Press release

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Bakery maximises resources to generate electricity, heat and hot water from wooden pallets

Quality and regionality are top prorities for the family-run bakery "Löwenbäcker Schaper" from German Brunswick, both in their bakery and for their energy supply. Since the end of last year, they have been using a Spanner Re² system to generate electricity and heat from shredded pallets that accumulate during bakery operations. Their approach to energy generation is sustainable and adds optimal value at the same time.

Brunswick/Neufahrn i. NB, Germany. In 1900, the great-grandparents of the current owner Thomas Schaper laid the foundation stone for the family-run bakery business. For more than 100 years, the bakery has ensured a particularly responsible use of available resources with a focus on quality and regionality. So it was only logical for the current Schaper family to also opt for a sustainable solution when it came to energy supply. At the end of last year a Spanner Re² EnergyBlock was intalled to generatie electricity and heat using the principle of combined heat and power generation (CHP) from wood residues.

Shredded pallets as fuel for biomass power plant

The pallets produced in the bakery serve as fuel. These are processed into shredded chips with a shredder. The resulting fine material is also used as an energy source in the form of pressed pellets. This means that no material remains unused and the residual material, which was previously disposed of at a cost, now represents a profitable energy source. "The fact that the plant is operated with wood from pallets rounds off our added value in the enterprise optimally and shows that one can use also an alleged residual material profitably with innovative concepts", so Thomas Schaper, owner of Löwenbäcker Schaper. Before the shredder chips are fed into the EnergyBlock the wood is dried fully automatically in a moving floor dryer to a water content of around 10%. With this residual moisture, an optimal wood gas conversion takes place in the biomass power plant. The gas is then converted into electricity in the CHP unit.

Predominantly use of own electricity

"With the EnergyBlock from Spanner Re², we generate an average of about 45,000 kWh of electricity per month and which covers the largest part of our electricity requirements. In addition to our own use, we also feed electricity into the public grid," reports Schaper. "The plant, which is classified according to the German CHP law, is subsidised for the regeneratively produced electricity. This means that not only are the energy costs in operation lowered due to own use, but we also receive a state subsidy for the electricity," explains Schaper.

Profitable hot water preparation for bakery operation through wood gasification system

The wood gasification plant generates heat in addition to electricity. This heat is used to warm the production rooms and the workshop, and it also flows into the moving floor dryer, which pre-dries the shredder chips. The demand for hot water in the bakery is considerable. Before the EnergyBlock was put into operation, a biomass boiler was used for the hot water supply, which required about 55 tons of wood every year. Due to the new Spanner Re² wood gasification system, the existing biomass boiler is only switched on at peak load times during the winter months. The heat generated from the biomass power plant is now used to supply the bakery with hot water.

EnergyBlock – a complete turnkey CHP solution from Spanner Re²

Spanner Re² is one of the leading manufacturers of biomass power plants. With the innovative EnergyBlock, Spanner Re² offers a complete wood-based CHP solution. All components such as wood gasifier, the combined heat and power unit (CHP) and an intelligent control system are installed in a 20-foot container. Due to the modular construction and the cascading capability of the proven biomass power plants, the system offers a maximum of flexibility: It can be set up variably, which allows it to be optimally adapted to the local conditions, offers a wide range of performance from 35 kW_{el} to 1 MW_{el} as well as approx. 80 kW_{th} to 2 MW_{th} and can be operated with pellets, wood chips, briquettes or shredder chips.

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