Agent-based modelling of socio-economic challenges of the energy transition at the Social Simulation Conference 2019 (SSC2019)

23 – 27 September 2019, Mainz, Germany

The energy transition as a socio-economic challenge

The transition of the energy system is ongoing, a process that appears to be more successful in some EU countries than in others. Stringent targets are close, both on the EU and national level. The heat sector needs to overcome its use of fossil fuels by energy efficiency measures and the installation of technologies such as heat pumps. The transportation sector needs to increase its share of electric vehicles in order to decrease emissions. Rising shares of renewable energy generation, meaning more volatile energy provision and a more and more decentralised structure require new approaches to match consumption with generation. Innovative energy market designs could generate price signals which incentivise flexibility for instance through storage and/or demand response. In addition, power grids need to be reinforced and expanded in ways that are accepted by the affected population.

The success of such approaches is strongly dependent not only on finding technical solutions and economic approaches for markets, but also on the diffusion of required technical innovations, the design and implementation of appropriate policies, integrating stakeholder perspectives and the public acceptance of new ways of energy usage. Therefore, socio-economic aspects of the energy transition are crucial for its success.

Agent-based modelling is a promising way to represent the heterogeneity of the involved actors and their interaction, to capture spatial aspects of energy transition and to investigate processes of individual decision making in various ways. Agent-based simulations enable the exploration of these fundamental processes and emergent system-level phenomena in an empirically grounded, explicit way. Finally, ABM is capable to offer science-based instruments and approaches to govern and steer the energy transition process successfully.

Call for Papers

We ask for contributions of agent-based models that investigate the following challenges and related:

- Energy market designs and behaviours towards participation
- Demand-side management and its behavioural constraints
- Diffusion of energy related technology and practises
- Energy policies decision support for the energy transition
- Simulations combining the technical energy system with socio-economic behaviour

Submission

We welcome the submission of extended abstracts (3 - 4 pages; short oral presentation) and full papers (max. 12 pages, long oral presentation).

All work must be original, i.e. must not have appeared in conference proceedings, books, or journals and may not be under review for other archival conferences, books, or journals

Important Dates

Submission of extended abstracts (3-4 pages) or full papers (max. 12 pages):
01 April 2019

Notification of Acceptance:
24 May 2019

Final Version Submission:
11 June 2019

Links

Conference homepage: https://ssc2019.uni-mainz.de

Submission page: https://easychair.org/

European Social Simulation Association (ESSA): http://www.essa.eu.org

Track chairs

Dr. Sascha Holzhauer
Department Integrated Energy Systems, University of Kassel

Dr. Friedrich Krebs
Department Integrated Energy Systems, University of Kassel

Dr.ir. Emile Chappin

Faculty of Technology, Policy and Management, Delft University of Technology