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Corrosion in boiler systems often results in cracked pipes. In thermal oil systems this often entails the increased risk of an additional uncontrolled release of energy and the risk of fire. There are no scientific reports or research results available on the issues of scrap wood firing systems in combination with thermal oil systems. Therefore we will fall back on the field reports on high temperature corrosion in boiler systems to deduce the corresponding risks for thermal oil systems.

Based on extensive experience with steam generators in waste incineration plants, the corrosion mechanisms on the flue gas side can be assessed. The first investigations were carried out at the waste incineration plant Düsseldorf-Flingern from 1978 to 1980; the well-known Flingern corrosion diagram was derived from them (Fig. 1). Since the question of high temperature corrosion is also an issue in biomass heating plants, it is of increasing interest today for scrap wood boilers.

**Fundamentals**

When firing with scrap wood an increased percentage of chlorine, sulphur and nitrogen should generally be expected. There are also higher concentrations of Si, Ca, Na, Fe, Al etc. in comparison with untreated wood. These halogens not only lower the ash melting point on the grate but also migrate in ash particles to areas with high pipe wall temperatures to form reactive molten salt. The formation of reactive Cl2 in flue gas that attacks the heat exchanger surfaces is of primary importance for high temperature corrosion. We assume that the higher the flue gas temperature and wall temperature of the material in question, the worse the resistance to corrosion.

Furthermore, high thermal flows, high loads or chlorine or halogens as well as high CO content also act as additional accelerants of corrosion. The lowest possible flue gas temperatures in heat exchangers and the lowest possible thermal flows (large heating surfaces) with complete burn-off of flue gases (low CO values) before the heat exchanger inlet are aimed for as countermeasures.

**Analysis of scrap wood plants with boiler**

Fig. 2 shows conditions at the evaporator surfaces of three scrap wood firing plants (plants 1-3) as reference values. The pipe wall temperatures in thermal oil plants lie in the range 260 – 350°C, which matches the evaporator surfaces in the boiler systems. The boiler in Plant 1 is fired with forest wood, scrap wood A I / A II and sawmill by-products, shows marked traces of corrosion. Live steam is superheated to 520°C at 90 bar. The critical pipe wall temperatures at the evaporator heating surfaces are accordingly around c. 315°C. In Plant 2 steam is superheated to 60 bar, 450°C. The pipe wall temperatures at the evaporator heating surfaces are correspondingly lower at 280°C. Despite firing with wood from classes A I to A IV, corrosion is less pronounced than in Plant 1. Wood from classes A I to A IV is also used in Plant 3. With slightly higher steam parameters than Plant 2, with 65 bar and 450°C and pipe wall temperatures around 283°C, only slight traces of corrosion can be observed.

**Thermal oil plants**

Thermal oil plants for untreated fuels operate at flue gas temperatures without recirculation after the combustion chamber of 900 – 950°C with thermal oil flow/ return temperatures of c. 310 / 250°C. The corresponding pipe wall temperatures of a maximum of 320°C with the maximum flue gas temperature of 950 °C would result in a much higher risk of corrosion if contaminated wood were also used.

Thermal oil temperatures of 250 – 310°C combined with flue gas temperatures of over 850°C inevitably cause pipe wall temperatures in the corrosion risk area. Therefore it is extremely important to lower the flue gas temperature upstream of the boiler. In the corrosion diagram the option of a boiler with flue gas circulation and additional fire or corrosion protection has been added.

Since SNCR treatment of flue gas requires flue gas temperatures of > 850°C and burnout of flue gases at low temperatures is aimed for simultaneously, especially attention should be paid to ducting for combustion air and flue gas. Larger heating surfaces are required in order to transfer the corresponding heat capacity.

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**FOCUS MARKET**

Report by Dr Peter Heusser and Dr Stefan Plesko, I.C.E. AG

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New partnership between Burkhardt and Schmid

Schmid accepts agency for wood gasifiers in a cogeneration plant

Burkhardt – tradition and innovation
The company Burkhardt Energie- und Gebäudetechnik can look back on 134 years of history. It began as a village blacksmiths in 1879 and today is an internationally active company with around 300 employees with its headquarters in Mühlhausen (Germany). In addition to the business sectors heating, ventilation, sanitary installations and plumbing, Burkhardt is also active in the energy industry and offers a unique wood gasifier in series production with a cogeneration plant.

Electricity and heat generation
The rising prices for fossil fuels and the discussion about climate change as well as phasing out nuclear power have given rise to a renaissance in wood gasifier technology. The problems inherent in wood gasification until recently appeared to be a sheer insurmountable problem: with impure gasification tar oil forms which causes lasting damage to the efficient motors of today. Efficient operation of wood gasification plants was unthinkable for many years.

The development team at Burkhardt discovered a breakthrough in 2010. A new approach was needed to the gasification process and the use of pellets and standardised fuel were also required in order to give the whole system the necessary impetus for success. With the conversion of the cogeneration plant from vegetable oil to woodgas the team succeeded in packaging a unique, highly efficient energy package for generating electricity and heat. In addition, the contemporary, attractive design underlines the clean, modern technology.

Burkhardt’s wood pellet gasifier, together with the cogeneration plant, generates 270 kW of thermal capacity and 180 kW of electricity with an overall efficiency of up to 80%. The system has been installed at over 100 sites in Germany and Italy. In total over 1 million hours of operational experience have been gathered.

Schmid accepts agency for Burkhardt
With Schmid, Burkhardt has found a reliable and experienced partner for sales in Switzerland. Schmid is delighted with this cooperation and has been offering the system in the Swiss market since the autumn of 2013. Selected export markets will also be supplied with the gasifier from Burkhardt in the medium term.

Benefits for you:
• Integrated planning of plants
• One-stop delivery / assembly / commissioning
• Customer service with full maintenance contracts and remote control operation

Key figures at a glance
Wood gasifier and cogeneration plant as one unit

<table>
<thead>
<tr>
<th>Wood gasifiers:</th>
<th>Type V3.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cogeneration plant:</td>
<td>ECO 180 HG</td>
</tr>
<tr>
<td>Electrical capacity:</td>
<td>180 KW</td>
</tr>
<tr>
<td>Thermal capacity:</td>
<td>270 KW</td>
</tr>
<tr>
<td>Pellet consumption:</td>
<td>c. 110 kg/h</td>
</tr>
<tr>
<td>Pilot oil consumption:</td>
<td>c. 4-5 l/h</td>
</tr>
<tr>
<td>Plant efficiency:</td>
<td>net el. &gt; 30%</td>
</tr>
<tr>
<td>Overall efficiency:</td>
<td>c. 75%</td>
</tr>
<tr>
<td>Residue:</td>
<td>Ash/coke</td>
</tr>
</tbody>
</table>
New services in our After Sales Service

Remote access, remote diagnostics and remote maintenance

It is no secret that regular servicing and professional service are the most important steps to have a positive impact on the operational safety and operating costs of a plant.

Our declared aim is to assist our customers to a more efficient and failure-free operation, as far as possible, of their wood firing system. Remote diagnostics, i.e. “a glance from afar” often means that an incident can be located, limited and - depending on the problem - resolved via telephone support from our headquarters in Eschlikon. This saves the occasional expensive field visit.

Three subscription options

After installation, remote access, this new portal solution for the future can be used with a simple basic subscription «Remote Light». The question of “safety” is given the very early and regular attention. After installation, remote access, this new portal solution for the future can be used with a simple basic subscription «Remote Light». The question of “safety” is given the very early and regular attention. After installation, remote access, this new portal solution for the future can be used with a simple basic subscription «Remote Light». The question of “safety” is given the very early and regular attention.

For operators of older plants that are not fitted with the touch panel version 2010 or later model, this new portal-based solution can be installed after conversion or an upgrade to the new operator- and maintenance-friendly control system.

We will be happy to advise you and send you an offer tailored to your needs.

For customers who wish for more extensive support in addition to the basic offer, we recommend our service agreement “Remote Standard”. The main advantages compared to “Remote Light” are that our specialist support team checks and analyses the operation data of the customer’s plant at regular intervals. Not only is the best possible operation ensured, but this option also means that we can take action proactively if necessary.

“Remote Top” as the ideal start

We perform an in-depth analysis and optimisation of operations to create the basis for maximising value for the customer with our “Remote Standard” option. This is why we recommend our offer “Remote Top” for optimum adjustment of new installations during the first years of operation. An experienced specialist from our support team will examine the plant and compile a catalogue of measures. This Schmid specialist will support the customer during conversion and will check the effects over the period of one year. An year-end report is then compiled on the results achieved.

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New model for discharge

Suction system for pellet firing systems
Lignumat UTSL

The pellet fired systems in Schmid series Lignumat UTSL 30 – 150 kW can now be fitted with a suction system for transporting pellets.

The suction system transports the pellets fully automatically from the pellet store to the hopper attached to the boiler. The suction turbine is integrated in the boiler unit. An integrated double rotary valve between the storage container and the stoker tube ensure perfect backfire protection. Transporting via the suction system give you a free hand when planning and constructing the boiler room and the storage room.

There’s almost no limit to the options for discharge and material transport. In addition to the suction system with individual suction sensors, the Lignumat UTSL can also be combined with the rotary or central screw discharge. There is also the option to use an underground tank as an alternative to a traditional silo in the interior.

Operator-friendly touch panel
Upgrade option for series UTSL and PESS

All pellet and wood chip firing systems from the series Lignumat UTSL and PESS can be fitted optionally with a new touch panel. The large 7” touch panel with exceptional response speed offers high resolution, clear and easy operation as well as a scratch-proof real glass surface. Retrofitting an existing plant can be done without difficulty. The tried-and-tested membrane keyboard is still offered as standard.
Eischoll is situated on a mountain terrace on the left bank of the Rohne, 1,220 metres above sea level. A typical village of the Valais, with around 500 inhabitants spread over an area of 14 km². In collaboration with Renercon Betriebs AG, Eischoll Energie AG has created a community heating system with an impressive performance rating.

After a construction period of only one year the new community heating system was inaugurated in an opening ceremony in August 2013. The district heating system comprises a moving grate firing system UTSR-900 and two UTSR-550 and has a total capacity of 2 million kilowatt hours. Currently there are 62 connections or 250 households - including community buildings, hotels, holiday homes and schools - connected to the network. Total heating oil requirements for the community have been reduced by 90 % already - an exceptionally pleasant result in terms of sustainability.

**High profitability through flue gas recovery**

The flue gas is piped to the company IS SaveEnergy via a central flue gas cleaning and heat recovery unit. The overall efficiency of the heating system is increased by 15 % via the flue gas condenser. The wet electrostatic precipitator cleans the flue gas in all operational states independent of the flue gas flow rate and temperature. Thanks to the three-stage flue gas cleaning system (cyclone, flue gas condenser and wet electrostatic precipitator) the official measurements for dust are significantly below the legal threshold. The community of Eischoll has implemented the very highest ecological and economical standards with its SaveEnergy plant and is optimally equipped for the future.

**Locally sourced wood**

In order to ensure all-round sustainability, long transport routes should be avoided when sourcing fuel. In Eischoll the moving grate firing systems from Schmid are mainly fired with forest woodchips from the community-owned forest.

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**Network plan for district heating in Eischoll**

Red objects: Customers connected since October 2012

Blue object: Heating plant

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**KEY FACTS**

**Contractor**
Eischoll Energie AG
CH-3943 Eischoll

**Installation site**
Raazubiel, CH-3943 Eischoll

**Project planning**
Renercon Betriebs AG
CH-8934 Knonau

**Application**
District heating

**Fuel**
Forest woodchips

**Boiler types**
Schmid moving grate firing systems UTSR-900.32 and 2 x UTSR-550.32

**Capacity**
2 MW

**Discharge**
Push feeder floor

**Silo**
755 m³

**Flue gas dedusting**
Multi-cyclone / wet electrostatic precipitator

**In operation since**
January 2013
The first steam boiler was built at the end of the 18th century. During the age of the Industrial Revolution the system established itself particularly in processes of widely differing factories. Today many areas of industry are unimaginable without steam boilers, for example the food industry (milk processing, whisky distilleries) for generating electricity using steam turbines. But they are also used in public buildings, for example in hospitals or laundries.

With increased ecological awareness and rising prices for fossil fuels, recent years have seen increased demand for steam boilers with biomass firing systems. This applies primarily to the small and medium operating range. In order to satisfy this trend, Schmid energy solutions has developed a standard range with a capacity from 0.3 to 6 MW. Boilers with biomass firing systems are well suited as base load boilers with their slow response time, i.e. for customers who need constant steam discharge with a narrow range of deviation.

Schmid boilers are available in the following categories:

<table>
<thead>
<tr>
<th>Boiler (ton/h)</th>
<th>Firing system</th>
<th>3 pass boiler Operating pressure</th>
<th>Protection Operating pressure</th>
<th>2 pass boiler</th>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>UTSR/UTSK</td>
<td>5 – 8 bar</td>
<td>10 bar</td>
<td>-</td>
<td>-</td>
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<tr>
<td>0.7</td>
<td>UTSR/UTSK</td>
<td>5 – 8 bar</td>
<td>10 bar</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1.2</td>
<td>UTSR</td>
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<td>10 bar</td>
<td>11 – 14 bar</td>
<td>16 bar</td>
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<tr>
<td>1.6</td>
<td>UTSR</td>
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<td>10 bar</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
</tr>
<tr>
<td>2.0</td>
<td>UTSR</td>
<td>5 – 8 bar</td>
<td>10 bar</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
</tr>
<tr>
<td>3.0</td>
<td>UTSR</td>
<td>5 – 8 bar</td>
<td>10 bar</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
</tr>
<tr>
<td>4.0</td>
<td>UTSR</td>
<td>5 – 8 bar</td>
<td>10 bar</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
</tr>
<tr>
<td>5.0</td>
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<td>-</td>
<td>-</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
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<tr>
<td>6.5</td>
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<td>-</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
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<tr>
<td>8.0</td>
<td>UTSR</td>
<td>-</td>
<td>-</td>
<td>12 – 15 bar</td>
<td>18 bar</td>
</tr>
</tbody>
</table>

All boilers from Schmid are built and fitted in accordance with EN-12953 (24h) or TRD604 (72h).

The corresponding accessories are offered for the different types of boiler:
- Boiler feed water pumps with cut-off valves
- Thermal water degasser for feed water treatment
- Sludge and decompression cooler
- Steam regulation and reducing valves

FOCUS TECHNOLOGY – Process steam from biomass

Let off steam!
Focus Technology – Process steam from biomass

Adelphi Distillery – Scotland
The Adelphi Distillery Limited in Glenborrodale Castle was founded in 1826 and today is one of the most prestigious bottlers for single cask whisky. Only high quality whiskies without chill filtering and added colourants are marketed by Adelphi.

The new distillery is on the west coast of Scotland on the Ardnamurchan peninsula, with its characteristic scree slopes and dense woodlands. A UTSR-1200 with a saturated steam boiler of 1.6 t/h at 7 to 8 bar has been installed to supply the distillery with steam. Feed water is piped in by two pumps with frequency control. An underground silo is used to store the woodchips which are poured in through a silo cover from a lorry.

Since several steam-heated stills are used in production, but the steam is also used for mashing and cleaning the stills, the amount of steam the distillery requires is subject to large fluctuations. The decision was taken not to install a gas-fired reserve boiler. The customer therefore decided to install a 30 m³ steam accumulator with a pressure reducing station. This was supplied by Imperative Energy, together with other peripheral parts of the installation. Imperative Energy has been a successful distribution and service partner of Schmid for the last six years and covers the markets England, Ireland and Scotland.

New maternity clinic, Bethesda Hospital in Basel
Since September 2013 the Bethesda Hospital is able to offer its patients comprehensive skilled care, maximum comfort and a wide range of services in an ultra modern maternity clinic.

The delivery room and the postpartum rooms have been designed according to the latest medical research. Great emphasis was placed on comfort. The women and their relatives should feel comfortable all round. Rooms flooded with light offer wonderful views outside and the park with its old trees is a wonderful place for the first walks outside with Baby.

During construction of this new clinic the heating plant of the hospital was converted to biomass. An underground silo with a drive-on silo cover was installed. The core of the new heating system is a saturated steam boiler SDK-0.9 with 850 kg steam at 8 bar operating pressure. The Schmid firing system is used for supplying steam as well as for the heating system. Steam is used in the hospital primarily in the laundry, kitchen and for sterilising. However, it is needed at irregular intervals and with marked peaks which is not the optimum scenario for a biomass fired boiler with a slow response time. So a further unit needed to be found that could supply constant energy throughout the year. This was done with the installation of a steam to hot water converter which enables excess steam to be fed into the heating and service water network of the hospital.

This allows the steam boiler to act as a base load boiler throughout the year. A gas-fired steam boiler was also installed as a reserve and peak load boiler. A UTSR-550 hot water boiler was installed to cover increased heating needs during the winter months; it can be switched on according to weather conditions.
FOCUS TECHNIK – Carinthia’s largest skiing region is heated using sustainable raw materials

Looking to the future

In Nassfeld, Carinthia’s largest skiing area, sustainability is a major factor in its image as a holiday attraction. Therefore the heating systems of most hotels have been converted to eco-friendly district heating.

Sophisticated automation system
The initiative for this project came from hotel owners and was supported actively by the local installation company and the planning office. The Nassfeld project can certainly be described as unique in Austria. The system is based on a sophisticated automation system and is operated fully automatically. Manpower is not required. Those responsible were able to inspect in advance similar projects completed by Schmid.

And this system does not pose any problems when delivering fuel. The lorry driver can access the site himself, unloads the fuel into the pit and enters its quality on the control system. From there the fully automatic crane sorts the fuel into the allotted storage area, depending on humidity, type of wood and quality. The fuel is weighed during sorting and the humidity level of the delivery is measured. Since no samples of the material are taken and it cannot be passed through a special drying process, this method means deliveries are calculated in ADT (air dry tonne). The hoisting gear places the woodchips on the push feeder floor that is separate from the storage room, unlike other heating plants. From the silo a screw moves the woodchips inside to a second screw that feeds the boiler. Since a crane, and not a loader, is used this means that not only is the risk of fire from possible compacting reduced, but also a larger storage capacity could be created. Maximum storage is around 76 days in all-out operation. For a heating plant located at altitude a large-scale storage facility is of the utmost importance. Because access during the winter is not always possible for lorries, depending on the weather.

Heating plant with 2.4 MW capacity
A moving grate firing system with 2.4 MW capacity was installed. The multi cyclone is mounted directly in the rear section of the boiler for reasons of energy efficiency. This means that no heat is lost and condensation cannot form inside the cyclone. An electric filter cleans the flue gases.

Future expansion
Although most of the hotels in Nassfeld have now been connected to the heating plant, there are still some interesting options for expansion. One is to supply the Italian side of the Nassfeld skiing area. However, first it must be clarified whether importing heat is legally permitted in Italy. It is certainly technically possible to supply customers on the other side of the border. Preparations have been made for a possible expansion of the heating plant. All connections for a further 2.4 MW boiler have been installed.
Neutral report recommends wood as energy source

The raw material wood has great energy potential which can be used optimally to generate heat. In a region such as Arnsberg, with over 60% forest cover, this eco-friendly energy generation method practically lends itself.

Energy-neutral report
On the route to a wood fired heating plant the Stadtwerke Arnsberg (SWA - public utility company) together with the administrative organisations for schools and sport facilities commissioned an energy neutral report that was completed in January 2009. At that time the declared aim was to install a central heating system at Berliner Platz, but the type of heat generation had not been decided. Four different options for generating heat were assessed. Ultimately it was clear that heating with wood as the raw material offered optimum heat generation, both economically and ecologically.

The location for the new heating plant was selected on the site of the old swimming baths at Berliner Platz, directly next to the schools. This was also an impetus for the urban development of the campus. In addition, the central location and short pipeways were ideal for a local heating network.

Wood fired heating plant for the Berliner Platz local heating network
The wood fired heating plant at Berliner Platz has been supplying heat to a total of 13 school buildings in the Hochsauerland area and the city of Arnsberg (Germany) since the winter of 2012/2013. A heating network of 2,174 km length provides more than 5,100 MWh thermal energy per annum. It has been calculated that more than 800 metric tonnes of CO₂ are saved each year. The local heating network can be expanded to meet demand in the coming years.

Three modules for heat generation
In order to be able to adapt the amount of heat flexibly to meet demand, three modules have been combined. The wood firing system with an capacity of 900 kW produces over 80% of heat. In order for the biomass boiler to function effectively, it must be run constantly and a minimum heat consumption must be ensured. The boiler is designed to meet basic heating needs from autumn through to spring. Fluctuations in capacity are compensated via a buffer storage unit and the run-time and control mode of the wood fired boiler optimised.

When it is not cold enough to operate the biomass boiler economically, the gas fired boiler is used, which also covers peak loads on especially cold winter days. The cogeneration plant utilises the waste heat from the combustion processes. During the summer months this waste heat is sufficient to provide hot water. In winter the waste heat compensates for network loss, i.e. the energy lost in distribution. The cogeneration plant is heat controlled and only starts up when there is a corresponding need for heat.

Successful cooperation
Mayor Hans-Josef Vogel is pleased with the successful cooperation between town and region: “Utilisation of renewable energies is one of the challenges we have to face.” With this project of a wood fired heating plant at Berliner Platz the Stadtwerke Arnsberg have proved emphatically that they have assumed a new role as energy provider while maintaining their traditional customer orientation. The company plans on a massive expansion of this new business division in the coming years so as to offer attractive and sustainable energy products in Arnsberg. In addition, value creation is stimulated in the region. Local companies are involved in construction, maintenance and operation of the heating plant.

CO₂ substitution
800 t p.a.

In operation since
December 2012

Marc Padberg from Stadtwerke Arnsberg, Head of Energy Service Division

"Local forests offer sufficient potential to ensure the supply of woodchips."

Contractor
Stadtwerke Arnsberg GmbH
DE-59823 Arnsberg
Location
Wood fired heating plant at Berliner Platz
DE-59759 Arnsberg
Project planning
ISW Ingenieur GmbH
Schmidt & Willmes
DE-59755 Arnsberg
Installation
Gebro Herwig Haustechnik GmbH
DE-59821 Arnsberg
Fuel
Woodchips
Fuel requirements
c. 1,500 t p.a.
Boiler type
UTSR-900.32
Capacity
900 kW
Silo
297 m³
Flue gas dedusting
Multi-cyclone
Amount of heat from wood
4,080 MWh p.a. (80%)
Amount of heat from cogeneration plant
208 MWh p.a. (4%)
Amount of heat from gas
810 MWh p.a. (16%)
CO₂ substitution
800 t p.a.
Interim results and expansion with a biomethane cogeneration plant

The Zweckverband Abfallwirtschaft Kreis Bergstrasse (ZAKB - special purpose association for waste management in the Bergstrasse district) is a public corporation founded with the aim of jointly carrying out individual tasks which the towns and communities in rural districts are required to perform. Members include 16 towns and communities as well as the district itself.

The tasks of ZAKB include the provision of services in the field of waste disposal for commercial and private customers. Each day ZAKB empties 7,000 refuse bins filled with green waste, paper and residual waste. Container services, bulky waste collection and house clearances are also offered.

In 2009 ZAKB decided to address the question of energy generation from photovoltaic panels and utilisation of the biomass accumulated in the district, as well as landfill gas and biogas. Three years later the biomass heating plant in the district hospital of Heppenheim was put into operation.

The plant, which essentially comprises a 1.6 MW woodchip fired boiler, supplies the Heppenheim district hospital, the Vitos Clinic and a local heating network. The amount of heat required is generated to 80 % by renewable energy. ZAKB uses prunings delivered by residents in the Bergstrasse district to ZAKB collection stations and processes them to woodchips. Due to the less than optimum flow characteristics of the fuel, a crane was installed to feed the push feeder floor. The crane operates fully automatically and mixes the different qualities of material supplied using software supplied by Schmid. This ensures the same mixture of fuel is fed to the push feeder floor.

Since its installation, around 2,750 tonnes of woodchips have been used to generate heat for the community heating system. Only 20 % of heat required is generated from fossil energy sources (natural gas). Last year the heating plant generated c. 7,250 MWh of heat. This corresponds approximately to the amount of heat required by more than 320 family households. The amount of heat generated largely by regenerative energy substitutes around 725,000 litres of heating oil.

In order to optimise plant operation and to generate an even higher percentage of heat from renewable fuels, the plant was extended in the autumn of 2013 with a biomethane cogeneration plant. With a thermal capacity of 428 kW, the cogeneration plant covers the base load for heat for the community heating system of the Heppenheim District Hospital. It also generates electrical capacity of 400 kW p.a., around 3,000 MWh of electricity.

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**FOCUS TECHNOLOGY – Biomass heating plant in the district hospital of Heppenheim**

Interim results and expansion with a biomethane cogeneration plant

www.zakb.de
When Tamara Gätzi finished her training as business administrator at Schmid energy solutions, she stayed with the company - first as project management assistant, later in the backoffice of sales and since 2012 she became Area Sales Manager Export. In addition she completed her federally recognised professional baccalaureate and is currently trained to become Marketing Manager.

Area Sales Manager in technical sales at only 25 years old, how did this unusual career come about?
My duties as project management assistant awoke my interest in technical matters and along the way I had more and more contact with exports. We term all markets where we don’t have a subsidiary as export markets, e.g. United Kingdom, Scandinavia, also the USA or Japan. Since I speak English very well, I became involved more and more with Export Sales, acquired the necessary specialist knowledge and was able to build up contacts.

I have been working as a sales consultant for export for two years now and I really enjoy travelling and meeting our partners. I look after our partners as well as individual projects in various countries.

What sales model does Schmid follow for its exports?
Our main focus is on building long-term, stable partnerships. With a local presence, intensive training and liaison by Schmid, we are able to maintain our standard of quality abroad.

In countries where we don’t have a partner we look after the end customers from our headquarters.

Which markets are especially interesting and why?
Generally speaking, countries are interesting that have large forest areas and a need for heating. Therefore the Scandinavian countries and Northern Europe are certainly interesting. But also South America, for example, where biomass is used widely to generate process steam.

We also see great potential in generating electricity with smaller capacity installations.

**Other reference objects**

**Lancaster University, Lancashire, UK, 950 kW**
- **Contractor**: Rotary NorthWest
- **Application**: District heating
- **Boiler type**: UTSR-1200.32
- **Fuel**: Woodchips
- **Operating medium**: Hot water
- **Capacity**: 950 kW
- **Discharge**: Top loader
- **In operation since**: January 2013

**Kagoshima, Kagoshima Pref., Japan, 900 kW**
- **Contractor**: Kagoshima University
- **Application**: Hot water, cooling and heating
- **Boiler type**: UTSR-900.32
- **Fuel**: Woodchips
- **Operating medium**: Steam
- **Capacity**: 900 kW
- **Discharge**: Push feeder floor
- **In operation since**: August 2011

**NO-Fagernes, Valdres Biovarme AS, Norway 1’200 kW**
- **Contractor**: NO-Fagernes, Valdres Biovarme AS
- **Application**: District heating
- **Boiler type**: UTSR-1200.32
- **Fuel**: Woodchips
- **Operating medium**: Hot water
- **Capacity**: 1,200 kW
- **Discharge**: Push feeder floor
- **In operation since**: 2013
15/01 – 18/01/2014
Biomass Conference, Graz (AT)
www.cebc.at

16/01 – 19/01/2014
Swiss Expo, Lausanne (CH)
www.swiss-expo.com

21/01 – 25/01/2014
Swissbau, Basel (CH)
www.swissbau.ch

20/02 – 23/02/2014
Tier & Technik, St. Gallen (CH)
www.tierundtechnik.ch

27/02 – 02/03/2014
AgriMesse, Thun (CH)
www.agromesse.ch

08/04 – 11/04/2014
IFH, Nürnberg, (DE)
www.ifh-intherm.de

09/04 – 13/04/2014
OFFA, St. Gallen (CH)
www.offa.ch

25/04 – 04/05/2014
Bea, Berne (CH)
www.beapferd.ch

03/06 – 05/06/2014
World Bioenergy, Jönköping, (SE)
www.worldbioenergy.com

02/10 – 05/10/2014
Bauen und Wohnen, Lucerne (CH)
www.bauen-wohnen.ch

09/10 – 19/10/2014
Olma, St. Gallen (CH)
www.olma.ch

13/11 – 16/11/2014
Bau Holz Energie Messe, Berne (CH)
www.bauenergiemesse.ch