



Monday 12 November 2018 · Programme

#SES4DH2018

## 4DH Technical Tour

Monday 12 November 2018 at 13:00-16:00

### District Heating in Aalborg City

#### - On the way to becoming 100% fossil free

Aalborg is the fourth largest city in Denmark with more than 140,000 citizens and an increasing population. The district heating system consists of approximately 1,500 km pipes that supply more than 85,000 households giving a connection rate of 99% through approximately 35,000 individual meters.

This tour will introduce you to district heating in Aalborg, which is in a transition phase with the aim of becoming 100% fossil free. Aalborg Heating provides heat from three major manufacturers consisting of Nordjyllandsværket, which is a coal-fired plant, and excess heat from Aalborg Portland, a cement factory, and Reno Nord, a waste to energy plant. A pilot project is currently running in which Aalborg Heating is testing the conditions and possibilities for district cooling.

#### Time and venue

Pick-up and drop-off at First Hotel, Rendsburggade 5, 9000 Aalborg.  
Meeting time is 12:50.

#### Price

35 EUR + VAT. (Refreshments included)

#### Registration

Please register at <http://www.4dh.eu/conferences/conference-2018/registration>

Deadline for registration is 10 October.

Registration is binding. Limited number of seats.

## Interactive Workshop

### on Heat Planning and Mapping in Europe

Monday 12 November 2018 at 13:00-16:00

H2020 programme projects Hotmaps, PLANHEAT, THERMOS and Heat Roadmap Europe offer innovative approaches for the integration of sustainable heating and cooling infrastructure at European, national, regional and local levels, thereby assisting EU Member States in the practical aspects of the implementation of Article 14 of the Energy Efficiency Directive on efficiency in heating and cooling.

Join fellow academics and researchers, industry and public sector representatives at a pre-event of the 4th Generation District Heating Conference to assess four ground-breaking tools for energy planning. In its own way, each project works to optimise thermal mapping / modelling tools to enable faster upgrade, refurbishment and expansion of existing systems, as well as tap into renewable sources and the potential of waste/excess heat.

Test each tool yourself, to discover key features of each and to see which serve the purpose of your organisation and your work. Collect and discuss details about: Geographical scope, spatial resolution, code and data requirements, mapping and other functionalities, economic and technical criteria, simulation and scenario building, IT requirements, training and implementation.

#### Venue

Aalborg University, CREATE, Rendsburggade 14, 9000 Aalborg, Room TBC

#### Registration

More information will follow.



@4dhresearch



@HeatRoadmapEU

Heat Roadmap Europe

A low-carbon heating and cooling strategy

2050



@ReInvestEU



## Tuesday 13 November 2018 · Overall programme (preliminary)

#SES4DH2018

08:00-09:00 Registration and breakfast

KEDELHALLEN, ENTRANCE HALL

09:00-10:30 *1st plenary session chaired by Brian Vad Mathiesen*

09:00 Opening speech by Brian Vad Mathiesen

09:15 Plenary keynote by Professor Henrik Lund

09:45 Plenary keynote by Lily Riahi

10:15 Questions and discussion

ROOM TBC

10:30-11:00 Coffee break

ROOM TBC

Parallel sessions 1-6	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC
	<b>Session 1: Smart Energy Systems</b>  Benedetto Nastasi Hanmin Cai Andrei David Sara Bellocchi Timo Kannengiesser	<b>Session 2: Future district heating production and systems</b>  Richard P. van Leeuwen Hanne Kauko Alexandre Canet Johannes Pelda Marcello Aprile	<b>Session 3: Energy planning and planning tools</b>  Bernd Möller Kamal Kuriyan Joseph Maria Jebamalai Jakob Zinck Thellufsen Wenchao Tang	<b>Session 4: Low-temperature district heating grids</b>  Carsten Bojesen Dirk Vanhoudt Igor Krupenski Tobias Sommer Marco Pellegrini	<b>Session 5: Low-temperature DH and buildings</b>  Jan Eric Thorsen Christian Holmstedt Hansen Kevin Michael Smith Pierre Vogler-Finck Jens Møller Andersen	<b>Session 6: Organisation, Ownership and Institutions</b>  Gijstbert Korevaar Søren Djørup Niels M. Westera Daniel Møller Sneum David G. Barns

12:30-13:30 Lunch

KEDELHALLEN, ENTRANCE HALL

12:30-13:00 *Steering Committee Meeting (4DH SC members only) ROOM TBC*

Parallel sessions 7-12	13:30-15:00 ROOM TBC	13:30-15:00 ROOM TBC	13:30-15:00 ROOM TBC	13:30-15:00 ROOM TBC	13:30-15:00 ROOM TBC	13:30-15:00 ROOM TBC
	<b>Session 7: Smart Energy Systems</b>  Daniel Trier Jay Hennessy Shalika Walker Tommy Rosén Nicolas Lamaison	<b>Session 8: Future district heating production and systems</b>  François Maréchal Henrik Pieper Gaétan Chardon Matteo Caramaschi Diego Hangartner	<b>Session 9: Energy planning and planning tools</b>  Steen Schelle Jensen Matteo Giacomo Prina Mostafa Fallahnejad Richard Büchele Julian Wruk	<b>Session 10: Smart Energy Systems</b>  Roman Geyer Olatz Terreros Sylvain Quoilin Wiebke Meesenburg	<b>Session 11: Low-temperature DH and buildings</b>  Leif Gustavsson Dorte Skaarup Østergaard Øystein Rønneseth Kerstin Sernhed Anna Kallert	<b>Session 12: Smart Energy Systems</b>  Anna Volkova Nadine Aoun Kaisa Kontu Sonja Salo Morten Karstoft Rasmussen

15:00-15:30 Coffee break							ROOM TBC	
Parallel sessions 13-18	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	15:30-16:45 ROOM TBC	
	Session 13: Smart Energy Systems	Session 14: Future district heating production and systems	Session 15: Low-temperature district heating grids	Session 16: Smart Energy Systems	Session 17: Low-temperature district heating grids	Session 18: Smart Energy Systems		
	Ralf-Roman Schmidt Salem Alsaleh Gabriele Cassetti Hironao Matsubara	Dagnija Blumberga Jes Donneberg Borna Doračić: Marcin Bugaj	Peter Jorsal Luis Sánchez-García Aleksandr Hlebnikov Johannes Küchle	Elisa Guelpa Esmir Maslesa Jonas Hinker Romain Lambert	David Pearson Dietrich Schmidt Federico Bava Gašper Stegnar	Bente Johnsen Rygg Roberta Roberto Gunnar Lennermo Susana Paardekooper		
	16:45-17:15 Launch of Heat Roadmap Europe – Pan-European Thermal Atlas 4							ROOM TBC
	17:15-19:30 Break							
	19:30	Conference dinner MUSIKKENS HUS, Musikkens Plads 1, 9000 Aalborg						



## Wednesday 14 November 2018 · Overall programme (preliminary)

#SES4DH2018

08:00-09:00 Coffee

KEDELHALLEN, ENTRANCE HALL

Parallel sessions 19-22	9:00-10:30 ROOM TBC	9:00-10:30 ROOM TBC	9:00-10:30 ROOM TBC	9:00-10:30 ROOM TBC	9:00-10:30 ROOM TBC
	<b>Session 19: Smart Energy Systems</b>  Anders N. Andersen Daniela Guericke Queralt Altes-Buch Lennart Merkert Sara Månsson	<b>Session 20: Future district heating production and systems</b>  Carsten Østergaard Pedersen Oliver Martin-Du Pan Jan van Deventer Alfred Heller Souman Rudra	<b>Session 21: Energy planning and planning tools</b>  Casey Cole Asad Ashfaq Philipp Janssen Russell McKenna Lisa Brange	<b>Session 22: Low-temperature district heating and buildings</b>  Andra Blumberga Giorgio Cucca Saleh Mohammadi Martin Crane Ahmad Said Galadanci	<b>REUSEHEAT WORKSHOP</b>

10:30-11:00 Coffee break

Parallel sessions 23-27	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC	11:00-12:30 ROOM TBC
	<b>Session 23: Smart Energy Systems</b>  Satoshi Ohnishi Mario Potente Prieto Patryk Chaja Benedikt Pesendorfer	<b>Session 24: Future district heating production and systems</b>  Gorm Bruun Andresen Wen Liu Maciej Widziński Muhannad Delwati Kun Zhu	<b>Session 25: Energy planning and planning tools</b>  Urban Persson Tomislav Novosel Michiel Fremouw Miguel Chang Nis Bertelsen	<b>Session 26: Future district heating production and systems</b>  Louise Ödlund Britta Kleinertz Toshihiko Nakata Cord Kaldemeyer Hrvoje Dorotić	<b>Session 27: Smart Energy Systems</b>  Vittorio Verda Peter Lorenzen Marta Victoria Danica Maljkovic Shobhana Singh	<b>THERMOS</b>  <b>National Inspire Event</b>

12:30-13:30 Lunch

KEDELHALLEN, ENTRANCE HALL

13:30-16:15 2nd plenary session chaired by Henrik Lund

ROOM TBC

- 13:30 Plenary keynote by Mark Z. Jacobson  
 14:00 Plenary keynote by Xiliang Zhang  
 14:30 Plenary keynote by Neven Duic  
 15:00 Panel Debate



Thursday 15 November 2018 · Programme

#SES4DH2018

## 4 DH Technical Tour

15 November 2018, 8:30-12:00

### District Heating of the Future - Brønderslev Smart Energi Concept

More than 60 % of all households in North Denmark are supplied with sustainable, flexible, decentralized district heating, thanks to an intelligent district heating system. The district heating infrastructure in the region is designed to be future-proof, and deliver a competitive and green energy solution. On this tour, you have the opportunity to experience one of the world's most efficient solar thermal plants. Brønderslev is located 30 km north of Aalborg and 30 minutes by taxi to the airport. The tour will visit Brønderslev CHP plant, which is the first CHP plant in the world to combine Concentrated Solar Power (CSP) and wood chips, while using an ORC (Organic Ranking Cycle) system to turn the energy into both electric and district heating. The plant supplies 4,600 households with heat and power, produced by 26,929 m<sup>2</sup> CSP and a biomass plant. CSP heats a thermic oil inside a vacuum tube to 330 °C, and feeds it into an ORC-engine. Oil vapour then drives the turbine and produces heat or heat/power, depending on the demand. The facility is also equipped with heat pumps, collecting the excess heat from smaller sources in the plant and feeds it into the system to further reduce loss.

#### Time and venue

Pick-up and drop-off at First Hotel, Rendsburggade 5, 9000 Aalborg.  
Meeting time is 8:20.

#### Price

35 EUR + VAT. (Refreshments included)

#### Registration

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Deadline for registration is 10 October.

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