

Nordic Energy Research

- Strategy
2018-2021



Nordic Energy
Research

Nordic Energy Research is the platform for cooperative energy research and analysis under the auspices of Nordic Council of Ministers. Nordic Energy Research collaborates closely with national energy research funding institutions.

Rapid changes in energy and climate technology and policies were key drivers for Nordic Energy Research to develop a new strategy. Input has been collected in close dialogue with stakeholders in the Nordic and Baltic regions.

Vision

The Nordics
as a global
leader in
smart energy.

The vision of Nordic Energy Research is to create the knowledge basis for the Nordic countries to become global leaders in smart energy. There are ample opportunities in the global energy transition for improving the Nordics' strong position in energy. Joining forces in the Nordic countries leverages resources and thus increases the impacts from results. The Nordic countries, through close collaboration in energy research and energy system analysis, could also have a stronger impact in the EU and globally.

The mission is progress through Nordic collaboration. Through collaboration the Nordics will have a strong impact in terms of energy transition in the Nordic countries, while creating business opportunities in new and renewed areas on the global market, such as transport electrification, energy storage and regional smart grid technologies.

Mission

Progress through
collaboration.

Drivers

Nordic energy and climate targets, together with the UN sustainability goals, form an important driver of common interest. The Nordic countries combined are the 12th largest OECD economy, and should therefore join forces in the global market, where energy research could play an important role for the region's competitiveness.



Nordic energy and climate targets.
UN sustainability goals.

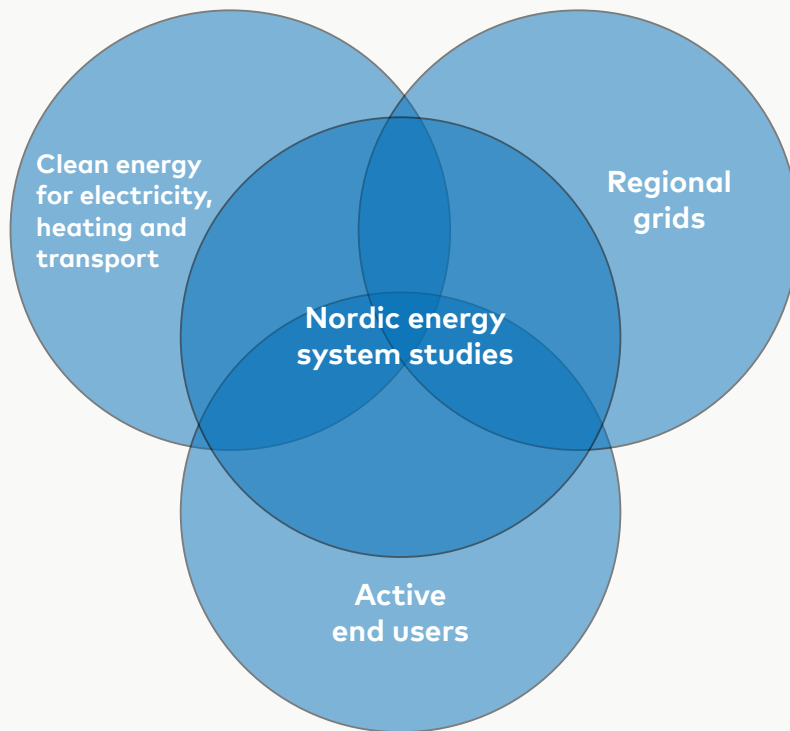
Drivers

Nordic competitiveness in a global market.

A strong Nordic voice in the EU and globally.

Figure 1 Drivers for joint Nordic research

Areas of research collaboration



The prioritized areas of research collaboration are presented in figure 2. The anticipated impact consists of providing knowledge for decision-making in businesses and societal entities, and for the creation of new sustainable goods, services and processes.

Figure 2 Nordic research areas

Clean energy for electricity, heating and transport –

continued transitioning away from fossil-based electricity and the integration of electricity, heating and transportation is a common challenge for all the Nordic countries. As far as transportation is concerned, joint energy research is particularly important within the areas of heavy road traffic, maritime transport and the aviation sector. The challenges within the energy sector should be met by collaborative research. Electrification presents an opportunity to develop clean transport systems, as does biofuels.

Regional grids – the Nordic regional electric grids need to be reinforced, equipped with more smart technologies and be better connected to other European countries. An increase in non-dispatchable electricity generation should make use of flexibility in generation and end use, storage and digitalization in order to meet high demands on security of supply.

Active end users – the consumers have a central role in the development of the Nordic energy system. Studies of behaviour, motivation and incentives in relation to end users are important research areas for creating tools for a societal transition to a sustainable energy system.

Nordic energy system studies – the study of energy systems is essential to understanding how the multiple energy elements, including life cycle analysis (LCA), interact in a Nordic context. This understanding forms the basis for structuring and presenting knowledge applicable to societal decision-making. Insight from these studies will also help inform the priorities of stakeholders in industry and government.



Tools for Nordic Collaboration

Outreach in the Nordics and other regions is an important tool for transforming research results into impacts in terms of innovation and commercialization.

Exchange of young researchers is a way to foster strong relationships between Nordic countries and create a basis for better knowledge exchange between future generations of energy researchers. To encourage this, Ph.D. programs should be created as part of larger energy research programs.

Meta studies are a powerful way to leverage research being done in the Nordics and thus increase the impact from it.

Nordic-Baltic collaboration. The Nordic and Baltic countries are already collaborating in energy research. This will be reinforced in areas of joint interest and increasing importance, such as the electric grid and transportation.

Stakeholder co-financing. Involvement of stakeholders is key for identifying and responding to strategic priorities for Nordic research cooperation. This involves consultations with National stakeholders regarding joint Nordic actions and co-funding of research.

Cross-disciplinary research. Transitioning to a sustainable energy system is a societal challenge. Cross-disciplinary research is needed to tackle all the aspects involved and facilitate the transition.

Closer collaboration between all relevant institutions under the Nordic Council of Ministers could be advantageous. Nordic Energy Research will benefit from such co-operation, particularly in research dealing with wider societal challenges where energy is one part.