LULEÅ UNIVERSITY OF TECHNOLOGY

SUN Natural Resources for Sustainability Transitions

PhD RESEARCH SCHOOL

SUN Graduate School: Call for PhD Student Projects

Luleå University of Technology's initiative SUN, Natural Resources for Sustainability Transitions, focuses on how natural resources, such as ore, forests, and water, can be used to realize the social transformation required to achieve the UN Sustainable Development Goals (SDGs). An important component of this transformation is a technological industrial transition currently taking place within the basic industries located in northern Sweden. However, transformation to meet the SDGs also involves challenges, such as understanding the properties of natural resources, managing natural resources sustainably, stimulating technological innovation, developing proper governance mechanisms to handle synergies and trade-offs between the different SDGs and involving societal actors in ways that are perceived as fair and legitimate.

The SUN Graduate School is interdisciplinary, spanning the range of research disciplines at LTU. The objective of this call is to recruit a balanced group of students who can explore the common SUN-themes (see Appendix A) in a multi- and inter-disciplinary way using problem-based approaches. An ambition is to stimulate the development of strong interdisciplinary research environments/groups with capacity to grow and produce excellent and relevant science. SUN is now inviting proposals for PhD student projects. A total of 9 PhD students will be recruited in 2025/26. The positions will be partially funded by SUN with 200 000 SEK per year for 3 years.

Preconditions to be eligible to the stimulus grant:

- The main and co-supervisor should come from different research subjects, preferably from different faculties. At least one supervisor should have demonstrated skills and experience in multi- or interdisciplinary research (justification needs to be provided for the selection of supervisory team in the description of the research project, see Application form).
- Student must be new recruitments, preferably a result of a joint LTU recruitment process in fall 2025, not previously employed PhDs at LTU.
- Student must be hired at LTU on a PhD employment, with planned start during the 1st semester of 2026 and the applicant must be able to demonstrate a realistic funding strategy for the entire duration of the proposed PhD project. PhD projects that started in 2025 may be eligible, provided they meet all the specified criteria.
- Each research subject can only submit one application, but they are encouraged to be involved in more than one as part of part of initiatives to build strong interdisciplinary research environments/groups
- Main applicant must be the main supervisor, employed at LTU.
- Participants are expected to take part in the SUN Graduate School activities for PhD students and supervisors, e.g. PhD courses, seminars, and a yearly colloquium.

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Evaluation criteria:

- Relevance and fit to the SUN-themes (see details on this in ***Appendix A***)
- Scientific quality and novelty of research proposal.
- Multi and interdisciplinarity potential.
- Potential to contribute to the development of strong interdisciplinary research environments/groups within LTU, for example by building on previous or on-going SUN-financed projects.
- Societal and industrial relevance.
- External and international collaboration.

The applications will be evaluated by an external evaluation committee consisting of three experts in relevant social sciences, humanities, and natural sciences/technology. Final decisions are made by the SUN Steering Committee. The objective is to achieve a group of PhD students with a suitable thematic and disciplinary spread and potential to support long term development of strong interdisciplinary research environments/groups The composition of the Research School will therefore be considered in the final selection of students.

Application instructions

- The application should follow the format provided in application template (see separate document)
- Label the application with SUN Graduate School and **dnr: LTU-2582-2025**
- Send the application to **instregsbn@ltu.se** , no later than **September 30, 2025**

For further information, contact SUN PhD school leaders:

Karin Beland Lindahl (ETKS-SHV)

https://www.ltu.se/staff/k/karbel-1.109205?l=en

Joel Andersson (**SBN**)

Joel Andersson, Luleå tekniska universitet

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Appendix A

SUN Research School: themes to guide applications

1. Overarching focus: Natural Resources and a Sustainable Industrial Transition in Sweden

All applications must motivate in what ways their projects produce *new* knowledge that relates to i) natural resources, ii) sustainability or sustainable development[1], and iii) an industrial transition towards a fossil free society. Applicants should be able to argue that their project addresses all three aspects in one way or the other.

2. Central themes:

2.1. Sustainable Development and Industrial Transition

This theme focuses on sustainable development dilemmas that arise from natural resource use and the impacts of an industrial transition. It investigates the properties and understandings of natural resources: how their economic, social and environmental benefits and impacts are assessed and balanced; how sustainable development dilemmas emerge; and how synergies and tradeoffs between different dimensions of sustainable development and the Sustainable Development Goals (SDGs) can be handled. It also explores the relationships between an industrial transition, broader societal transformation and the 2030 Agenda for Sustainable Development.

Key concepts: sustainability and sustainable development, ecosystems and ecosystem services, natural resources, justice democracy, legitimacy, transition and transformation, circular economy, tradeoffs, synergies, costs and benefits.

2.2. Natural Resources for Sustainable Industrial Transition.

This theme highlights the essential role of natural resources as a prerequisite for industrial transition. It examines how the physical, geological, ecological, and hydrological properties of key natural resources - minerals and metals, forests, and water (as source of energy) - affect their availability, extraction, and sustainable use. It approaches natural resources through the lens of dynamic socio-technical systems shaped by the interplay between natural and human resources, including technical and social innovation.

Key concepts: natural resource characteristics, availability and sustainable use, socio-ecological systems, resilience and planetary boundaries, socio-technical systems, industrial transition, technical and social innovation.

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[1] As stipulated by the UN SDGs

2.3.Governing Natural Resources and Industrial Transition

This theme examines how industrial transition towards sustainable development can be enabled and governed. It explores how the characteristics of natural systems and resources influence the governability of socio-ecological systems, and how industries, the state and other societal actors organize, innovate and interact to address governance dilemmas across natural/technical and social domains. It also investigates how natural resource governance and innovation can be supported in ways that foster sustainability, collaboration and legitimacy.

Key concepts: governance and governance systems, ecosystems and natural resources, policy, institutions, markets, technical and social innovation, civil society, actors, collaboration, conflict, legitimacy, sustainability

Applicants must apply under one main theme but are encouraged to address more than one theme. They are welcome to pair up to address the same theme (and Focus areas) from different disciplinary directions.

3. Focus areas:

- Forests
- Water
- Minerals

All projects must address at least one of the focus areas above and demonstrate a clear connection between the selected focus area(s) and natural resource- or land use related issues that are relevant in the context of industrial transition.

4. Scale:

Projects may address any geographical scale; local, national and/or global levels (and how they connect) Projects may address any temporal scale: past, present and future (and how they connect).