



Small scale district heating in Alsterbro

Project Block heating 2000 in Nybro municipality

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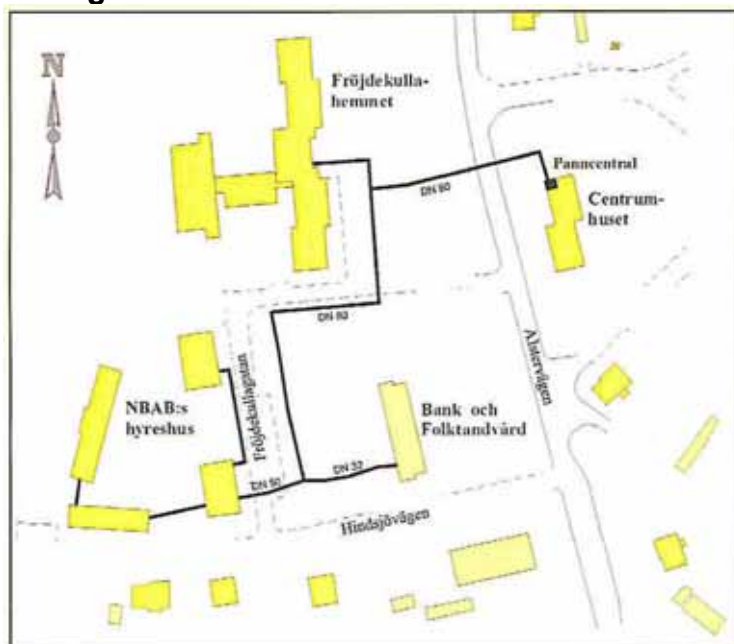
The project was created thanks to the interest and involvement of the Alsterbro society. Nybro Energi AB had played a key part in the project's implementation. The company has also financed the plant.

Development

The first analysis regarding the conditions of the project was carried out in 1996. It proved that the financial conditions were not good enough for the project to be implemented. However another project was initiated as a result of the analysis: a pellet boiler was installed in Alsterbro school in 1997.

In 1999 Nybro municipality applied for public subsidy, so called LIP-resources, for the project and the money was granted. Thanks to the investment subsidy the conditions for implementing the project were now fulfilled. The project was implemented in co-operation with the local energy group from TASS project (Towards A Sustainable Society around the Baltic Sea).

Heating culvert Alsterbro Centre



Connected properties

Fröjekullahemmet, Nybro municipality	energy requirements	ca 315 MWh/year
Municipal renting property, Nybro Bostads AB	energy requirements	ca 315 MWh/ year
Central House, Nybro municipality	energy requirements	ca 180 MWh/ year
Bank and Public Dental Service, Nybro municipality	energy requirements	ca 40 MWh/ year

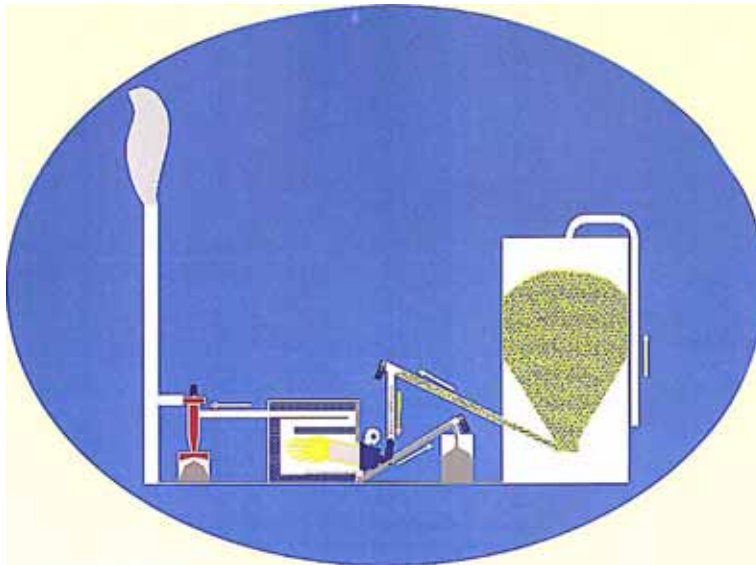
Other properties in the neighbouring can be connected.

Boiler station

Boiler station is equipped with a pellet boiler of 300 kW and an oil boiler of 500 kW for maximum and reserve load.

Mainly wood pellers will be used for heating in the installation. The pellets standfor 90% of the total energy production and the remaining 10% will be down to oil heating.

Basic sketch peller boiler and storehouse



Finances

Investments:

Boiler station	1 600 000 kr
Heating culvert, heating stations	1 000 000 kr
Deduct subsidy, total	- 620 000 kr
Deduct <u>connection charges</u>	<u>- 810 000 kr</u>
Total net investments:	1 170 000 kr

Operating costs:

Capital expences	110 000 kr
Running, maintenance etc	50 000 kr
Pellets 950 MWh/year	175 000 kr
<u>Oil 5 m³/year, 100 MWh/year</u>	<u>45 000 kr</u>
Total costs per year:	380 000 kr

(equivalent to ca 445 kr/MWh=44,5 öre/kWh)

Technical data

Pellet boiler	Viessman ca 300 kW
Oil boiler	Viessman ca 500 kW
Pellet burner	JanFire-Jet
Fuel storage volume	40_m ³
Exhaust gas cleaning	Multicyklon
Max dust emission	150 mg/m ³ exhaust gas
Pellets volume	ca 200 ton a year
Oil volume	ca 10 m ³ a year

Environmental effects — emission

Carbon dioxide	substantially reduced
Sulphur dioxide	unchanged
Nitirc oxide	reduced by 50%
Dust	increases

Project organisation

Investor Nybro Energi AB
Analysis, planning, check-up etc Energikonsult Willy Mårtensson AB, Kalmar

Building contractors

Boiler station

Main contractor Swede-Tech AB, Kalmar
Burner contractor Swedish Bioburner System AB, Åmål
Pipe installation engineer Hammarstedts VVS AB, Nybro
Control and regulators Gila Control System AB, Rockneby

Heating culvert

Pipe supplier Ahlstrom Power FlowSystems AB, Örebro
Welding contractor Hammarstedts VVS AB, Alsterbro
Ground work contractor Hälleskalla Entreprenad AB, Alsterbro

Heating stations in conneted properties

Supplier, prefab exchange stations LPM Heat AB, Göteborg and
Alfa-Laval Sverige AB, Stockholm
Installation, pipes Hammarstedts VVS AB
Installation control, electricity etc Hammarstedts Energiservice AB

Other participators in the project

Property owner Tekniska kontoret, Nybro kommun
Nybro Bostads AB

The municipality caretaker supervises the plant on everyday basis

Fossil fuel free region

This brochure has been prepared by the Regional Council in Kalmar County and Nybro Energi AB and is part of a series of best practice illustrations of fossil fuel free applications

More information about nooil and fossil fuel free region is available at
<http://www.kalmar.regionforbund.se/nooil-eng>

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