

Drammen

Aim: Integrate renewable resources into the district heating system



Stakeholders involved in the project

The district heating system in the kommune of Drammen is operated by a Drammen Fjernvarme, which is 50% owned by the municipal energy company and 50% by a commercial energy company. A Scottish company won the bid to install heat pumps for the municipality. Drammen has over 60,000 inhabitants that benefit from the district heating.

Financial streams for financing the project

Investment was provided by Drammen Fjernvarme as well as private investors. The development of the sustainable district heating system was also financially motivated as the heat pump is able to provide heat at lower costs than a gas heating system. Thus, the municipality saves costs and is able to offer residents lower prices for heat as well.



Technologies used in the project

As opposed to heat pump technologies that rely on hydrofluorocarbons, the heat pump in the Drammen project uses water from the fjord to heat liquid ammonia. The result is gaseous ammonia with a temperature of 120C. This is then used to heat the water in the heating system and the process begins again. The use of ammonia rather than hydrofluorocarbons ensures that greenhouse gases are not used in the process. Hydropower is used to generate electricity for the Drammen project.

Project achievements

At time of completion in 2011, the district heating network was the largest district-wide natural heat pump in the world. The heat pump saves the city 2.7 million euros/year and an annual saving of 1.5m tonnes of carbon.



To learn more:

<https://www.wwf.org.uk/sites/default/files/2016-12/Drammen%20case%20study%20-%20district%20heating.pdf>

<https://www.euroheat.org/knowledge-hub/case-studies/100-re-district-drammen-norway/>
<https://smart-beejs.eu/>