CNESS | Climate Neutral Energy Systems and Society

NEWSLETTER

October 2021

TOPICS

CNESS – The new research platform

Climate change is one of the biggest modern challenges that require extensive and collective actions. The Climate Neutral Energy Systems and Society (CNESS) research platform is a novel approach to address the challenges of climate change from the perspective of energy systems and society.

CNESS combines Tampere University's existing and emerging potential and expertise in several engineering, natural science and social science disciplines whilst being open to contributions from new and unexpected areas. Thereby the research will focus on five closely interrelated areas: electrification of energy systems, hard-to-electrify areas, societal implications of the energy transition, value creation and energy transition, and energy policy. This interdisciplinary character allows CNESS to contribute particularly to areas where natural sciences, engineering, business, and social science competencies on their own are not sufficient to tackle the evolving climate and future energy-related challenges.

The goal of CNESS is to establish electrification as a globally visible key area in the study of energy systems, including transport, built environment and industry. In addition, the platform aims to nurture new researcher generations, promote diversity in the field, expose different researcher cohorts to interdisciplinary work, and seeks to liaise with external partners and stakeholders.

CNESS joins a conference on building physics

Space heating alone accounts for 26% of Finland's final energy consumption (Statistics Finland 2021). Improving the energy efficiency, especially of the existing building stock and introducing low carbon solutions could reduce the overall energy consumption of Finnish buildings by 21–33 % by the year 2050 (Finnish Climate Change Panel 2019). Therefore, the involvement of the building sector in the energy transition is a crucial part of the path to mitigate emissions and climate change.

To link up with stakeholders in the building sector, CNESS decided to join a primary national event in this sector, *Rakennusfysiikka 2021*. The three-day

seminar brings together a wide range of construction professionals, including architects, property managers, or researchers to discuss current topics related to building physics. Rakennusfysiikka 2021 will host more than *90 presentations* and take place at Tampere Talo from 26-28.10.2021.

The first CNESS project - data collection on e-mobility

The COVID-19 pandemic affected our everyday lives, such as remote working, reduced mobility, and changed personal behaviour in general. Public transport turned from being an eco-friendly alternative to a potentially dangerous place for one's health, causing a loss in trust and passenger numbers. However, a shift from individual to public transport systems preferably powered by renewable energy is technically possible in many regions and crucial for reducing emissions in densely populated areas.

CNESS together with the VERNE research group, in collaboration with ASUTUT and the Finnish Energy Observatory, as well as other interested research groups, aim to provide a better understanding on how the COVID 19 pandemic has changed personal transport behaviour and home spatial use, and what the associated energy use implications are. The study aims to map this in a nationally representative sample of 1,000 people, including the influence of housing type, geographic region, socio-economic and wellbeing aspects. This data will give important insights into any shifts in behaviour that could also (positively or negatively) influence our transition towards carbon neutrality.

The research will involve junior scholars, supervising professors across several disciplines, and publish its results in 2022. For more information, please contact heikki.liimatainen@tuni.fi or steve.ohern@tuni.fi.

'Electrification: Accelerating the Energy Transition' is now published

The newly published book *'Electrification: Accelerating the Energy Transition'* edited by Pami Aalto offers a widely applicable framework to delineate context-sensitive pathways by which the ongoing transition to renewably generated electricity in sectors ranging from power production, transport to buildings can be accelerated and lists the types of processes and structures that may hinder progress towards this goal. The framework draws insights from well-established literature, ranging from technological studies to socio-technical studies of energy transitions, on to strategic niche management approaches, (international) political economy approaches, and institutionalist literatures, while also adopting broader social theoretical ideas from structuration theory. Contributors, several of whom belong to CNESS, discuss a multitude of case studies drawn from global examples of electrification projects. The book covers electrification solutions in sectors

such as power generation, energy storage, smart grid, road transport, buildings and prosumers. At the same time, it also offers snapshots of relevant policies, future trends and analyses of future power systems.

The book is now available on *Elsevier* and *Amazon*.

CNESS call October 2021: early-phase projects & data acquisition

The TAU research platform *Climate Neutral Energy Systems and Society (CNESS)* issues a call for early-phase projects and data acquisition projects.

The early-phase projects can provide seed funding for planned projects; comprise pilot studies; probe prospects for larger projects and/or applications for external funding; or have a well-delimited scientific output such as an interdisciplinary article.

The interdisciplinary data acquisition projects can include the use of external research services to acquire or compile new datasets or assign person-months for existing or otherwise recruited personnel to compile new materials/data leading to a publication or acting as a catalyst for larger cooperation or application for external funding.

Criteria: in both cases, applications should fall in the theme areas and aims of the CNESS broadly defined. In the case of several competing projects, proposals with interdisciplinary content and/or team have preference, as well as new teams, and teams supporting diversity and emerging scholars; and in general, teams consisting of or involving a group rather than a single researcher. All projects should be conducted at TAU but can involve cooperation with TAMK or external partners. All funds should be used by the end of 2021.

Scope of funding: we seek to fund 3-5 projects of the size of 5,000-20,000€.

Applications: free-format applications of 1-2pp should be sent to CNESS Lead PI Pami Aalto pami.aalto@tuni.fi, by 18.10.2021, at 16:15, in one document. Please provide a brief overview of scientific and/or societal objectives, research methods and data (if applicable), interdisciplinary contribution and indicative budget, including project personnel.

We are looking for young scholars

CNESS is looking to involve young and emerging researchers and wish to organise workshops and regular meetings to inform about decision-making in the PI committee. Please forward this newsletter and information about CNESS to any interested colleagues at TAU/TAMK.

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