suitable for burning all kinds of biofuel.

The advantages offered by fluidized bed technology include high efficiency and low emissions. Finnish combined heat and power (CHP) plants and technologies for bioenergy are very well known.

Main topics

- * Bioenergy in Nordic Countries and EU
- * Bioenergy Policy and Strategy, Legislation targets in EU
- * Bioenergy Business in Nordic Countries
- * Bioenergy Technologies and Management
- * Local and National Programmes for supporting Bioenergy Use
- * Financial and Market Instruments
- * Administration, Services
- * Newest R&D -results
- * Green Values and Certificates
- * Information and Training

Conference

When You visit the conference You can see in practice the modern power and heating plants, CHP plants and technologies starting from farm size up to the world's biggest constructions.

You can also see numerous biomass combustion and co-firing - unique and modular plants.

Also practical experiences and know-how about various fuel harvesting and transport systems and technologies (chipping methods, compressing logging residuals into the bundles, peat harvesting technologies), management and logistical tools and biofuel receiving and handling technologies will be presented.

The conference
Conference in Finland is not only a parade

into the Finnish modern bioenergy business. It's Nordic, European and global.

Over 70 oral presentations from all over Europe and also poster viewing will guarantee that you can update your knowledge.

English language

The conference is international and will be held in English.

Exhibition

Notice, that You cannot/should not avoid any of the offered events: the Technical Tours, the Bioenergy Exhibition and also the coexistent Forest and Wood 2003 Exhibition to see and touch the real life and favourable-ness of bioenergy.

Welcome to BIOENERGY2003 Conference in September!

"CONNECTING BIOENERGY PEOPLE"

FINBIO is the main association in bioenergy field in Finland and represents all actors of the bioenergy sector (wood-based fuels, peat, recovered biofuels, agrofuels, biogas, bioliquors)

The association works nationally and internationally with the purpose to increase the use of bioenergy

FINBIO is also the country member of Finland in the European Biomass Association (AEBIOM).

Main products:

Conferences (International Nordic Bioenergy 2003, Annual National Bioenergy Conf.)

Seminars (Annual Spring Day, Special seminars),

Publications (books, pamphlets, brochures; Finnish and English),

Quality Manuals for Biofuels and business purposes.

Training Activities, Publishing Energy Articles to the press and comprehensive Bioenergy Web-sites in Finland (Bioenergy in Finland: www.finbioenergy.fi).

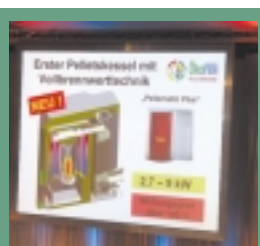
For the members

Finbio also has a lot of activities such as information and Consulting Service, Special Pricecuts for FINBIO-Services,

Member Information-letters with press information

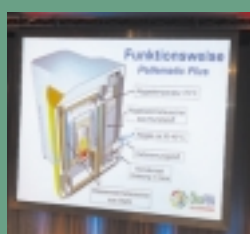
and the BioEnergia-journal with 4 numbers /year supporting bioenergy business and global marketing.

Bioenergy fairs



New Pellets condensating systems

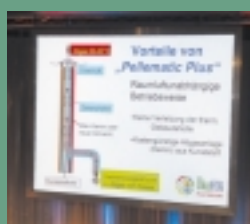
Herbert Ortner from Ökofen presented, among other things, their new pellet boiler for household use with a condensating system.



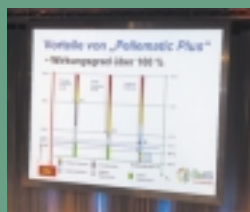
He claims that the boiler will have 8 percent higher efficiency than without the condensating system.



The exhaust gases will only have a temperature of 40 degrees when leaving the system.



The combustion air is transported through the chimney using a separate pipe.



The chimney can be of a simple type, the same model as for pellets stoves.



Wels Yearly update of Bioenergy

Wels 2003 - as always a very impressive arrangement. This year however, there was no Gala with awards for the best renewable project carried out, but the conference was interesting, even though not so much bioenergy aspects were discussed. Generally nice speeches regarding energy efficiency and energy in buildings were held. Not only heating proposals but also the possibility of use of daylight in an innovative way to get healthy light conditions without artificial light use were presented.

An interesting speech was held by Mr Herbert Ortner from Ökofen, one of the manufacturers of pellets boilers. He presented a new invention - a household boiler unit with a condensation system - meaning even higher efficiency and cleaner exhaust gases.

He did also present nice information about pellets storage inside and outside the house. That was also one thing I noticed in the exhibition area - lots of innovative solutions for pellets storage.

Here You will find some of flashes from the large exhibition.

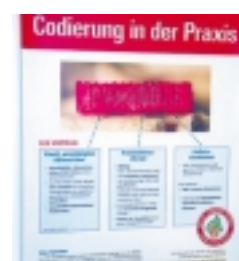


Innovative kitchen stoves from Lohberger

Austrian Lohberger presented a really nice kitchen stove system based on modules. The pellets burner will automatically start and stop, for instance if you come down to the kitchen in the morning the stove is already hot.



Lohberger has models in different sizes including also water systems.



Separate pellets burner

The most dominating system in Sweden is based on separate burners, without local storage connected to the boiler. The advantage of such solution is that you do not have to pay for an extra local storage bin and that instead you can also use wood boilers. Traditionally however, partly because of the state promoting systems, integrated pellets boilers dominate on the Austrian market.

In the exhibition the German company Georg Fischer GmbH showed a similar model combined with a wood boiler. In that case You get both: a good wood boiler and good pellets boiler.



Swedish Iwabo together with Czech Atmos showed the model Iwabo Villa S. They stated "In only 3 hours You can have a functional pellets-burning system"



Marketing the pellets' way

Design and marketing is important in Austria. There are lots of competitors and good image is a necessity. In the upper left corner You can see the Pelletman from the producer called Pellis. You could pick up a sample of pellets packed in a small plastic bag from his tongue?!

and meetings



www.bioenergyinternational.com

of Central European technology



Bioenergy can also have an excellent design. This installation is maybe not the most efficient, but anyhow - it's really nice.

During the exhibition many different models of chips burning systems were shown.

Like most of the systems in Austria they are quite high-tech and equipped with lambda-sond regulation etc. The model from Fisher is one good example. In front you can see the feeder.



Field demonstration in Arezzo



In Italy there are lots of hill slopes and also quite deep ravines - good source of fuel to fulfil some of the bioenergy needs



With a nice cableway system there were absolutely no problem to get this Populus stems up to top.



Another method is to use small multifunctional tractors, which can pull or push the material.



Below the impressive little tractor that can be equipped in different ways.



Legno Energia Arezzo - Toscana

In the beginning of March, in the beautiful Toscana region a little bit south of Firenze, AIEL (the Italian Wood Energy Association) in co-operation with ITEBE and the European Institute for Bioenergy Technology arranged the conference and exhibition in combination with very interesting field excursions.

Itebe is located in north-eastern France and is working internationally, often in

partnership with local companies and associations.

This fair was the first of its kind in this part of Italy.

The exhibition was held indoors as well as outdoors. Inside most of the traditional exhibitors were showing the common equipment for producing fuel and burning it for heat.

Italian technology is quite impressive and I found, for example, a nice combined wood and pellets stove unit

that is shown in the left down corner. When it is not needed the pellets system turns of and when necessary it can automatically start up again.

There are two organisations working with bioenergy on national level in Italy.

Itabia, mostly focused on political matter is located in Rome. The other association, AIEL is more focused on market development, e.g. co-ordinating the exhibitions. Together Aiel and Itebe produce the bioenergy magazine and the first issue of Italian Legno Energia was presented also in



Vice president of Itabia.

the Arezzo exhibition.

Lennart Ljungblom, text and photo



Mr Marino Berton chairman of AIEL.



The official opening walk



Kemyx has a pellets process that doesn't need dry raw material.



The combined wood and pellets stove from Palazzetti



Swedish Thermia also presented their pellet burners.



Integrated Swedish Iwabo unit "Gasell"-wood boiler and pellets burner



Project meeting discussing bioenergy magazine production

Ausilio Bauen WWF



WWF Bioelectricity workshop

15% of Electricity from Biomass in OECD by 2020

AEBIOM steering committee attended the WWF workshop on bioelectricity potential, which took place on Wednesday 19 February 2003 at WWF European Policy Office in Brussels.

WWF commissioned from Imperial College and E4 tech (UK) Ltd a study to determine realistic potential for bioelectricity in the OECD and a draft blueprint for its implementation.

D.Sc. Ausilio Bauen and D.Sc. Jeremy Woods presented WWF bioelectricity vision.

In particular the workshop discussed the following issues:

- Current status of bioelectricity production and economics,
- Realistic implementation potential for 2010 - 2020,
- Environmental and climate benefits
- Sustainability challenges especially

*Text & photo
Martina Sumenjak*



Aebiom steering committee, chairman Dan Asplund to the right.

A crusher for many fields of application

Metso Lindemann extends its range for residual material and waste fragmentation by a further low-speed crusher.

The new CR Crusher, is a low-speed, hydraulically operated dual-shaft pre-grinding crusher with a special combination and geometry of grinding tools.

It is suitable for coarse grinding residual materials and waste at thermal and mechanical waste-utilizing plants, landfills and industrial enterprises, and also for processing waste wood and timber from demolition sites.

Reliable intake of

material, aggressive fragmentizing through the breaking-up and crushing of material both along and across the rotor axes, load-controlled speed regulation, and active fragmentation even during reverse operation, make the new Lindemann CR 225-8 an optimum solution for processing commercial waste, demolition waste, and even such difficult materials as bulky refuse with a high proportion of carpeting and mattresses. The throughput rate ranges up to 50 tons per hour with a driving power of 2 x 132 kW.

The UK Bioenergy Gets Fired UP!

The British government published its long awaited Energy White Paper at the end of February.

They confirmed the UK's commitment to the provisions of the Kyoto Protocol and its own ambitious targets for renewable energy.

By 2010, 10% of the UK's electricity supply must come from renewable energy (wind, pv and biomass are the priority sectors), rising to 20% by 2020.

In addition, the UK has set a target of a 60% reduction in total CO2 output by 2050. Nuclear power has been given the

thumbs down for the fore-seeable future, emphasising the commitment to renewables.

Some large offshore wind-power schemes are now going ahead and work is speeding up at regional level to produce workable bioenergy strategies that will supply industry and communities with all scales of bioenergy in the future.

Forestry owners and farmers are starting to look at biomass as a real alternative to agricultural crops and the UK's current 8% woodland cover is set to increase dramatically in the next few years.

This anticipated

development is a tremendous opportunity for all UK and international manufacturers and consultants in the bioenergy area to get involved with the UK's bioenergy market. Windborne International has already established a cluster of bioenergy companies, the Anglo-Nordic Bioenergy Partnership, and is actively preparing strategies in the East Midlands and North East. Anyone wishing to know more about this project or the UK market, please contact David Jackson

*David Jackson
Windborne
International Group*

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Willow heats farm in North Yorkshire

Gareth Gaunt is owning and operating Paddock House Farm, a 60 acre multi-purpose site at Wetherby in North Yorkshire.

He is growing his own fuel and produce heat for an award winning office complex, two large houses, a cottage and other large outbuildings and sheds.

The combuster is a 150 kW C3 from Talbott.

Installed in 5 days

It took approximately 4 weeks from the date of order to manufacture the plant. The installation of the system took 5 days and was done during the Christmas Holiday period in December 2002.

The plant needs 10-20 cubic meters of fuel per week during operation. The full turnkey project in total equated to approximately 50000 Euros including the

district heating scheme and pipework costs.

– The system is so efficient it qualifies for the maximum enhanced capital allowance which means we can write down the full capital cost of the system in the year of purchase, Gareth Gaunt says.

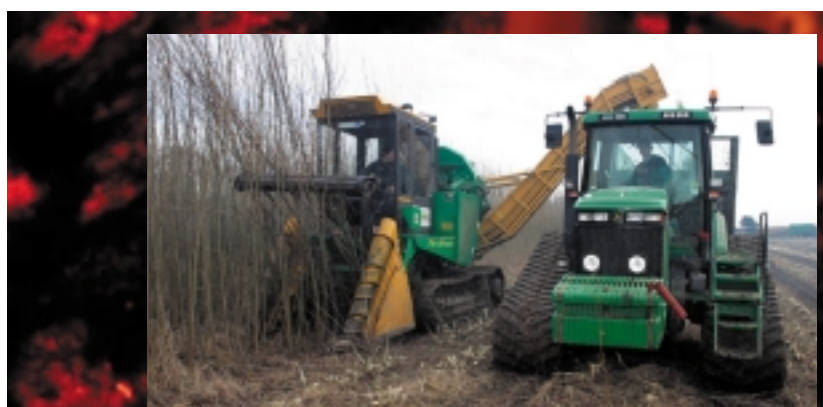
This is in accordance of the tax incentive scheme.

More information on the scheme is available on www.eca.gov.

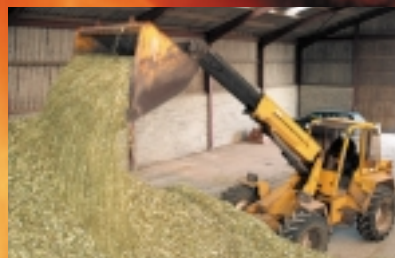
Biomass market

Gareth Gaunt has 30 acres of short rotation willow coppice which he harvests and shreds. The fuel is fed into the combuster from a fully automated hopper.

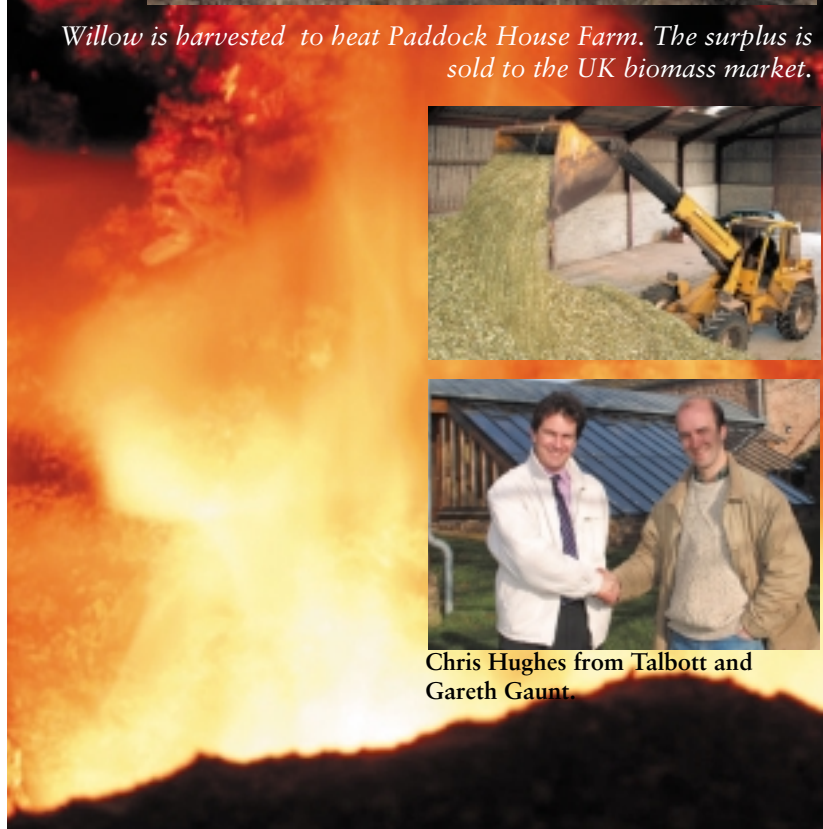
The fuel grown on the site is adequate for the boilers requirements and the surplus fuel is sold into the UK Biomass market.



Willow is harvested to heat Paddock House Farm. The surplus is sold to the UK biomass market.



Chris Hughes from Talbott and Gareth Gaunt.



UK

In January British Energy Minister Brian Wilson announced that a total of 11 UK bioenergy projects are to benefit from £4.2 mio funding.

The funding is intended to help establish energy sources such as poplar, willow and forestry residues as viable for bioenergy projects.

Projects include woodfuel heating installations a carbon-neutral CHP scheme for 200 homes in Essex, and installation of woodchip and forestry waste boilers in Scotland.

Finland

A new National Action Plan for Renewables has been launched. It is more ambitious than former Plan made in 1999. The New Action Plan was supervised by Ministry of Trade and Industry and FINBIO (Finnish Bioenergy Association) was also an active partner in the preparation group. The target is to increase the use of renewable sources at least 30 % (95 PJ) by the year 2010 from the level of the year 2001 (317 PJ, without peat). The use of biogas will get 6-fold, REF's 10-fold, direct forest fuels 4-fold, wind power 16-fold and solar power also 16-fold increase. Bioenergy will increase absolutely the most, the bioenergy target share of total RES is 85 per cent.

Media

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Market actor

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6th Framework Programme Renewable Energy Technologies and Socio-economic Tools

Last minute update on Medium to Long Term Research Actions Took place in Charlemagne Building in Brussels, on 14th February this year, /

Martina Sumenjak



Biomass Conference in Leipzig

The Institute for Energy and Environment under the patronage of Germany Energy Agency, organised a Biomass conference, March 13th in Leipzig.

There were representatives from 12 middle and east European countries:

Polen, Slovakia, Czechia, Hungary, Bulgaria, Romania, Estonia, Latvia, Lithuania, Belarussia, Slovenia and Germany.

The delegates presented the status for bioenergy in their respective countries.

In general there are VERY low level of energy efficiency and very low percentage of biomass use.

The conclusion was to strengthen the co-operation and to join to the south-east European Region for Biomass and other RES

Martina Sumenjak

One of the leading producers of fuel from peat and wood in Finland, Vapo; is expanding it's activity in the Baltic area.

In Sweden Vapo purchased Råsjo Torv AB at the beginning of 2001, and in November 2002 it acquired a 95% holding in the Estonian bio-fuel and energy company AS Tootsi Turvas.

Vapo's director, Juhani Hakkarainen, says that Vapo Energia's clear goal is to increase the utilization of local bio-fuels in the Baltic area.

Simultaneously our aim is to promote the use of peat in energy production and increase the use of wood fuels in combination with peat.

In our estimation wood, peat, pellets, energy crops, recovered fuels and wind power complement each other. We

are in a position to replace the utilization of imported fossil fuels with these alternatives.

Promising prospects

According to Mr. Hakkarainen the prospects are currently promising where local fuels are concerned. They have demonstrated their competitiveness and environmental friendliness. In addition the European Union is concerned about the performance of its member countries' energy supply and the decline in self-sufficiency.

Local players

In Finland Vapo Energia has played a pioneering role as a supplier and user of local sources of energy. Råsjo and Tootsi are in a corresponding position in Sweden and Estonia. Together we command considerable international

expertise and at the same time provide energy users with a local partner.

Private entrepreneurs

In Finland local private entrepreneurs are responsible for the production and transportation of fuel. We operate on the same entrepreneur led principle in Sweden. Activities are managed locally.

Vapo Energia's role is to build a reliable and professional chain of operation from forest or mire to the customer, Mr. Hakkarainen explains.

He adds that Vapo is also aware of its responsibility for the environment.

In all of our activities the aim is to achieve energy savings and the highest possible efficiency when it comes to the exploitation of natural resources. At the same time we make

every effort to keep our own impacts on nature as little as possible.

For example in peat production we are concentrating on exploiting those peat bogs which are already in use.

Even more, we produce peat exclusively in those countries where more peat is formed than it is used.



Vapo Energia's Director Juhani Hakkarainen.



Through its acquisitions Vapo has become a producer of wood pellets. Vapo Energia's turnover in 2002 came to 225 million Euro.

Vapo is a multi-business group, 66.66% of which is owned by the state of Finland and the remaining 33.34% by the forest industry group Metsäliitto. The group's turnover amounted to EUR 434.4 million in 2002.

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Calendar



www.bioenergyinternational.com

April
7 - 12,
Hannovermesse
Hannover, Germany
www.hannovermesse.de

9 - 11
Renewable Energy Sources and District Heating Days
Hradec Králové, Czech Republic
www.parexpo.cz/oze

28 - 30
Restructuring the Energy Sector in Transition Countries
Congress Center, Leipzig, Germany
www.restc.com

May
13 - 15
Sustain 2003
Amsterdam, The Netherlands
www.sustain2003.com

15 - 17
2003 Resolution South America - Renewable Energies Trade Show and Conference
São Paulo, Brazil
www.wbe.com.br

21 - 22
All -Energy Opportunities 2003 The Conference and Exhibition
Aberdeen, UK
www.all-energy.co.uk

26 - 28
2003 RES for Islands, Tourism and Water Desalination
Crete, Greece
www.erec-renewables.org

26 - 30
Ligna
Hannover, Germany
www.ligna.de

June,
5 - 8
2003 8th China International Environmental Protection Exhibition and Conference (CIEPEC)
Beijing, China
www.chinaenvironment.com/ciepec2003

13 - 15
Euroforest 2003, Saint-Bonnet-De-Joux, France
www.euroforest2003.com

26 - 29
Biomasse 2003 Straubing
www.biomasse-gmbh.com

27 - 28
2003 Renexpo International Fair and Conference
Augsburg, Germany
www.energie-server.de

July
7 - 9 ,
Clean Air 2003 - 17th International Conference on Energy for a Clean Environment
Lisbon, Portugal
www.navier.ist.utl.pt/cleanair/

25 - 28
Biomasse Energie 2003
Libramont, Belgium
www.itebe-expo.com

Sept
2 - 5
Bioenergy 2003
Jyväskylä, Finland
www.finbioenergy.fi

18 - 19
WoodEnergy 2003
Augsburg, Germany
www.holz-energie.de

25 - 28
Forlener 2003
Biella, Italy
www.forlener.it

29 - 30
SLOBIOM 2003
Ljubljana, Slovenia
www.slobiom-zveza.si

October,
10 - 12
2003 Shanghai International Renewable Energy Expo
Shanghai, China
e-mail:liuhui0508@online.sh.cn

21 - 23
2003 Sustainable Energy Expo
London, UK
www.sustainable-expo.org

10 - 12
2003 China International Conference and Exhibition on Renewable Energies
Shanghai, China
e-mail: weszhou@online.sh.cn

28 - 31
3rd International Conference for Renewable Energy; Energy Saving and Energy Education
Havana, Cuba
www.ispjae.cu/eventos/cier

November,
20 - 23
Bois Energie
Cahors, France
www.itebe-expo.com

2004
February,
16 - 20

Envitec 2004
Düsseldorf, Germany
www.messe-duesseldorf.de

17 - 20
February, SMA 2004 6th Environment Exhibition
Zaragoza, Spain
www.feriazaragoza.com

May,
11 - 13
Victam International 2004, Exhibition and Conference
Jaarbeurs Halls, Utrecht The Netherlands
www.victam.com

June
2-4
World Bioenergy 2004
Conference and exhibition on biomass for energy Jönköping, Sweden
Elmia - Svebio
www.elmia.se/bioenergy
www.svebio.se/worldbioenergy

4th INTERNATIONAL SLOBIOM CONFERENCE

Biomass and other RES for South-East European Region Hall of the National Council of the Republic of Slovenia 29th and 30th September Ljubljana, Slovenia

The main topics of the conference will be the economics instruments for biomass and other RES implementation in south - east Europe.

www.slobiom-zveza.si



TONI IN MEMORIAL

On Saturday, December 7 2002, we said goodbye to our friend and co-worker Toni, Anton Sabul, at the Mihovljan cemetery in his hometown Ćakovec in Croatia. He was born there 59 years ago.

His life was his music, art, nature and in his last years with more focus on sustainable development mainly for south eastern Europe where he lived together with our friend and co-worker Martina.

For two short years I had the fortune to work with Tony, not so regularly and mostly on distance, but close enough to understand that we have lost a dedicated sole.

Our magazine as well as many other in the renewable world will miss him.

Together with Martina we will keep on working in the spirit of Tony to make the world a better one - a sustainable world.

Lennart Ljungblom with staff and friends.

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BIOENERGY 2003

International Nordic Bioenergy Conference and Exhibition
Jyväskylä Paviljonki Fair and Congress Centre, Finland
From 2nd to 5th of September 2003

Nordic Bioenergy Conferences have been held every second year by a cyclic order in Finland, Sweden, Denmark and Norway. The Conference will be a focus on the factors affecting the future of the bioenergy, biopower and biobased modern technologies and products. The conference will be held at the same time with Wood and Forest Exhibition.

- Conference with about 70 oral presentations and over 50 poster viewing from over 20 countries
- Technical tours and visits to practical bioenergy sites
- International Bioenergy 2003 Exhibition
- Social and cultural programme
- Language: English

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Conference Information

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Exhibition Information

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