5th International Conference for Sustainable Resource Society - ICS25
30 Oct 2025 - 31 Oct 2025
University of Eastern Finland Kuopion kampus
Snellman Building Yliopistonranta 8, 70210 Kuopio

CALL FOR ABSTRACTS
Open through 15 September 2025

ICS25 is a multi-disciplinary conference focused on challenges of sustainability transitions in society, environmental change, and sustainable use of natural resources. ICS25 is organized around five working groups: biosociety, climate, water, energy & minerals, and circular economy and sustainable society. ICS25 is jointly organized by a consortium of Research Communities from University of Eastern Finland: RESOURCE, FOBI, WATER, CLEHE, and PHOTONICS.

The conference will be held on-site at the Kuopio campus of the University of Eastern Finland accompanied with a limited online participation.

ICS25 offers a platform for researchers from all fields of science to share research insights and discuss the complex global and local challenges on sustainability transitions, use of natural resources, environmental and climate change, and circular economy themes from a broad perspective. We especially welcome submissions that explore and discuss the ICS25 special theme:

Climate Change, Resilience and Just Transitions

The challenges posed by climate change and air quality are significant global challenges which require integrated approaches. It is essential to understand the combined impacts of natural and human-induced emissions on climate and air quality, as well as the role of natural feedback mechanisms. Grasping these complex interactions is vital for developing effective

solutions to these urgent environmental issues and for implementing policies that underscore the need for integrated strategies to protect both the environment and public health. The integrated strategies across disciplines include: i) coordinating climate actions and air quality management, ii) implementing control strategies that address pollution control and incorporate health data to guide decision-making, iii) enhancing the green transition, and iv) employing sustainable urban planning.

You are all warmly invited to give presentations and discuss your ongoing research and projects with key scholars from different research disciplines. ***Please see the more specific topic descriptions below and submit an abstract (200-300 words) by 15 September 2025.*** Decisions are posted by the end of September.

The details for online participation will be shared at a later date.

Contact email: ics@uef.fi

ABSTRACT / POSTER / SESSION TOPICS

Parallel sessions are held on Thursday afternoon (Oct 30) and Friday (Oct 31) in the morning. Posters are on display during the whole conference. A separate poster session is organised during Campus Tour on late Thursday afternoon.

There are several special cross disciplinary sessions combining topics from different research communities (RCs, specific descriptions given under the relevant RCs):

- N_2O emissions across ecosystems *(CLEHE & WATER)*
- Restoration of drained peatlands - climatic, environmental and social impacts *(CLEHE & WATER)*
- Environmental impacts of hydroelectric production on boreal zone – do we give a "dam"? *(WATER & CLEHE)*
- Micro-Transitions and Human Perspectives on Sustainability Transformation. *(RESOURCE & WATER)*
- Understanding and governing global hydrological change for sustainable water security and resilience *(WATER & CCEEL)*

The sessions specific to each RC are described below.

CLIMATE FORCING, ECOSYSTEMS and HEALTH research community (CLEHE RC) brings together scientists from the multidisciplinary fields of aerosol physics, environmental science and climate law and policy aiming to increase understanding of various direct and indirect climate change and mitigation measures and their health effects. The CLEHE session welcomes papers in different fields of research including studies on natural and anthropogenic emissions, natural feedback mechanisms, mitigation technologies, actions and policies as well as human health.

The special topics for the CLEHE sessions are:

- Causes and consequences of alterations in atmospheric balance due to climatic change
- Potentials for carbon sequestration in ecosystems
- Soils in changing climate - The impact of the changing climate on northern soils, especially on carbon and nitrogen cycles and greenhouse gas emissions
- Restoration of drained peatlands - climatic, environmental and social impacts (CLEHE & WATER)
- Anthropogenic aerosols, air pollution and their mitigation technologies
- Carbon capture, storage and utilization – CCU.

FOREST AND BIOECONOMY (FOBI RC): Transition to a low-carbon and resource-efficient society in Europe and globally is a key requirement for climate change mitigation, for which forests and the forest-based bioeconomy can contribute largely. However, in sustainable and climate smart forest management and utilisation we must simultaneously take account multiple ecosystem services, climate-induced risks to forests and forestry (e.g., storms, drought, forest fires, and bark beetles), and the need to adapt to and mitigate climate change. It also requires the development, production and marketing of innovative forest-based products that could replace fossil-intensive products and increase the carbon storage of wood-based products. In FOBI, we aim to provide the necessary scientific knowledge needed to transfer into a biosociety, that relies on sustainably managed and utilized forests and sustainable production and consumption of pro-environmental products and services to mitigate climate change. In our thematic session, we will discuss about science-based solutions needed for improving the sustainable and multifunctional management and use of forests for different ecosystem services and creating and accelerating sustainable bioeconomy markets and business in forest-based bioeconomy.

Possible research themes to be covered in presentations:

- Sustainable forest management for different uses
- Evolving technologies for converting sustainable forest-based value
- Sustainable transitions in society and forest use

PHOTONICS (PHOTONICS RC)

PHOTONICS RC is a multidisciplinary consortium that unites research and education in optics and photonics across departments and campuses at University of Eastern Finland. Coordinated by the Center for Photonics Sciences, the community brings together expertise from biology, chemistry, computer science, medicine, and both fundamental and applied physics. Its collaborative approach further extends to fields such as electronics, forestry, environmental science, geography, and pharmacy, creating a broad and integrated research environment.

SUSTAINABLE CO-MANAGEMENT OF WATER RESOURCES AND AQUATIC ENVIRONMENTS (WATER RC) provides interdisciplinary solutions for sustainable, responsible, and integrated utilization of the aquatic resources by combining expertise from various scientific disciplines. **WATER** session themes descriptions are:

- **Transition from Traditional Wastewater Treatment to Next-Generation Carbon- and Energy-Neutral Treatment:**
  As climate change worsens, sustainable wastewater management is increasingly vital. The wastewater treatment sector contributes about 15% of global greenhouse gas emissions, a figure projected to rise by 22% by 2030. Traditional treatment methods are energy- and chemical-intensive, producing significant waste and emissions. However, wastewater holds valuable resources like carbon and nutrients. This session will highlight emerging technologies and scalable solutions to transform wastewater treatment into energy- and carbon-neutral resource recovery hubs.
- **Environmental impacts of hydroelectric production on boreal zone – do we give a "dam"?**
  While hydropower is a clean and flexible energy source, it can cause environmental impacts such as habitat disruption, altered flow regimes, and significant greenhouse gas emissions from reservoirs. Recent findings highlight substantial, long-lasting emissions in boreal zones. This session invites presentations that model or measure the environmental effects of boreal hydropower reservoirs.
- **Understanding and governing global hydrological change for sustainable water security and resilience:**

Human activities are disrupting the global freshwater cycle, leading to ecosystem degradation, altered climate feedbacks, and growing water scarcity, with both local and global consequences. Current governance frameworks often fail to address the complex interconnections between society, the hydrological cycle, and Earth systems, particularly at global scales. This session invites interdisciplinary contributions to advance sustainable water security and resilience by bridging knowledge gaps across law, policy, and environmental sciences.

- **Ecological and evolutionary sustainability in freshwater environments:**
  Ecological sustainability in freshwater systems is complex, with ecosystems under pressure from human activities, including selective impacts from inland fisheries. This session invites presentations on the ecological and evolutionary sustainability of fisheries, conservation of aquatic biodiversity, experimental and restoration approaches, and human dimensions of sustainability challenges. It aims to integrate perspectives from ecology, biodiversity research, and social sciences to better understand how to monitor, maintain, and regulate freshwater diversity for true sustainability.
- **Micro-Transitions and Human Perspectives on Sustainability Transformation:**
  This session examines sustainability transformations through micro-level actions, values, and experiences that drive broader systemic change, with a focus on tourism, the platform economy, and the circular economy. It highlights emerging topics like nature-based tourism, digital platforms, virtual technologies, and the role of pro-environmental attitudes and corporate responsibility. Contributions are sought that explore how human–nature connections, ecosystem relations, and digital infrastructures support or challenge sustainability at the everyday, community level.
- **N_2O emissions across ecosystems:**
  This session aims to bring together scientists working on N_2O emissions across ecosystems. We welcome contributions on N_2O emissions from any ecosystem, as well as N_2O production and consumption processes and mechanisms in the biosphere atmosphere interface. Data integrating emissions of several GHGs over large temporal and spatial scales would be very welcome.

SUSTAINABLE RESOURCE SOCIETY: Society: Circular Economy, Energy and Raw Materials (RESOURCE RC) sessions bring together multidisciplinary perspectives on sustainability transitions. Achieving long-term goals for a sustainable future and carbon neutrality requires rapid and profound transformations in core societal systems, governance approaches, and business practices. Sustainability transitions involve shifting from resource-intensive models to resource-wise and carbon-neutral solutions. Circular economy, energy, and raw materials are key areas where these transitions take place.

RESOURCE sessions invite researchers and professionals from various disciplines to submit abstracts related to these themes. We particularly encourage contributions from young scholars, professionals, and doctoral students. The conference fosters interdisciplinary dialogue across fields such as economics, business studies, law, environmental policy, geography, history, sociology, and cultural studies. Topics of discussion include but are not limited to: Circular economy and sustainable business, responsible community relations and social sustainability, sustainable raw materials and resource management, energy law, governance, and the energy transition, environmental law, governance, politics, climate law, governance, and policy.

We welcome diverse perspectives that contribute to advancing research, policy, and practice in sustainability transitions