

5TH INTERNATIONAL CONFERENCE ON

# Smart Energy Systems

4th Generation District Heating, Electrification,  
Electrofuels and Energy Efficiency

10-11 SEPT 2019 · COPENHAGEN



AALBORG UNIVERSITY  
DENMARK

## Call for abstracts

The Smart Energy System concept is essential for cost-effective 100% renewable energy systems. The concept includes a focus on energy efficiency, end use savings and sector integration to establish energy system flexibility, harvest synergies by using all infrastructures and lower energy storage cost.

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 of 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-costly solutions are to be found when the electricity sector is combined with the heating and cooling sectors and/or the transport sector. Moreover, the combination of electricity and gas infrastructures may play an important role in the design of future renewable energy systems, and the electrification of heating and transport – possibly through electrofuels – can play a pivotal role in providing flexibility and ensuring renewable energy integration in all sectors.

In future energy systems, energy savings and 4th generation district heating can be combined, creating significant benefits. Low-temperature district heat sources, renewable energy heat sources combined with heat savings represent a promising pathway as opposed to individual heating solutions and passive or energy+ buildings in urban areas. Electrification in combination with district heat is a very important driver to eliminate fossil fuels. Power heat, power to gas and power to liquid together with energy efficiency and 4th generation district heating create a flexible smart energy system. These changes towards integrated smart energy systems and 4th generation district heating also require institutional and organisational changes that address the implementation of new technologies and enable new markets to provide feasible solutions to society.

### Fee including materials, coffee, lunches:

- Normal fee: **400 EUR**
- Early registration (for presenters with accepted abstracts): **300 EUR**

### Important Dates 2019

- 8 April** - Deadline for submission of abstracts for speakers (NB Additional upgrade to paper is optional)
- 8 May** - Reply on acceptance of abstracts
- 31 May** - Early registration deadline
- 10-11 September** - Conference
- 1 May - 31 August** Registration is open

### Topics

- Smart energy system analyses, tools and methodologies
- Smart energy infrastructure and storage options
- Integrated energy systems and smart grids
- Institutional and organisational change for smart energy systems and radical technological change
- Energy savings, in the electricity sector, in buildings and transport as well as within industry
- 4th generation district heating concepts, future district heating production and systems
- Electrification of transport, heating and industry
- The production, technologies for and use of electrofuels in future energy systems
- Planning and organisational challenges for smart energy systems and district heating
- Geographical information systems (GIS) for energy systems, heat planning and district heating
- Components and systems for district heating, energy efficiency, electrification and electrofuels
- Renewable energy sources and waste heat sources for district heating



Innovation Fund Denmark

See more on [smartenergysystems.eu](http://smartenergysystems.eu)

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## Aim and Organisers

The aim of the conference is to establish a venue for presenting and discussing scientific findings and industrial experiences related to the subject of Smart Energy Systems based on renewable energy, 4th Generation District Heating Technologies and Systems (4GDH), electrification of heating and transport sectors, electro fuels and energy efficiency.

This 5th conference in the series cements it as a main venue for presentations and fruitful debates on subjects that are pertinent to the development and implementation of smart energy systems to fulfil national and international objectives.

The conference is organised by Aalborg University, the RE-INVEST and the sEEnergies projects.

- RE-INVEST is an international research project, which develops robust and cost-effective renewable energy investment strategies for Denmark and Europe funded by Innovation Fund Denmark.
- sEEnergies is a European research project focusing on Smart Energy Systems and supply chain effects on energy efficiency in all sectors and infrastructure funded by Horizon 2020.



Photos by May-Britt Vestergaard Knudsen



## Submission Procedure

Both scientific and industrial contributions to the conference are most welcome. Submitted abstracts will be reviewed by a scientific and an industrial committee. Authors of approved abstracts will be invited to submit papers to special issues of Energy, IJSEPM and Energies. Abstracts may be presented at the conference without uploading full paper, as this is not a requirement.



**Best Presentation Awards** will be given to a selected number of presenters at the conference.

Please upload your one-page abstract here: [www.smartenergysystems.eu](http://www.smartenergysystems.eu) before 8 April 2019



## International Scientific Committee

Prof. Dagnija Blumberga, Riga Technical University, Latvia  
Dr. Robin Wiltshire, Building Research Establishment (BRE), UK  
Dr. Anton Ianakiev, Nottingham Trent University  
Dr. Ralf-Roman Schmidt, Austrian Institute of Technology, Austria  
Dr. Hanne L. Raadal, Østfold Research, Norway  
Dr. Richard van Leeuwen, Saxion University, The Netherlands  
Prof. Thomas Brown, Frankfurt University, Germany  
Prof. Martin Greiner, Aarhus University, Denmark  
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Carsten Østergaard Pedersen, Grunfos  
Morten Hofmeister, Savosolar  
Klaus Ullrich, Sunfire  
Doris Hafenbradl, Electrochaea

## Conference Chairs

Prof. Henrik Lund, Prof. Brian Vad Mathiesen, Prof. Poul Alberg Østergaard, Aalborg University, Denmark

## Further information

[www.smartenergysystems.eu](http://www.smartenergysystems.eu)