

Statkraft's invitation for R&D applications 2022

This call applies to KSP projects for the Norwegian Research Council with an application deadline of the 9th February. We welcome proposals for IPN projects as well.

The call consists of:

- Background
- Priority areas for 2022
- Process

Background

Statkraft is committed to a diverse R&D portfolio, we believe that a strong R&D program is vital in supporting the company achieve its strategic objectives. Statkraft uses R&D to develop an industry leading knowledge and competency base, to build networks and identify opportunities across business areas and geographies and to provide expert input into the political and regulatory agenda. As a major industrial player, we seek to take an active role in R&D initiatives and preferably carry out projects in collaboration with industry, research, and educational institutions.

Statkraft's strategy has a market centric approach, finding the best opportunities in renewable energy within each country, across technologies. We aim to achieve this through 4 pillars: Optimise and expand hydropower, growing as a wind and solar developer, growing the customer business, and developing new business initiatives.

Statkraft R&D Strategy

The R&D strategy supports Statkraft's overall strategy by focusing on growth areas within and across the 4 pillars:

- **Hydropower:** Efficient operation and maintenance, improve energy management, increased flexibility, knowledge-based framework conditions
- **Wind and solar:** Reduce energy costs (LCOE), improve project selection and prioritisation, evaluate and enable new business opportunities, and ensure sustainable development.
- **Market operations and customers:** Improve trading, customer business and district heating. Strengthen knowledge about future energy markets and climate change.
- **New business initiatives:** Contribute to increased electrification and decarbonisation by increasing the use of renewable energy in energy sectors that today mainly use fossil energy, as well as increasing energy consumption through fuel cells and renewable fuel, energy storage and energy transport.
- **Cross sector topics:** Develop knowledge, competence and tools within areas that support the strategic objectives for example in digitalisation, sector coupling, environment and sustainability and hybrid systems.

Topics and priorities for the call (KSP) 2022:

Below are several topics of interest that Statkraft would like to receive project proposals on. These topics have been specifically identified as focus areas for KSP projects in 2022.

Digitalisation

- Identifying data driven tests and detection methods for failure modes in hydropower plants. The failure modes need to have critical impact to health, safety and environment as well as an economic value.
- Developing cost efficient sensor technology fitting the tests and detection methods above.
- Developing analytical tools for data-based analysis and decision making.
 - For queries please contact: tone.knudsen@statkraft.com

Energy Storage

- Long term energy storage - examine the trajectory to 2050 of long-term energy storage solutions including: which technologies will respond to seasonal demands, how long-term storage requirements will match different generation and demand profiles, what are the costs and barriers to large scale deployment.
- Technology of different energy storage solutions for short, medium, and long-term requirements. How to integrate and optimise storage solutions to stack services and revenue. Lifecycle studies of different technologies
 - For queries please contact: victoria.griffiths@statkraft.com

Distributed Energy Services

- Distributed energy resources and sector coupling, exploring synergies and business models when combining electricity, heating/cooling, and energy storage.
- Digital solutions for optimising demand side flexibility, data acquisition and orchestrating including smart grid cybersecurity.
- Impact of present and future regulations, entry barriers and the role of other incentives on integrated energy systems in Norway and Europe.
 - For queries please contact: victoria.griffiths@statkraft.com

Green hydrogen, ammonia, or methanol

- Fuel cell technologies and applications.
 - For queries please contact: victoria.griffiths@statkraft.com

Role of circularity in energy sector:

- The potential of adopting circular business models for energy producers.
- Regulatory and policy barriers for implementing circular business models.
- Challenges or barriers for implementing circularity within entire value chains.
- How to include circularity within new value chains.
- Technoeconomic feasibility of pathways and solutions for reducing the climate footprint.
- Techniques for measuring circularity and the impacts
- In addition, we invite technology specific projects to improve circularity within Statkraft's different business areas.
 - For queries please contact: tone.knudsen@statkraft.com

Project selection criteria

Statkraft will emphasize achieving a diverse portfolio which in total responds to the topics and challenges described. We also welcome collaborative research proposals from institutes where collaboration could strengthen project results. We are keen to see projects with a strong mix of partners both Norwegian and international.

Relevance:

- Projects most relevant to the topics described above will be given priority.
- Project proposals outside of the described topics may also be considered if they are in line with Statkraft's strategic focus.

International perspective

An important aspect of Statkraft's strategy focuses on growth outside of the Nordic region. It is therefore desirable to participate in projects which build networks and increase collaboration with universities, research institutes and industrial partners outside the Nordics.

Value creation potential

- Statkraft seeks projects where the financial contribution is balanced against our participation.
- Statkraft actively seeks projects which offer good value for money, time, and resources.

Process

The KSP selection process is shown in the table below:

Process	Deadline (date)
Invitation issued from Statkraft	18 th October 2021
Deadline for first proposal	19 th November 2021
First screening and evaluation from Statkraft	November - December 2021
Project discussions and scoping	January 2022
Final project decision from Statkraft (LOI)	4 th February 2022
Deadline Research Council of Norway (KSP)	9 th February 2022