



HEAT PUMPING
TECHNOLOGIES

HPT-Annex 47

Heat Pumps in District Heating and Cooling systems

Objectives

Today, there is a wide focus on using energy more efficiently. District Heating (DH) systems are a solution to increase the overall energy efficiency. A solution to increase the share of renewable energy in DH systems is to introduce heat pumps in the DH system.

One objective will be to suggest how heat pumps can be implemented in both new and old district heating systems in the best way. The different types of integration will be described. The differences and possibilities in integration in both central and local systems will be described.

The possibilities of increasing a larger share of renewable energy or using excess heat in the different systems by using Heat Pumps will be a focus area. Minimizing the system losses by using Heat Pumps will also be an objective.

Existing projects where heat pumps are integrated in district heating systems will be described and evaluated for each participating country.

The market potential and economic opportunities will be evaluated and described for each participating country.

Tasks

Task 1: Market and energy reduction potential: The participating countries will draw an overview of the market potential for district heating and district cooling and describe the potential for implementing heat pumps in these thermal grids.

Task 2: Description of existing DHC systems and demonstration and R&D projects with heat pumps: In this task existing DHC systems and demonstration projects where heat pumps are used for heating or cooling in DHC systems will be described on country basis. The projects will be described and presented as an idea and inspiration catalogue.

Task 3: Review the different concepts/solutions: Based on the work done in task 1 and 2 the different concepts will be described. The concepts will be divided between central and decentralized systems, as between options for existing DHC grids and options for new DHC grids.

Task 4: Implementation barriers, possibilities and solutions: In this task the implementation barriers for the different concepts will be described. Different possibilities to overcome the barriers will be described, as will different business models and plans for the implementation. Non-technical topics/issues are described, e.g. energy prices, experience, legislation, decision processes grid owner structure etc. and what to expect in future.

Task 5: Dissemination: A summary report will be prepared for policy makers. The summary report will sum up the results from task 1 to 4, including input from the discussions in the working group.

Participating Countries:

Sweden, Austria, Switzerland, United Kingdom, Denmark

Contact information:

Svend.Pedersen@teknologisk.dk



