

ENERGY SELF-SUFFICIENCY

Part of town supplies itself with energy

A NEW ROAD TO THE FUTURE

Schönbrunn, a district of Wunsiedel (in the Fichtel Mountains in northeastern Bavaria), will be treading new paths and has chosen to draw its energy from renewable sources. In 2012, the Wunsiedel public utility company put into operation a biomass combined heat and power station and set up a local heat distribution network. Both the wood gas combined heat and power plant (CHP) as well as the peak load and reserve load furnace are run with wood pellets. In addition, a solar power plant on the roof of the power central captures solar power and feeds it into the grid. For quite some time now, the public utility company of Wunsiedel, which is the region's energy provider, has been very interested in integrating the district of Schönbrunn into its strategic energy concept. Already in 2011, the public utility company launched its largest biomass project, the „biomass combined heat and power station with wood pelleting plant“ (WUN Bioenergie GmbH) in the district Hohenbrunn, for which the company relied on the expert advice of eta Energieberatung from Pfaffenhofen.

WOOD-GAS CHP COVERS THE BASE THERMAL LOAD

The technical concept chosen to supply the region with heat consists of a wood gas combined heat and power plant from the Burkhardt company in combination with conventional pellet boilers. The wood-gas CHP reliably covers the base load of the 5.3 km-long local heat network. The wood gas for the combustion engine is also produced from wood pellets. The wood pellets have a homogeneous fuel specification and therefore guarantee the consistently high quality of the gas, which is a great advantage for its

use in engines. In the cogeneration process, the wood-gas CHP delivers not only electricity, but also 270 kW of heat in the 80 m³ buffer storage unit. The subterranean buffer storage was integrated into the heat distribution system to compensate load fluctuations on both the production and consumption side. If more heat is needed, or if the wood-gas CHP is being serviced, the heat is provided by a pellet boiler with 950 kWth output. The wood pellets for both plants are delivered on the north side of the plant. As the building was integrated into the existing landscape (slope), it is possible to simply use gravity and quickly fill the two large bunkers with wood pellets by tilting the container. From there, a shaftless screw conveyor transports the pellets on to the plants' storage tanks.

[Source: eta Energieberatung „Biomass local heat network [...] in Schönbrunn (Fichtel Mountains)“]

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EXPANSION IN 2014

In Summer 2014, the Wunsiedel public utility company geared up for the future: A line connecting the combined heat and power stations Schönbrunn and Breitenbrunn increases the power supply reliability and the degree of efficiency. As a further measure, an additional Burkhardt wood gasifier with CHP was installed at the same location. The investment was subsidized by the Technology and Support Centre Straubing with the BioSol subsidy programme of the Free State of Bavaria. In future, the new plant will cover for the medium load of the local heat networks of Schönbrunn and Breitenbrunn, which are now linked.

FACTS AND FIGURES

Location: Wunsiedel, Schönbrunn (Fichtel Mountains Northern Bavaria)

Info company: WUN Bioenergie GmbH

Information Burkhardt plants:

2x Burkhardt wood gasifier V 3.90

2x Burkhardt CHP ECO 180HG

total power:

360 kWel and 540 kWth

Comissioning: 2012/2014



Hanglage: Das natürliche Gefälle begünstigt die Befüllung mit Pellets



Einer von zwei Burkhardt Holzvergäsern