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### FOCUS NEWS
A global partnership leads the world!  

### DIARY
The scarcity of fossil energy resources will lead to a rise in prices for energy sources in the medium term. This means that efficient utilisation of primary energy will become even more important in the coming years. As a result of this trend, an increasing number of operators are already investing in technologies to increase the efficiency of their wood-fired heating plants.

by Roger Stahel

The «SaveEnergy» technology offers appropriate solutions and combines flue gas cleaning with heat recovery. The thermal potential is up to 30% of the nominal capacity of the boiler. This large potential is due to the high water content of forest wood chips. The water evaporates during the combustion process, drawing heat from the wood firing system. With the «SaveEnergy» technology, the steam is condensed back to flue gas and the lost heat is recovered. In thermal networks the heat from condensation is frequently used to raise the return flow of the network. Average return flow temperatures below 50°C are decisive.

Flue gas cleaning that pays off!

Temperature management
In most heating networks return flow temperatures below 50°C can be achieved through targeted measures. Temperature management identifies the worst consumers. In a second step, specific measures are derived and evaluated economically to improve consumers. In most cases the return flow temperature can be improved significantly by adjusting control points.

Flue gas condenser
In a flue gas condenser, process water is injected into the flue gas where it vaporises into fine droplets. The numerous tiny drops of water act as a heat exchanger. The process water absorbs the heat from the flue gas and is fed to the customers via a plate heat exchanger. The large heat exchanger surface (overall droplet surface) guarantees high thermal efficiency. Since the water drops are constantly forming in the flue gas, the condenser is not prone to soiling.

The flue gas condenser is at the heart of the SaveEnergy technology.
Wet electrostatic precipitator
The wet electrostatic precipitator precipitates solids via an electrostatic field. The solid is charged electrically via discharge electrodes and subsequently spalls on the precipitation pipes.

The low temperatures of the flue gas after condensation result in a reduced volume flow which makes the compact design of the wet electrostatic precipitator possible. The wet electrostatic precipitator runs in fully «wet» operation. This process ensures 100% availability of the flue gas cleaning function.

Water treatment system
The water treatment system cleans the condensate for the process and its introduction into the sewerage system. After water treatment, the condensate has a solid fraction of less than 5 mg/l.

IS SaveEnergy AG is your partner for energy-efficient solutions in the field of wood energy. We offer all-round solutions for heat recovery and flue gas cleaning.

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Roger Stahel | CEO
IS SaveEnergy AG
Harmonious company anniversary
In July 2011, Schmid AG celebrated the company’s 75th anniversary. At an open day event guests were offered an insight into production and were able to view the new building true to the motto «discover – experience – enjoy». The culinary delicacies, drinks and refreshing ice cream proved popular in the refreshment tent. Around 1,500 sausages, 500 Asian dishes and 1,700 ice creams were consumed. The youngest guests were entertained in the Children’s Paradise with pony rides, face-painting and the play bus. 2,000 visitors made their way to Eschlikon for the open day event. Celebrations with customers and employees were held on Friday and Saturday evening. A total of 800 guests were accompanied through the lively evening programme by Claudio Zuccolini, a comedian from Grisons. The highlight was certainly the farewell speech by Hans-Jürg Schmid, who, after 52 years in the company, handed over the reins of Schmid AG to his son-in-law Philipp Lüscher. After a delicious meal and a generous dessert buffet, the lounge proved an inviting place for a relaxing get-together. 

More photos at: [www.schmid-energy.ch](http://www.schmid-energy.ch)
The global energy market is characterised by an increasing demand for renewable energies and a scarcity of fossil energy sources. Austria can look back on a long tradition of renewable energies and, with its large areas of forest, in particular on wood energy. Renewable energies account for around 38% of domestic energy production, with the largest part accounted for by biomass. Hydro-electric power is, by far, the second largest contributor, with a percentage of around 30% of domestic energy production.

**Attractive market for biomass firing systems**

Austrian politicians have long focussed on biomass firing systems which enjoy optimum conditions for successful and sustainable energy policies. The constant rise in energy consumption, the uncertain future of fossil fuels in general and the policy-makers ensure that Austria remains an attractive market for biomass firing systems. As a result, there is a demand for high-quality and high-performance products and customised solutions.

**Customer proximity thanks to restructuring**

Schmid AG has been providing its own sales and customer service in Austria since the middle of 2011. In recent years, individual objects were installed but the market was not actively developed. In order to optimise both customer proximity and response times, the division was restructured and re-organised. Various biomass firing systems were sold even during the set-up phase. René Eisenegger is the regional representative responsible for Austria. He has been with Schmid AG for some time and will help to develop this market. Additional regional representatives will also focus on providing optimum and reliable customer service and support in the future. Customised solutions in the planning and operation phases will be in the forefront.

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**Contact details for the regional representative for Austria**

René Eisenegger, Postfach 42, CH-8360 Eschlikon
rene.eisenegger@schmid-energy.ch
Phone +41 (71) 973 74 37

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**Reference object in Austria**

Hotel Gasthof Post
AT-6272 Kaltenbach
Phone +43 (5283) 2411
www.diepost.info
hotel@diepost.info
The Gasthof Post Hotel lies in the heart of the Zillertal mountains and enchants its guests with its cosy atmosphere. The personal service in this family-owned hotel guarantees a marvellous stay, whether in winter or in summer. The well-being of guests is the prime focus. This includes a perfectly designed infrastructure with comfortable rooms that have been recently renovated. The Höllwarth family also places great emphasis on their use of renewable energies. Since November 2006, a Schmid moving grate firing system with an output of 700 kW was installed in the hotel. Matthias Höllwarth, owner and manager of the hotel, operates the wood-chip furnace himself and is delighted with it: «This is one of the best investments I have ever made. We are proud to be making an active contribution to our environment.»

**KEY FACTS**

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<thead>
<tr>
<th>Client</th>
<th>Hotel Gasthof Post</th>
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<tbody>
<tr>
<td>AT-6272 Kaltenbach</td>
<td></td>
</tr>
<tr>
<td>Planning/installation</td>
<td>Garber GmbH</td>
</tr>
<tr>
<td>AT-6275 Stumm im Zillertal</td>
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<tr>
<td>Fuel</td>
<td>Wood chips</td>
</tr>
<tr>
<td>Boiler type</td>
<td>UTSR-700.32</td>
</tr>
<tr>
<td>Moving grate firing system</td>
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<tr>
<td>Output</td>
<td>700 kW</td>
</tr>
<tr>
<td>Discharge</td>
<td>Push feeder floor</td>
</tr>
<tr>
<td>Flue gas dedusting</td>
<td>Multi-cyclone</td>
</tr>
<tr>
<td>In operation since</td>
<td>November 2006</td>
</tr>
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</table>
A modern school for Rothenthurm

The ground-breaking ceremony for the school building and the event centre in Rothenthurm took place in April 2008. Only two years later, in August 2010, the school was able to open its doors for around 170 students.

The heating system contractually agreed with OAK Schwyz was started up for the first time on 11 November 2009. The required heat is provided by two Schmid pellet firing systems with outputs of 150 kW and 65 kW. The silo charging system was designed so that the system can easily be modified for use with dry chips. The fully automated system is characterised by especially low emissions and very high efficiency. The ash from the combustion is transported directly into two 240 l containers by means of a screw conveyor. This reduces the need for maintenance dramatically.

An even greater level of operating reliability was achieved with the design of a bivalent double boiler system with two round discharges. In addition, the ideal hot water solution was found for the summer.

Wood and sun – the ideal combination

A large buffer storage tank was installed to optimise operating efficiency and emission levels. This has greatly reduced runtimes of the firing system. In the first year, around 60 tons of pellets were used and more than 220,000 kWh of useful energy was produced. In addition, a 749 m² large PV system has been installed on the roof of the schoolhouse (output up to 101.3 kW).

### KEY FACTS

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<tbody>
<tr>
<td>Contractor</td>
<td>OAK Energie AG</td>
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<tr>
<td>HVACR</td>
<td>Betschart Energie- und Haustechnik, Goldau</td>
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<td>Size of silo</td>
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<td>Hot water</td>
</tr>
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<td>Boiler types</td>
<td>Schmid Lignumat</td>
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<tr>
<td>Boiler output</td>
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<tr>
<td>Wood chip silo</td>
<td>150kW &amp; 65kW</td>
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<tr>
<td>Silo discharge</td>
<td>350m³ net</td>
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</table>
Expanded range for log firing systems

Our range was expanded with the «Easytronic 40/50» to provide our customers with even better solutions in log firing systems.

1. Self-adjusting doors that can be attached on either side and fitted with a safety lock
2. Large hopper up to 250 litres for easy charging and refilling
3. Fully cladded in cast iron panels to provide optimum protection and prevent tar build-up
4. Primary and secondary pusher to ensure constant adjustment of the combustion air volume
5. Feed and return flow connections, optionally with a pre-assembled hydraulic group
6. Double chamber conical injector with zero potential
7. Water-cooled substructure for prolonged service life
8. Active adjustment of combustion process with lambda control
9. Lambda sensor and flue gas sensor
10. Easy to clean heat exchanger for constant high performance
11. Integrated ash drawer in the base of the boiler

<table>
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<tr>
<th>Boiler type</th>
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<th>Hopper in l</th>
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<th>Fill level Height mm</th>
<th>Weight in kg</th>
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<td>50 (56)</td>
<td>250</td>
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<td>980</td>
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<tr>
<td>Easytronic-50</td>
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<td>50 (56)</td>
<td>250</td>
<td>H: 1700 / W: 870 / D: 1300</td>
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<td>980</td>
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</table>
New system for the Old City

After completion of the final stage of the community heating system in Bremgarten, the output of around 5,300 tons of CO₂ per year will be eliminated and more than 1,960,000 litres of heating oil per year will be saved. As the contractor and service planner respectively, AEW Energie AG and Carnotech AG are responsible for the execution of this large project. They have been supported by the engineering office Steinmann IGP from Baden. As early as the end of May 2009, 150 customers in Bremgarten were supplied with heat from the underground heating plant near the school in Isenlauf. Work on the second partial project «Expansion of the community heating system and renewal of the electricity network in the old city of Bremgarten» began on 6 April 2010.

82 per cent CO₂-neutral heat

AEW Energie AG operates the community heating system, which supplies the heat for various municipal and private buildings in Bremgarten. Around 82% of the heat required is generated using CO₂-neutral wood chips. The wood is sourced mainly from the Bremgarten Forest close by. To this end, a long-term contract was entered with the local wood chip supplier Forstbetrieb BWW located next to the forest.
FOCUS TECHNOLOGY – Expansion of the community heating system in Bremgarten

Technical details on the community heating system

The total installed capacity for thermal output is 8,500 kW. In the Old City alone a connected load of 1,600 kW is available. A total of 191 customers are supplied with heat. Since the start-up in 2009, over 30,000,000 kWh of thermal energy have been generated. The overall thermal network is 11,300 metres long.

Contracts have been signed with a further 41 customers and dummy connections laid. A waiting list has been created for other potential customers. During the year it will be clarified whether those interested can be connected during the next expansion phase. When the system is fully completed, a total of 5,300 tons of CO₂ emissions will be eliminated per year. According to measurements of fine dust carried out by a certified company, contamination through fine dust caused by the heat generation plant is well below the mandatory limit value.
Scrap and waste wood yards
Both yards have a volume of 3,000 m$^3$ each.

Wood deliveries
In 2010, over 24,000 tons of biogenic materials were supplied.

Heating using scrap and waste wood
The company Nitrochemie Wimmis AG is able to cover its heating requirements of 2.7 million litres of heating oil with 26,000 megawatt hours of steam.

You will find a description of the unit with more photos on the following pages
Cogeneration plant
The two generators provide more than 2,400 megawatt hours of district heating and over 3,000 megawatt hours of electricity per year to external consumers.

Fermentation plant
Biogenous materials are placed in the six box-shaped fermenters (fermentation tanks). The actual fermentation process takes about 28 days.

Compost windrow
The compost windrows are turned regularly to aerate them by automatic turners. This encourages organic conversion and decomposition to compost.

Waste wood and compost yard
The storage process for drying and maturing is accompanied by regular sampling and analyses.

**KEY FACTS**

- **Client**: Oberland Energie AG, CH-Spiez
- **Project planning**: Dr. Eicher + Pauli AG, CH-Bern
- **Fuel**: Forest and sawmill wood chips, prunings, scrap wood
- **Utilisation**: Process steam and district heating
- **Discharge**: Push feeder floor
- **Boiler types**: 2 x UTSR-5000.32, moving grate firing system
- **Output**: Steam facility with 2 x 6 t/h
- **Filter technology**: Multi-cyclone and electrostatic precipitator
- **In operation since**: April 2011
- **Savings in heating oil**:
  - 2.8 million litres of heating oil per year (through a scrap wood firing system)
  - 3.1 million litres of heating oil per year (whole biomass centre)
- **Savings in CO₂**:
  - 10,000 tons per year (whole biomass centre)
Oberland Energie AG sets new standards
Oberland Energie AG, a joint venture of AVAG AG and BKW FMB Energie AG, is setting new standards with the biomass centre in Spiez. The fermentation facility, scrap and waste wood heating and the compost facility all help to combat the problematic aspects of composting and promotes utilisation of renewable energies, thus making a significant contribution to a CO₂-neutral domestic energy supply.

Infrastructure and conversion process
In addition to the actual recycling of biogenous waste, the focus is on utilisation of the energy potential. The biomass centre in Spiez comprises three sections:

Fermentation plant
In the initial phase around 1.5 million m³ of gas is produced each year. In a CHP plant the gas is used to power two generators which provide external consumers with more than 2,400 MWh of district heating and over 3,000 MWh of electricity per year. This «eco-electricity» is fed into the grid. The district heating supplied to the ABC Laboratory in Spiez means around 240,000 litres of heating oil can be saved each year. After the fermentation process, the digestate is cleaned of impurities and then refined to produce high-quality compost or substrate.

Heating using scrap and waste wood
In addition to wood from roots and trunks, scrap wood is also used for firing. This produces steam for Nitrochemie AG in Wimmis and also district heating for the ABC Laboratory in Spiez. The 26,600 MWh of steam provides the equivalent heating at Nitrochemie of c. 2.7 million litres of heating oil or the impressive figure of 135 tankers. In addition, the 1,859 MWh of district heating, which is also supplied to the ABC Laboratory in Spiez, corresponds to another 185,000 litres of heating oil. Plans are underway to connect other consumers to the district heating network.

Compost unit
The fermented biomass is processed to produce high-quality compost (awarded the «Knospe» label of Bio Suisse) and substrates. Oberland Energie AG now runs a biomass centre in Spiez where modern technology transforms the material and energy flows from biogenous materials to achieve the maximum degree of efficiency. This returns the role of a high-quality fertiliser and soil ameliorant back to nature, which is also an important storage repository of CO₂.
Selected components in the heating plant

Feed water preheater

Electrostatic precipitator

Steam superheater

Process diagram

Supply

Proportion of woods

Garden and forest waste

Fermentable proportion

Fermentation plant

District heating
ABC Laboratory in Spiez
Nitrochemie Wimmis AG
Self-sufficiency
Potential for further customers

Electricity

Compost

District heating
ABC-Labor Spiez
Potential for further customers

Process steam

Heating using scrap and waste wood

Scrap wood
FOCUS TECHNOLOGY – Community heating system Felben-Wellhausen

The heating network as a diagram

KEY FACTS

Client
Wärmeverbund, CH-Felben-Wellhausen

Planning for heating
Kurt Raschle GmbH, CH-Rickenbach Sulz

Fuel
Virgin wood chips

Discharge
Bent arm discharge

Boiler types
Double boiler facility

UTSK-360 / UTSK-550

Output
360 kW / 550 kW

Flue gas dedusting
Multi-cyclone and electrostatic precipitator

In operation since
June 2011
The station in Felben-Wellhausen has been supplied since July 2011 with its hot water in the community heating system using two underfeed stoker firing systems with a total output of 910 kW. The community network has a length of 2,100 metres. 90 apartments in two building complexes, 10 family houses as well as the village hall, school and parsonage are the beneficiaries of this eco-friendly and economically sound energy technology.

Enshrined in the general principle
The genesis of this community heating cooperative can be found in the general principle followed by the municipality of Felben-Wellhausen. The local council has set itself the objective of improving energy efficiency and the utilisation of renewable energy sources. The cooperative was founded in October 2010; work started in February to install the heating plant in the goods shed which the municipality purchased for that purpose. The heating systems were started up for the first time in June and hot water has been available since July. «We have achieved something. Everyone involved can be proud», says Werner Dietiker, satisfied chairman of the Community.

Impressive savings
The Schmid wood firing systems save 150,000 litres of heating oil per year or the equivalent of 380 tons of CO₂. The community heating system was designed as a double boiler system with one 360 kW unit and one 550 kW unit. The smaller firing system provides optimum power for partial loads in summer, as well as ensuring high redundancy for the whole facility.

Intelligent charging
The wood chip hopper has a special charging solution. A feed screw embedded in the ground transports the wood chips in a vertical screw conveyor and lifts them up into the silo. In the silo, two bent arm discharges load the wood chips into the two boilers. The discharge process for the two wood chip firing units is independent of each other although the same silo is used.

Total compliance with limit values
The filter system comprises a multi-cyclone fitted directly next to the boiler and one electrostatic precipitator per firing system. This filter system ensures that the current limit values defined in the Swiss Clean Air Act are safely complied with in each load area. The dust level is < 20 mg/Nm³.

The wood for heating comes from the local forest of the municipality and from private sources. Annual consumption will be around 3,000 m³ of wood chips, explains Werner Dietiker. This means sustainable forestry and grey energy can be kept to a minimum thanks to the local energy source.
The brand names Knaus and Tabbert have been firmly linked since 1996. What started back then as a cooperation between KNAUS AG and TIAG (Tabbert Industrie AG), was renamed «Knaus Tabbert» in 2002 as a united corporate family. The company today unites six brands under the umbrella of Knaus Tabbert GmbH and employs almost 1,200 people at four locations in Germany and Hungary. In addition to Germany, more than 20 countries around the globe are supplied with caravans, campervans and coaches «made by Knaus Tabbert». The main production site for the «Knaus» brand is located in Jandelsbrunn, close to the Czech border and by the well-known Baroque town of Passau in Lower Bavaria.

When the double firing system from a competitor was no longer able to comply with the mandatory flue gas values, the decision was taken to install a new firing system. In view of the large percentage of wood used in caravans and the resultant amount of waste wood from production, the decision to install another wood firing system was not difficult. Schmid’s moving grate firing system UTSW-3200 was delivered and installed in July 2011. Existing components (silo, conveyor system and the flue gas filters) are still in good condition and could be retained. The system was started up at the end of August 2011 and since then has been supplying process heat for gluing wood and heating all the company buildings.

Thanks to the latest firing technology and optimum utilisation of energy, the waste wood from the production of caravans can be used as a fuel. Customers particularly appreciate the fact that «production waste» is used for heating. This cannot be taken for granted because this waste wood has special fuel properties. Due to the low water content and low ash melting point, a special firing model is required and Schmid is the only company to offer this type in the market. The water-cooled moving step grate UTSW is eminently suited to this fuel.
Maintenance and servicing of the unit is performed by Knaus Tabbert itself. In the event of a failure, the 24-hour service offered by Schmid AG can be used; in addition, the remote maintenance function can be activated, which means the status of the system can be checked at any time.

Collaboration between Knaus Tabbert and Schmid AG is going extremely well and is most certainly one of the reasons for the smooth execution of the project to date. We are looking forward to continuing this great team work.

**KEY FACTS**

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<tr>
<th>Client</th>
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<td>IB Reischl</td>
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<tr>
<td>DE-94118 Jandelsbrunn</td>
<td>DE-94051 Hauzenberg</td>
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<tr>
<td>Fuel</td>
<td>Wood shavings from the wood industry</td>
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<td>Operating medium</td>
<td>Hot water, 5 bar</td>
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<td>Boiler type</td>
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<tr>
<td>Output</td>
<td>Moving grate firing system</td>
</tr>
<tr>
<td>In operation since</td>
<td>3'200 kW</td>
</tr>
<tr>
<td></td>
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Leisure centre for all-year-round activities

The Conseil Général du Jura is the owner of the Bellecin sports and leisure centre on the banks of the Vouglans reservoir in the French Jura mountains. The current buildings, with a floor area of around 2,000 m² were not used in winter since the centre concentrated mainly on outdoor activities such as sailing and rowing. In future, the centre will be open the whole year round.

The Conseil Général du Jura decided to renovate the building and extend both the facilities and the activities offered. The team led by Reichardt- Ferreux together with the technical design bureau Fluides Lazza-rotto was awarded the architectural tender. The residential building was converted as part of the renovations. It now has functional rooms with their own bathrooms. New additions, with a floor area of around 2,500 m² are the gymnastics hall, a dojo, a weight-training room and a climbing hall. An indoor swimming pool is also planned.

Advantages of the «wood option»

For the heating system, the technical design bureau compared the option of a wood-oil system for the whole centre with one using two oil-fired boilers (one per building).

The installed system is operated and serviced by the Bellecin centre together with Schmid AG. The heating system is installed in the building and the silo has been installed as an underground tank in the ground next to it. The tank can be accessed from above through a wide sliding door.
FOCUS TECHNOLOGY

The Bellecin sports and leisure centre in the heart of the Jura mountains relies on wood energy

**Client**
Conseil Général du Jura, FR-39 000 Lons Le Saunier

**Installation location**
Base nautique de Bellecin FR-39200 Orgelet

**Architects**
Reichardt-Ferreux FR-39 000 Lons Le Saunier

**Project planning**
BET Fluides Lazzarotto FR-39200 Saint-Claude

**Fuel**
Wood chips

**Boiler type**
UTSR-450.32 Moving grate firing system

**Output**
450 kW

**Discharge**
Push feeder floor

**Silo**
Double-chamber of 150 m³ each

**Flue gas dedusting**
Multi-cyclone

**In operation since**
November 2010

KEY FACTS
### Hakumatsu Co., Ltd., Tsushima, Japan, 700 kW

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<tbody>
<tr>
<td><strong>Utilisation</strong></td>
<td>Evaporation of sea water for salt production</td>
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<tr>
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<td>Wood chips and forest wood chips</td>
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<td><strong>Output</strong></td>
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### Willmott Dixon & NG Bailey, Hereford, Great Britain, 300 kW

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### Landgoed de Hotlweijde, Lattrop, Holland, 360 kW

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<tr>
<td><strong>In operation since</strong></td>
<td>March 2011</td>
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Daniel Hubmann is the world champion in orienteering sprint

The orienteering sprinter Daniel Hubmann won the sprint gold medal at the World Championships 2011 in Chambéry, France. Hubmann, 28 years old from Thurgau, won his 13th world championship medal in Chambéry. The world champion of the last four years won his first gold medal in sprint. Previously he had won twice, in the long distance race (2008, 2009) and once in the relay (2009).

Hubmann ran a perfect race: «My feeling before the World Championship in sprint was very good; training results and competitions had shown that this is currently my strongest discipline. Everything went perfectly in Chambéry.»

Daniel Hubmann will defend his gold medal at the next world championship in 2012 in Lausanne.

We wish Daniel Hubmann all the best for his preparation for the 2012 season!
**DIARY 2012**

17.01. – 21.01.2012  
Swissbau, Basel (CH)  
www.swissbau.ch

02.02. – 05.02.2012  
Fieragricola, Verona (ITA)  
www.fieragricala.it

23.02.-26.02.2012  
Tier & Technik, St. Gallen (CH)  
www.tierundtechnik.ch

01.03. – 04.03.2012  
AgriMesse, Thun (CH)  
www.agrimesse.ch

08.03. – 12.03.2012  
Xylexo, Milano (ITA)  
www.xylexo.com

22.03. - 25.03.2012  
BOIS ENERGIE, Saint-Étienne (FR)  
www.boisenergie.com

18.04. – 21.04.2012  
IFH/ Intherm, Nürnberg (DE)  
www.ifh-intherm.de

23.04. – 27.04.2012  
Hannover Messe, Hannover (DE)  
www.hannovermesse.de

27.04. – 06.05.2012  
Bea, Bern (CH)  
www.beapferd.ch

04.10. – 07.10.2012  
Bauen & Wohnen, Luzern (CH)  
www.fachmessen.ch

11.10. – 21.10.2012  
Olma, St.Gallen (CH)  
www.olma.ch

08.11. – 11.11.2012  
Hausbau & Minergie, Bern (CH)  
www.hausbaumesse.ch