International Conference on

Smart Energy Systems and 4th Generation District Heating

25-26 August 2015 · Copenhagen

AALBORG UNIVERSITY
DENMARK

Conference Introduction

Topics

- 4th Generation District Heating concepts
- Smart Energy System analyses
- Smart Energy infrastructure and storage options
- Institutional and organizational change for Smart Energy Systems and radical technological change
- Low-temperature district heating grids and buildings
- Future district heating production and systems
- District heating planning and organisation
- District heating and Geographical Information Systems (GIS)
- District heating components and systems
- District heating and Renewable Energy

Fee including materials, coffee, lunches and conference dinner:

300 EUR

The Smart Energy System concept is essential for 100% renewable energy systems to harvest storage synergies and exploit low value heat sources. The Smart Energy System approach was defined in 2011 in the CEESA project. The project addressed Danish scenarios with a particular focus on renewable energy in the transport system in a context with limited access to bioenergy. As opposed to, for instance, the smart grid concept, which takes a sole focus on the electricity sector, the smart energy systems approach includes the entire energy system in its identification of suitable energy infrastructure designs and operation strategies. Focusing solely on the smart electricity grid often leads to the definition of transmission lines, flexible electricity demands, and electricity storage as the primary means to dealing with the integration of fluctuating renewable sources. However, these measures are neither very effective nor cost-efficient considering the nature of wind power and similar sources. The most effective and least-cost solutions are to be found when the electricity sector is combined with the heating and cooling sectors and/or the transportation sector. Moreover, the combination of electricity and gas infrastructures may play an important role in the design of future renewable energy systems. In its research on low-temperature district heating, the Strategic Research Centre for 4th Generation District Heating Technologies and Systems enhances the understanding of supply system design, infrastructure and heat savings. In future energy systems, combinations of low-temperature district heating resources and heat savings represent a promising alternative to individual heating solutions and passive or energy+ buildings. This change in the heating system also requires institutional and organisational changes that address the implementation of new technologies and enable new markets that can provide feasible solutions to society.

We invite researchers and experts from industry and businesses to contribute to further enhancing the knowledge of Smart Energy Systems and 4th Generation District Heating.

Important Dates

1 August 2015 Registration Deadline
25-26 August 2015 Conference

Heat Roadmap Europe 2050

4DH
4th Generation District Heating Technologies and Systems

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Aim and Organisers

The aim of the Conference is to present and discuss scientific findings and industrial experiences related to the subject of Smart Energy Systems and future 4th Generation District Heating Technologies and Systems (4GDH). The conference is organized by the 4DH Strategic Research Centre in collaboration with Aalborg University. 4DH is an international research centre which develops future 4th generation district heating technologies and systems. This development is fundamental to the implementation of Smart Energy Systems to fulfil national objectives of future low carbon strategies as well as the European 2020 goals. With lower and more flexible distribution temperatures, 4GDH can utilize renewable energy sources, while meeting the requirements of low-energy buildings and energy conservation measures in the existing building stock.

Location

The Conference will take place at the Copenhagen Campus of Aalborg University located in the central harbour area of Copenhagen not far from Tivoli and the old city.

Photo by Jørgen True / StudieE

EnergyPLAN User Summit

The first annual EnergyPLAN User Summit will be conducted as a special session during the Conference. The EnergyPLAN development team will present the philosophy behind EnergyPLAN and a short history of the tool. However, the main part of the programme will be user presentations and feedback to these from other users. You are also welcome to simply attend and learn from the experience of others.

The 2015 Student Awards Ceremony and presentations by the winners will take place at the International Conference on Smart Energy Systems and 4th Generation District Heating.
The DHC+ Student Awards recognise students of extraordinary potential who undertake research in the field of District Heating and Cooling, including technological, environmental, social and legal aspects. Established by the DHC+ Technology Platform, the Student Awards have a separate application process and an independent evaluation committee. More information on the timeline, awards criteria and prizes can be found on http://studentawards.dhcplus.eu/.

Submitted Abstracts

More than 70 abstracts with industrial and scientific inputs from 20 different countries were submitted for the Conference, resulting in a programme of great variety and many interesting sessions. See **www.4dh.dk/events** for further details.

Energy—The International Journal and the *International Journal of Sustainable Energy Planning and Management* publish special issues in relation to the Conference.

Best Paper Awards will be given to a selected number of papers at the Conference.

International Scientific Committee

Prof. Eric Ahlgren, Chalmers University of Technology, Sweden
Prof. Sven Werner, Halmstad University, Sweden
Prof. Leif Gustavsson, Linnaeus University, Sweden
Prof. Niels I. Meyer, Technical University of Denmark
Prof. Poul Erik Morthorst, Technical University of Denmark
Prof. Svend Svendsen, Technical University of Denmark
Prof. Xiliang Zhang, Tsinghua University, China
Prof. Bernd Möller, University of Flensburg, Germany
Prof. Bent Ole G. Mortensen, University of Southern Denmark
Prof. Neven Duic, University of Zagreb, Croatia
Ass. Prof. Carsten Bojesen, Aalborg University, Denmark
Prof. Frede Hvelplund, Aalborg University, Denmark
Prof. Poul Østergaard, Aalborg University, Denmark

Industrial Committee

Jan-Eric Thorsen, Danfoss
Birger Laursen, Dansk Fjernvarme
Jørn Urup Nielsen, DESMI Pumping Technology
Anders N. Andersen, EMD International
Jesper Munksgaard, HOFOR
Anders Skallebæk, Kamstrup
Allan Hansen, LOGSTOR
Per Wulff, Vestforbrænding
Morten Abildgaard, Viborg Fjernvarme
Jesper Møller Larsen, Aalborg Forsyning, Varme

Conference Chairs

Prof. Henrik Lund and Prof. Brian Vad Mathiesen,
Aalborg University, Denmark