



Judenburg, Austria

District heating grid based on waste heat from pulp&paper mill Zellstoff Pöls AG

DESCRIPTION OF THE ACTION

The Zellstoff Pöls AG annually processes approximately 2 million cubic meters of thinning wood and sawn timber into both pulp and paper. Together with the know-how partner "Bioenergie Wärmeservice GmbH" from Köflach, an expert for district heating and waste heat recovery systems, a joint venture was formed into the company "Biowärme Aichfeld GmbH".

The objective was to use the waste heat sensibly, in combination with an existing biomass heating plant and a storage solution with large-district-pressure reservoirs. The result allows for a sustainable, environmentally friendly and regional heat supply for more than 15,000 households in the greater Aichfeld area. For this purpose, the joint venture partners invested € 18 million and laid over 18 km of piping for the district heating project.

This is a heat grid infrastructure project, to connect the cities, business and industrial parks in the region. The cities, business and industrial parks are served by ESCOS, which take over the heat from the infrastructure heat grid, and distribute the heat to the customers.





PARTNERS INVOLVED

- Zellstoff Pöls AG and Biowärme Wärmeservice GmbH form the Biowärme Aichfeld GmbH, which is the operator of the infrastructure heat grid, connecting the sub-heat grids of the region. It is a private company acting as an ESCO, providing energy services for the municipalities.
- ESCO's like Stadtwerke Judenburg AG, Biowärme Wärmeservice GmbH, Energie Steiermark AG, Kelag Wärmeservice GmbH or Fernwärme Fohnsdorf with the heat from Biowärme Aichfeld GmbH, and deliver the heat to their customers.
- Energy Agency Upper Styria – EAO and other consultants assist in energy advice
- Kommunalkredit Public Consulting GmbH provides public subsidies to the district heating grid operators and Zellstoff Pöls AG for recovering the waste heat from the pulp&paper mill. These subsidies are non-repayable grants for the investments, covering up to 30 % of the investment costs.

Time period: 2011 onwards

Success factors

- The main success factors are innovative ESCO's as heat supplier, and an innovative company Zellstoff Pöls AG, which made the decision to take private money and invest it into the projects
- The competence of these people to convince stakeholders of the overall strategy and investment project
- The availability of direct non repayable funds as a part of financing the investment
- Involvement of the important regional stakeholders from municipalities, politics, enterprises and other local organisations was very important



FINANCING

Investment costs = 18.000.000 EUR

- Own sources from the Zellstoff Pöls AG and Biomasse Wärmeservice GmbH as shareholders of the Biowärme Aichfeld GmbH; The Biowärme Aichfeld GmbH also takes long term loans from banks. It's the private company, acting as an ESCO.
- Subsidies (Ecofund) Kommunalkredit Public Consulting GmbH provided national and European non repayable subsidies to the project via their program "Umweltförderungen im Inland – UFI" which is available for district heating grids, and for recovering the waste heat from the industrial process. The funding rate consists of a basis rate of 25 % and 5 % sustainability surcharge according to the law of environmental subsidies. The actual program can be seen at <https://www.umweltfoerderung.at/betriebe>

Financial and other benefits of the project:

- The companies Zellstoff Pöls AG and Biowärme Aichfeld created additional business, income and jobs.
- The benefit of the customers like households, enterprises and municipalities are in a way, that they get heat from renewable energy (biomass) for a competitive price. The heat tariff is bound in a long term contract over 15 years, bound to an official index based on a mix of fuels, monthly published by the Statistik Austria. So the development of the price is transparent. They pay just the heat they use, and a small part of a fixed price based on the load demand. They will not have any risk as they have in operation their own heating facilities, and no additional costs for maintenance, service or chimney wiper
- New regional economic cycles are established for additional income and value creation at local level, and this by energy and climate actions, by replacing fossil oil and gas-heating by renewable energy, which saves a lot of CO₂-emissions



BARRIERS ENCOUNTERED

- Some stakeholders and decision makers are not easy to convince for innovative projects
- Economic questions, because the project has to be competitive with low prices for heating oil and natural gas at the moment
- Some regional players haven't been satisfied, like chimney wipers, because they lost business

Ways to deal with barriers

- Detailed preparation of projects, including economic and ecologic analysis
- Preparation of arguments with the advantages and disadvantages of the project
- Transparent information politics to the public and potential partners and customers
- Involvement of relevant stakeholders who can help as catalysts or inhibitors of the projects





Key results

In 2011 Zellstoff Pöls AG realised a large district heating project and now delivers district heating to the communities Pöls, Fohnsdorf, Judenburg and Zeltweg through an 18 km long supply network. With this we came closer to the goal of annual CO₂ savings of 25 000 tons and the slogan „Q² your heating advantage from Pöls“ has become reality for approx. 15 000 households. The district heating supply currently is at 23.0 MW.

- A infrastructure heat grid was formed for the connection of the company which has the waste heat available, and the district heating grids in cities, business and industrial parks of the region
- District heating grids in the cities and business and industrial parks have been installed, to substitute fossil fuels with regional available waste heat

Key figures of the infrastructure heat grid

- 18 km infrastructure head grid for the connection of cities, business and industrial parks
- 15 000 households are served with waste heat at the moment, additional potential available
- 25 000 t CO₂-reduction
- 30 MW power capacity of the heat recovery and heat decoupling
- 18 Mio. € investment of the mail infrastructure heat grid
- 6 month of construction period

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