CALL

FOR ABSTRACTS

SESAAU2026

12th International Conference on Smart Energy Systems

4th Generation District Heating • Energy Efficiency • Electrification • CCUS and PtX

Aalborg 22-23 September 2026

Topics

Smart energy systems analysis

Smart energy systems tools and methodologies

Smart energy components, infrastructures and storage options

Institutional and organisational change, energy communities and positive energy districts

Planning and organisational challenges for smart energy systems and energy efficiency

Energy efficiency in the electricity sector, buildings, transport and industry

4th generation district heating concepts, future district heating production and systems

Electrification and sector coupling of transport, heating and industry

CCUS and PtX technologies and the production and use of electrofuels in future energy systems

Geographical information systems (GIS) and mapping of demands and resources

Renewable energy sources and waste heat sources including PtX for district heating

Important dates 2026

20 April: Deadline abstract submission

1 May: Reply on acceptance of abstracts

1-31 May: Early registration

1 June - 25 August: Normal registration

18-25 September: Virtual conference

21 September: Technical tour

22-23 September: Conference

24 September: Technical tour

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

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 system's 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 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. Heat pumps, PtX, CCUS and the utilisation of waste heat 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. Thus, the conference takes a holistic approach to the design of future energy systems.

Conference Chairs

Prof. Henrik Lund, Aalborg University
Prof. Brian Vad Mathiesen, Aalborg University
Prof. Poul Alberg Østergaard, Aalborg University
Assoc. Prof. Jakob Zinck Thellufsen, Aalborg University
Hans Jørgen Brodersen, Senior Project Manager, Energy Cluster Denmark

AALBORG UNIVERSITY

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www.smartenergysystems.eu
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Organisers

The conference is organised by Aalborg University and Energy Cluster Denmark.

Aim

The conference has become a significant venue for academia, industry, consultancies, and utilities to engage in and discuss how to transition the energy system. Originally developed as a spin-off from the 4DH Research Centre targeting 4th Generation District Heating, the conference maintains a strong focus on district heating systems, while also targeting the integration with other sectors - electricity, cooling, industry, and transport - in line with the sector integration core of the smart energy system concept. 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, energy efficiency, electrification of heating and transport sectors, CCUS and PtX.

Format

Again in 2026, we look forward to welcoming our participants to a hybrid conference with the possibility to attend online or in person. At AKKC in central Aalborg, you can attend the conference sessions in person, while the online conference platform enables you to watch recorded presentations; interact in writing with the presenters and nominate candidates for the Best Presentation Award. The online conference platform will be open to all attendees before, during and after the conference in Aalborg.

Submission Procedure

Both scientific and industrial contributions to the conference are most welcome. In general, we recommend to avoid presentations of planned research, but rather experiences and results.

To attend the conference as a presenter, you must submit both an abstract and a recorded presentation. Abstracts can be submitted until 20 April 2026 via www.smartenergysystems.eu. The recorded presentation must be prepared in the summer of 2026. Once your abstract is accepted for presentation, you will receive more information and a guideline to the recording of your presentation.

Abstracts can be presented at the conference without preparing a full paper, as this is not a requirement. Authors of approved abstracts may be invited to submit papers to special issues of a number of journals, such as Energy, Smart Energy, Renewable Energy, IJSEPM, and Energy Strategy Reviews.

Best Presentation Awards

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

Conference fees

Early registration (1-31 May):

- **375 EUR** (attendance in Aalborg)
- **275 EUR** (virtual attendance)

Normal fee (1 Jun - 25 Aug):

- **475 EUR** (attendance in Aalborg)
- **375 EUR** (virtual attendance)

Conference dinner (Aalborg): 110 EUR

Fee must be paid by credit card upon registration.

International Scientific Committee

Prof. Alexandros Flamos, University of Piraeus, GR
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Prof. Bernd Möller, University of Flensburg, DE
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Dr. Ralf-Roman Schmidt, Austrian Institute of Technology, AT
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