

1

In Denmark there is a long tradition for District Heating

On Samsøe, in the main village Tranebjerg an old district heating system was replaced in 1993 by a total “new” system, based on straw

Initiatives and owner is the utility electricity company NRGi located in Jutland

2

The Construction price for the Tranebjerg plant was 3½ mill € (incl. of heating units in the houses)

None economical support from the Danish Energy Agency

263 residents and institutions paid symbolic 13 € for the connection, incl. heating units

The Tranebjerg Plant

3

The boiler (for whole bales) has an effect of 3MW

Yearly production: 9,500 MWh

Normal consumers pay a yearly fixed price of 342 €

The variable payment is 98 € per consumed MWh

4

A local group of citizens from the villages Nordby/Mårup and NRGi began the planning for district heating in 1999

The construction began in mid 2001 and the opening was in April '02

Construction price, 2.75 mill €, support from The Danish Energy Agency was 1.2 mill €

The 178 consumers paid the symbolic 13 €

The municipality guaranteed for the loans

5

The heat production is a combination of a wood-chip boiler 0.9 MW with cooling of the gas and a 2,500 m² solar heating system with a maximum effect of 2.2 MW

Yearly production: 4,000 MWh

Normal consumers pay a yearly fixed price of 325 € and variable price of 87 € per MWh

The Nordby/Mårup Plant

6

In principle NRGi is a co-operative organisation

But the two representatives from Samsø are only informed of the electricity prices, never the price for district heating on the general meetings

That gives some frustrations for some of the heat consumers on Samsø

7

In the late 2000 a citizens club in the village Onsbjerg and Samsø Energy Company (SEC) took a meeting with a local “farmer and entrepreneur family-firm” concerning district heating in Onsbjerg

The local firm had calculated and offered a variable price of 83 € per MWh, based on straw

Just to be sure, the citizens asked NRGi to give an offer for the district heating as well

NRGi offered a price of 97 € per MWh

8

The citizens continued the cooperation with the local firm

The construction began in June 2002 and the plant opened in January ‘03

The price was 1.1 mill € and the support from the Danish Energy Agency was 0.37 mill €

80 consumers paid 13 € each

9

The municipality guaranteed for the loans

The conditions for the guarantee was, that two consumers and one municipal selected person should join the board of the “Onsbjerg Straw-heating, Private Limited Company”

In addition, the municipality shall approve the future heat prices

The Onsbjerg plant

10

The boiler (using ripped straw) has an effect of 0.8 MW

The Yearly production is approx 1,900 MWh

The fixed price is 300 € for normal consumers and 670 – 2000 € for larger consumers

The variable price is 83 € per MWh for both normal and large consumers

11

The planning for district heating in Ballen/Brundby villages began in 1999

The model was the same as for Nordby/Mårup; a local citizens group and NRGI

The project never succeeded, and in September '02 NRGI gave up

12

The citizens group and SEC continued the work and planning for district heating in Ballen/Brundby

In the early 2003 the group began the campaigning at the consumers to entering the district heating

In October '03 a Statutory general meeting agreed in setting up “Ballen-Brundby District Heating Cooperative” and selected a board of 6 consumers from the two villages

The municipal board will select a member for the Cooperative board later on

13

200 consumers was registered for the district heating in late 2003

In December '03 the municipality approved the “District Plan” for the building site

In January '04 the cooperative board sent out contracts to the 200 consumers

Up till now 192 have returned their signed contracts, and 8 more have promised to return their contacts before the end of March

14

In February '04 the Danish Energy Agency and the County approved the total project

Six neighbours have protested against the location of the plant to a “ministerial complaints board” concerning legal conditions (municipality and county)

But we are allowed to begin the construction with the risks that we have to stop the construction works if the complaints board decide that

15

In March '04 the municipality board will approve the total project and guarantee a loan for up to 2 million €

The construction work can start just after Easter and be finished before the end of 2004

The calculated price will be 2.2 mill € and the support from the Danish Energy Agency 0.333 mill € (and from now on there is no more support from DEA)

200 consumers will each pay 13 €

16

The boiler (with ripped straw) will have an effect of 1.6 MW, and the yearly production will be approx. 4,700 MWh

The fixed price will be 300 € for normal consumers and 600 – 1733 € for larger consumers

The variable price will be 83 € per MWh for both normal and large consumers

Future consumers with a site, but no house yet, can pay a yearly fixed price of 400 €. Because of three district plans in Ballen, they are bound to be connected to the district heating (31 sites up till now). 19 owners have signed contract for that

After finishing this project, approx. 66 % of the islands heating demand will be produced by renewables

17

Some reasons for heating schemes success in Denmark and on Samsøe:

- Need for room-heating (in DK we have 51 m² per person, in average)**
- Tradition since the last century**
- The most developed district heating equipment in the world (I believe)**
- Taxes on oil, gas and coal**
- Preferences for CO₂ neutral energy supply**
- Economical support for new and smaller RES plants (up till now)**