Biogas Project in Třeboň, South Bohemia, Czech Republic

Summary

A new biomass plant is currently under construction in Trebon, a town with about 9 thousand inhabitants in South Bohemia, well known as a centre of fish breeding. The plant will use maize and grass silage and pork manure as inputs, the output will be electricity supplied to grid and heat provided to the spa facility and surrounding residential buildings. The planned start of operation is in the beginning of 2010.

In addition to the current project, the installation of a biogas upgrading unit is being prepared that will feed-in the purified biomethane into the local natural gas distribution network. The additional biogas for the upgrading unit will be made available by an extension of the biogas plant's capacity.

The preparation of the upgrading unit is supported by the Prague gas distribution company who intends to purchase the biomethane and use it as a virtual substitute of natural gas for its CNG filling stations.

Biogas plant

A unique concept has been adopted to maximize the utilization of produced heat. The locations of the biogas production and the main cogeneration unit are split and the raw gas is supplied by a new separate pipeline 4,2 km long (which is a more cost effective solution than building the district heating pipeline).

The biogas production plant

The new biogas plant is located about 2 km north from the city next to a large pork breeding farm and the waste water treatment plant. This site is suitable both from the point of supply of agricultural input materials, being in the centre of the fields intended for this purpose, and sufficiently distant from the city with regard to possible impact on residential areas.

The planned annual production is about 4 million of m^3 of raw gas corresponding to over 20 000 MWh heating value equivalent. Input materials are mainly maize and grass silage (15 500 and 4 300 t/y respectively) and liquid pork manure (3 000 t/y).

A small cogeneration unit (160 kWe) will be installed to cover the plant's own consumption of electricity and heat.

Cogeneration plant

The new cogeneration unit (840 kWe) is being installed in the spa facility "Aurora" at the western outskirts of the city. The produced electricity will be sold to the grid and the heat supplied partly to the spa's internal heating system and partly to several other buildings in the vicinity (residential buildings and hotel).

Ownership, financing and implementation

The investor and future operator is a private company *"Bioplyn Trebon s.r.o."* created for this project by several natural and legal persons, including local farmers and local power distribution company. Project preparation started in 2007 (feasibility study, documentation for site and construction permit, application for the subsidy). The project received an investment subsidy from

the Czech Ministry of Industry and Trade through the Operational Programme “OPPI” co-financed from EU Structural Funds. The major portion is financed by a bank loan. The actual construction started in May 2009 and the planned completion is in the beginning of 2010.

Role of Project Partner

Project partner to MADEGASCAR (SEVEn, The Energy Efficiency Center) helped the investor with working out the feasibility study (during 2007/2008) and with securing all the necessary documentation for awarding the land use permit. The technical assistance provided by SEVEn resulted in preparation and submission of the application for the mentioned investment grant which was ultimately awarded to the project.

The cooperation started has found its continuation in 2009 when the technical assessment of the extension of the biogas plant and installation of biogas upgrading unit has been assessed by SEVEn in relation to the larger biogas-to-mobility project initiated by Prazska plynarenska (see D4.3.8.5).