



EcoEfficientSubstations

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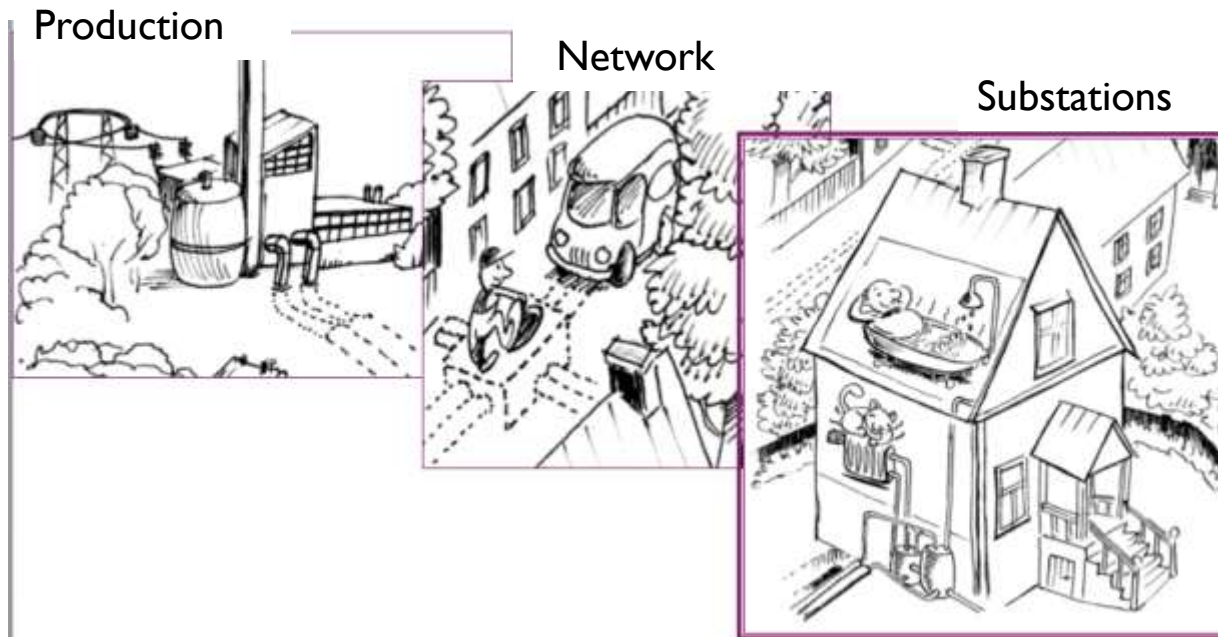
Background

- All European District Heating associations and cities have their own rules and guidelines
- About 200 substation manufacturers in Europe
- Substations are different country by country
- 40 000 large substations yearly
- We have not any kind of EU harmonization of substations today, only local solutions
- Certification system for DH pipes exists, works well, why not for substations also ?

Substations are in most cases handicraft work today !

Importance of substations

- One of the main components in DH system
- Buildings take and use energy via substations
- The most important unit for our customers



Why do we need EcoEfficientSubstations ?

- Logical continuation for Customer Installation Guidelines made by EuroHeat & Power
- This project represents a high importance for the DHC sector
- We need good channels to utilize the benefits of this project
- With this project we can find important energy savings
- Improved quality
- Investment costs will be lower thanks to higher production series

Substations are in most cases handcraft work today !

Trends and future

- More intelligent and smart substations are demanded
- Energy efficient solutions are top priority list in EU
- Low return temperature
- Low temperatures in District Heating
- Links to other research topics, DHC strategic Research Agenda- Topic T7 and Renewable Heating & Cooling- Topic CCT20

Status of project

- Project is officially launched
 - Business plan is approved
 - Workshop Secretariat selected – Mr Henryk Stawicki / CEN Denmark
 - Kick-off meeting took place in 11.09.2013
 - Further communication - More companies are welcome - consensus
 - Chairman, Gunnar Nilsson, Göteborg Energy
 - Task force leaders selected
 - EcoEfficientSubstation project works under the umbrella of DHC+
 - The DHC+ Secretariat has been involved in the process since the beginning
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CEN Workshop Agreement – concept



Flexible working platform

- Light procedures
- Direct and voluntary participation of stakeholders
- Participants decide on the working arrangements

Open to any company or organisation

- Inside or outside Europe
- Public process

Rapid elaboration of consensus documents

- Few physical meetings
- Work by electronic means encouraged

6 years total lifetime

REDEVELOP
RECREATE
RETHINK

2nd International Research Conference

5-6 November 2013 - Brussels

DHC+

www.alfalaval.com

Main Objectives

Three main areas

Technical Task Force - specification of substations

Environmental Task Force - ECO-labeling and energy saving

Testing Task Force – test demands and certification

Costs – 15 %
Improved Competitiveness of DH

Technical Task Force

Chairman: Bertrand Guillemot, Dalkia

- Harmonize the minimum technical solutions in DH substations
- Limitations
 - Steam units
 - District Cooling
 - Max primary 25 bar
- Connections are important, includes only selected basic types
- Not standardized capacity ranges ?!
- Specified functions of Components (heat exchangers, pumps, controls, ..)

Technical specifications for DH substations published by CEN

Environment Task Force

Chairman: Teijo Aaltonen, Alfa Laval

- Ensure the decreased energy consumption
- Create the ECO-labeling procedure for DH substations
 - Heat losses of substations
 - Temperature differences in heat exchanger calculations
 - Optimization of return temperature
 - Electricity consumption
- Environmental aspects – recycling

ECO – labeling procedure for DH substations

Testing Task Force

Coordinator: Anna Boss, SP Technical Research Institute of Sweden

- Specification of testing demands and results
- Testing for DH substations
 - Performance tests for heat exchangers
 - Performance tests for control system
 - Quality system / factory inspection ?
 - Performance of energy classes
- Approved test is the part of the process of certification
- Prepare requirements for approved test laboratories
- Create approval procedure for certificate board

Testing of DH substations – Certification

Co-operation

- We really need strong link
 - EHP – DHC+ -
EcoEfficientSubstation
- Not any participant can not create this by themselves
- EHP and DHC+ are the only organizations which can be monitors and supporters for this project
- Certification procedure managed by EHP
- Implementation in many EU countries as possible

