

Bio-Energie Mudau GmbH

Pellet Industry

Main CHP project

Heat capacity (total)	kW _{th}	1,187
Electrical capacity (total)	kW _{el}	5,335
Technology	Turboden ORC	
Number of units	1	
Manufacturer	Turboden	
Type of fuel	Biomass	
Heat: yearly generation	MWh	8,750
Electricity: yearly generation	MWh	39,300
Year of construction	Start up June 2006	
Total Investment costs	EUR	Ca. 10 M€
Financing	Private Investors	
State support	Feed-in tariff	
Location	Mudau, Germany	

Picture



General description of the case

In Autumn 2005 decision to build a new pellet plant in Mudau (Germany) was taken. The company investing in the pellet plant is a new co-founded by 3 partners that were running different business activities and wanted to diversify with an investment in the Bioenergy sector. The plant buys most of the sawdust and fuel (mainly bark) for the energy plant from a sawmill located just beside the pellet plant under a long term purchase agreement. It was

decided to use a belt dryer and a cogeneration plant based on a thermal oil boiler and Turboden ORC unit for drying the wet sawdust up to the moisture content of about 10 % required for the pellet production process. The investment cost for the complete plant was about 11 Million Euro. The maximum design pellet production is 6 t/h. According to the local renewable energy law (Erneuerbare Energien Gesetz) the feed in tariff is about 0,16 Euro/kWh_{el}. The plant optimization regarding the hot water temperatures under the local frame conditions led to selection nominal temperatures of 60/85°C in the hot water loop supplying the process heat to the belt dryer. Max pellet production: 6 t/h.

Success factors

Business Opportunity linked with biomass production.
Integrated with industrial process.
Feed-in tariff.

Main barriers

The biomass CHP ORC plant works successfully with high performances.

Conclusion

On one hand, Germany is the European country leader in renewable energy policies, especially after the decision to give nuclear energy up. On the other hand, the majority of installed energy plants is CHP and the minimum 60 % of efficiency is required. For these reasons there is an incentive to install biomass CHP plant in Germany.