

CALL FOR ABSTRACTS

7th International Conference on Smart Energy Systems

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

21-22 September 2021, Copenhagen

#SESAAU2021



AALBORG UNIVERSITY
DENMARK



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, lower energy storage cost as well as to exploit low-value heat sources.

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.

We invite researchers and experts from industry and business to contribute to further enhancing the knowledge of smart energy systems, 4th generation district heating, electrification, electrofuels and energy efficiency.

Conference fees

- Early registration (for presenters with accepted abstracts): **300 EUR** (attendance in Copenhagen) / **200 EUR** (virtual attendance)
- Normal fee: **400 EUR** (attendance in Copenhagen) / **300 EUR** (virtual attendance)
- Additional fee for conference dinner (Copenhagen): **100 EUR**

Important dates 2021

15 Apr	Deadline for submission of abstracts (Additional upgrade to paper is optional)
11 May	Reply on acceptance of abstracts
12 May - 11 Jun	Early registration
12 Jun - 31 Aug	Normal registration
21 - 22 Sept	Conference

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



sEEnergies



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Aim and Organisers

After being forced by circumstances into holding the 6th Conference strictly virtually in 2020, we look forward to yet again welcoming our conference participants in a hybrid setting with the possibility to attend either online or in person – this time in Copenhagen.

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, electrofuels and energy efficiency. This 7th 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 and Energy Cluster Denmark with support from 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. RE-Invest has received funding from Innovation Fund Denmark, no. 6154-00022B.

sEEnergies is a European research project focusing on Smart Energy Systems and supply chain effects on energy efficiency in all sectors and infrastructure. sEEnergies is funded by the European Union's Horizon 2020 Research and Innovation Programme, GA no. 846463.

Conference Chairs

Prof. Henrik Lund, Aalborg University
Prof. Brian Vad Mathiesen, Aalborg University
Prof. Poul Alberg Østergaard, Aalborg University
Hans Jørgen Brodersen, Energy Cluster Denmark

Submission Procedure

Abstracts can be submitted via www.smartenergysystems.eu from **5 February to 15 April 2021**.

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 may be invited to submit papers to special issues of Energy, Smart 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.



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