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## Memo

14.5.2007 / Veli-Pekka Sirola

## NORDVÄRME Research Workshop

Date: 16.4.2007

Place: Finnish Energy Industries, Helsinki

Goal: Get to know DH research activities in other Nordic countries, learn from others and discuss possibilities and means of cooperation

### Participants:

|                    |         |  |
|--------------------|---------|--|
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The workshop was hosted by Finnish Energy Industries / District Heating division, and chaired by Veli-Pekka Sirola.

Research activities in each country were presented by AK, CJ, HR, RU and VPS. RU and VPS also shortly presented the activities of IEA IA DHC, Euroheat RTD and Nordic Energy Research.

### Summary of DHC research in Nordic countries

- In Sweden, Denmark and Finland there are specific DHC research/study programmes, in Norway and Iceland such programmes do not exist.
- The Swedish, Danish and Finnish programmes are administrated and coordinated by national branch associations.
- The Swedish programmes are financed by members of Svensk Fjärrvärme (annual research fee based on the business turnover) and Energimyndigheten, whereas the Danish and Finnish programmes only by annual research fee (based on annual heat sales) of the association members (no public funding as programs, but individual projects can naturally seek additional funding from e.g. public sources). In Denmark small companies are exempt from the fee.
- When it comes to the extent and versatility of DHC research, Sweden is in a class of it's own, in Euros many times more than other countries.
- The Swedish programme "Fjärrsyn", starting this year and replacing earlier "Hetvattenteknik", has until 2009 a budget of ~ 2,5 M€ a year (40 % from Swedish Energy Agency), covering three areas; "teknik, marknad och omvärld".

- Sweden also has just completed a 4 year programme "Värmegles fjärrvärme" with a total budget of ~ 3,5 M€.
- In Denmark and Finland the situation is quite similar, when it comes to organisation, extent and focus of the programme
- Both the Danish and Finnish programmes concentrate on short term, problem oriented research and studies
- The Danish programme "F&U Konto" has a yearly budget of ~ 125 000 € (110 000 for projects and 15 000 € for testing of preinsulated pipes)
- The Finnish programme has a yearly budget of ~ 150 000 €
- The Swedish programme is managed by a Research Board and each sector is also controlled by the corresponding council of the association.
- The Danish programme is also led by a specific council within DFF.
- The Finnish programme is managed by DH Board as part of normal operation; no specific research council exists.
- The project reports of each programme are published on the web sites of the associations.
- In Norway and Iceland there are individual research projects mostly initiated by individual companies or research organisations.
- Norsk Fjernvarme as a member of Svensk Fjärrvärme follows the Swedish research activities and may case by case also be directly involved in projects.
- At need Norsk Fjernvarme has a budget of ~ 50 000 € a year for technical development, from which also small studies can be funded.
- In Iceland the research is problem oriented and mostly related to the use of geothermal energy.
- Samorka doesn't fund projects or studies but can direct them and disseminate the results.
- Orkuveita Reykjavíkur has newly established a research fund of ~ 1,2 M€ a year for three years mainly for projects related to environment and use of geothermal energy.
- In all countries there are other, more general energy research programmes or funding possibilities which may include also DHC related projects (e.g. Värmeforsk and TPS in Sweden, EFP/EUPD and PSO in Denmark, TEKES technology programmes in Finland, NRC and Enova in Norway).

## Main conclusions and discussion points

### *Extent of DHC research*

- All in all, the extent of specific DHC research in Nordic countries is quite limited, especially outside Sweden.
- Funding of DHC/CHP research is small compared to many other fields of energy and compared to its status and potential for energy efficiency and environmental goals.
- The DHC market is fragmented, actors on the market - both DHC companies and manufacturers etc. - are relatively small companies with limited resources and interest for research.
- Municipal ownership of DH companies does not contribute to significant investment in research and development.
- Bigger multinational energy companies neither prioritize DHC/CHP as research area.
- Low level of branch self-financing and research activity does not allow for significant funding from public funding institutions.
- The knowledge of DHC outside the branch itself is quite poor.
- DHC education in university and polytechnic levels is quite limited in all countries.

- The number of established DHC researchers is limited, and generally there is a lack of good project proposals. In this sense the situation in Sweden is better in the field of technological research.

### *Cooperation*

- The focus in all Nordic countries is on relatively small, problem oriented research and studies.
- Along with similarities there are also differences in the state, structure and typical problems of DHC from country to country, which also leads to different emphasis on research areas.
- Research cooperation takes place mainly within IEA IA DHC and to some extent also through Nordic Energy Research even if it doesn't include any specific DHC research area (e.g. present project "Primary energy efficiency" is interesting and has influence on DHC).
- WG RTD is a Euroheat lobbying body for research with no projects and funding. It is currently trying to increase the value of DHC in EU research strategies and programmes, e.g. by possible creation of a particular DHC research platform within EU
- It is not relevant to put up a new Nordic DHC research programme, but at need there can be individual cooperation projects between two or more countries, primarily initiated by researchers.
- The project reports from the Swedish, Danish and Finnish DHC research programmes are published on the web sites of the corresponding associations (in their own language).
- Information exchange could be improved by e.g. including an English summary in the reports, by opening the project reference groups to representatives from other countries if desired, by meetings of researchers in similar areas...
- The dissemination and actual implementation of project results is generally a problem. Especially Svensk Fjärrvärme is putting much effort on improving this area in the future.
- **The participants agreed that the event was interesting and successful and provided useful information. It is recommended to have such a meeting on DHC research (not necessary with the very same goal and participants) e.g. every second year.**

### Attachments (as one pdf-file):

- Workshop programme
- Presentations "DHC research in nordic countries" (dk, fi, is-1, is-2, n-1, n-2, s-1, s-2, s-3)
- Presentations "international cooperation" (IEA IA DHC, EHP/RTD, Nordic Energy Research)

### Web sites:

- <http://www.svenskfjarrvarme.se> → Forskning & utveckling
- <http://www.energia.fi/fi/julkaisut/kaukolammonjulkaisut> --> "Tutkimusraportit"
- <http://www.fjernvarmen.dk> → F & U Konto
- [http://iis-03.risoe.dk/netahtml/risoe/ENS/efp\\_uk.htm](http://iis-03.risoe.dk/netahtml/risoe/ENS/efp_uk.htm) (writing "district heating" as search term will give EFP and PSO projects that have something to do with DHC. There is also a short ~ half page English description on each project)