

Case study : Føns Nærværme (Denmark)

Name of the project:	Føns Nærværme
Adress of the project:	Vedbendvej 1, 5580 Nørre Aaby, Denmark
Name and type of the owner:	Føns Nærværme, District heating cooperative under construction
Owner contact person:	Erik B. Olsen

Context of the study

The village Føns consists of 80 houses. The houses are individually heated with different fuels, but primarily oil. In the last 2 years a working group has made a project with district heating with a wood chip or wood pellet boiler. The working group wants to add solar to replace the biomass boiler in the summer period.

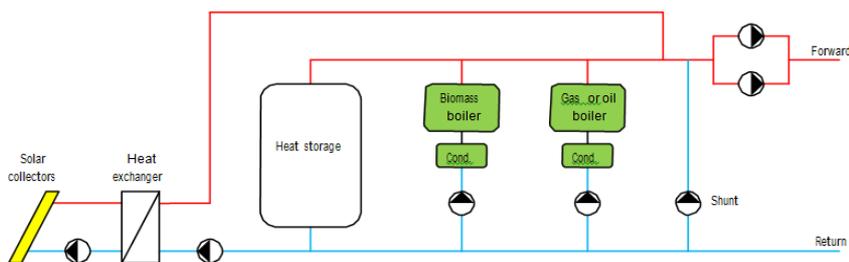
Support

PlanEnergi has made a design calculation (report annexed) of a system, where a system with 400 m³ solar collectors in compared with the same system without solar collectors.

SDH plant

SDH system concept

The system concept follows the diagram in SDH Fact Sheet 2.1.



Principle diagram of the concept

SDH technical data

The solar collectors are ARCON HT-HEATstore 35/10 placed in 4 rows with 8 collectors in each. Each collector is app. 12.50 m², so the total area is app. 400 m². Calculations are made for place 1 ("Placering 1" at map).

SDH energy balance (MWh)

The total production is calculated to 228 MWh/year in EnergyPRO. The solar fraction is 22 %.

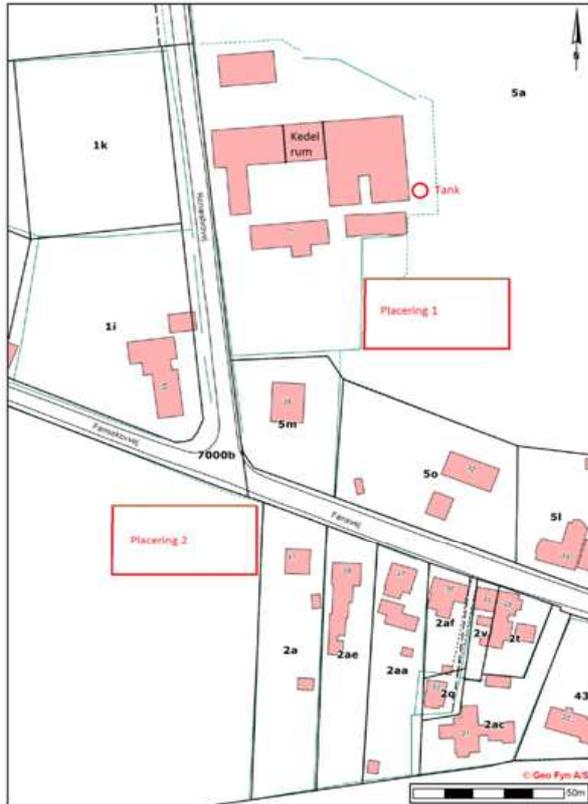
SDH economics

Yearly fuel savings are 58,153 DKK, but the solar plant is estimated to cost 2,303,130 DKK. That means, that the solar plant is not feasible under the current Danish boundary conditions (only NOx-tax biomass). Tax on biomass or/and cheaper solar collector plants in the future might change this.

SDH plant opportunities & threats, benefits & limits

The solar plant will make it possible to shut down the biomass boiler in the Summer period when the boiler capacity compared to the consumption is low. Also a large storage tank will make security of supply better, but the biomass price has to be more than the double of today or the cost for the solar plant is economical feasible.

Photos / Graph / Scheme



Authors

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