



# NTNU

Kunnskap for en bedre verden

**Jobbno** ID: 267629  
**Deadline:** 10/6/2024  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

The Department of Industrial Economics and Technology Management has a vacancy for a

## PhD position within optimal infrastructure planning for zero-emission offshore energy systems

### This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 43,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QS0>

### Background

There is a PhD Candidate position available at the [Department of Industrial Economics and Technology Management](#) - section Managerial Economics, Finance and Operation Research. The position is resident at NTNU's campus in Trondheim. This is an educational position, which will provide promising research recruits the opportunity for professional development through studies towards a PhD-degree. The position is connected to the PhD program at the Faculty of Economics and Management and the faculty will be your employer.

### Information about the Department of Industrial Economics and Technology Management

[The department](#) is organized into six sections:

- Managerial Economics, Finance and Operations Research
- Health, Safety and Environment Management
- Strategy and Business Development
- Operations Management
- Experts in Teamwork
- Section of Economics and management (Campus Gjøvik)

The PhD position will be part of The LowEmission Research Centre at NTNU and SINTEF. The centre develops new knowledge and technologies for decarbonization of offshore energy systems, energy efficiency and integration with renewable power production technologies for application on the Norwegian Continental Shelf (NCS), see: <https://www.sintef.no/en/projects/lowemission-research-centre/>.

### About the position

Offshore energy systems are increasing in complexity, transitioning from fossil production only to incorporating renewable generation, hydrogen production and CO<sub>2</sub> capture and storage (CCS) value chains. Through comprehensive energy export infrastructures and grids, these systems are tightly connected to the larger grid, industry and energy sectors. The increased integration and diversification of energy carriers can enable new opportunities for providing decarbonized energy and security-of-supply. However, the optimal planning of such zero-emission offshore energy systems is challenging and subject to uncertainty on multiple scales. Managing the uncertainty in this planning requires solving large and stochastic optimization problems using advanced modeling and computational approaches.

Relevant topics are models and algorithms to analyze:

- Hydrogen and CCS based offshore energy systems that are designed to ensure zero emissions along the whole value chains, including end use
- the interaction of the North Sea offshore energy system with the decarbonized EU energy system, focusing on energy security and tightened emission requirements
- offshore wind developments for combined clean energy supply to the facilities at the NCS and for export to Europe and Scandinavia

Methodologically, the project will be based on large-scale energy system analysis and optimization under uncertainty. This includes techno-economic modelling, stochastic programming and/or energy policy analysis. The project will be a cooperation between NTNU and SINTEF, and the academic and industrial partnership of the LowEmission centre.

You will report to your supervisor.

## Duties of the position

- Execute a PhD project within 3 years (including obtaining own data for research, analysis and dissemination).
- Plan and execute field work, stakeholder survey or interviews for data collection targeted to address the research objectives.
- Complete the necessary doctoral coursework as per NTNU's guidelines.
- Attend project meetings and develop a collaboration network with industrial and academic partners.
- Disseminate research findings through national/international academic conferences and open access scientific journals that meet the requirements for the PhD position.

## Qualification requirements

- The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is completion of a master's degree or second degree (equivalent to 120 credits) with a strong academic background in Operations Research or Optimization, or equivalent education with a grade of B or better in terms of [NTNU's grading scale](#). Applicants with no letter grades from previous studies must have an equally good academic foundation.
- The position requires excellent English oral and writing skills.

The appointment is to be made in accordance with [Regulations on terms of employment for positions such as postdoctoral fellow, PhD candidate, research assistant and specialist candidate](#) and [Regulations concerning the degrees of Philosophiae Doctor \(PhD\) and Philosodophiae Doctor \(PhD\) in artistic research national guidelines for appointment as PhD, post doctor and research assistant](#).

## Preferred selection criteria

- Background and/or experience relevant to the project topic (see the project topic)
- Documented experience with stochastic optimization
- Documented experience with energy system analysis
- Good knowledge of digital tools like Julia, Python, etc.
- Scandinavian language skills

## Personal characteristics

- A high level of personal responsibility and initiative
- Ability to work independently as well as part of a team in accordance with the project objectives
- Ability to work in interdisciplinary projects and teams
- Suitable candidates should have good communication skills, be flexible and solution-oriented

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, in terms of the qualification requirements specified in the advertisement.

## We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and [inclusive work environment](#) with dedicated colleagues
- favourable terms in the [Norwegian Public Service Pension Fund](#)
- [employee benefits](#)

Information about Working and living in Norway can be found at the following link: <http://www.nyinorge.no/en/Ny-i-Norge-velg-sprak/New-in-Norway/>

## Salary and conditions

As a PhD candidate (code 1017) you are paid gross NOK 532.200,- per annum before tax, From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years.

Appointment to a PhD position requires that you are admitted to the PhD programme in [Industrial Economics and Technology Management](#) within three months of employment, and that you participate in an organized PhD programme during the employment period.

The engagement is to be made in accordance with the regulations in force concerning [State Employees and Civil Servants](#), and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU.

After the appointment you must assume that there may be changes in the area of work.

The position is subject to external funding.

Your work place will be at the Department of Industrial Economics and Technology Management (<https://www.ntnu.no/iot>). It is a prerequisite you can be present at and accessible to the institution daily.

## About the application

The application and supporting documentation to be used as the basis for the assessment must be in English. Publications and other scientific work must follow the application. Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

The application must include:

- Application letter concerning your motivation for completing a PhD
- A CV with information on education, previous research experience, together with authorized documentation of certificates and study records.
- Academic work (not master thesis). Joint work will be evaluated. If it is difficult to identify the contributions from individuals in a joint piece of work, applicants should enclose a short descriptive summary of what she/he contributed to the work.
- Name and address of three references

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both bachelor's and master's education, in addition to other higher education. Description of the documentation required can be found [here](#). Please note that diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from [China Credentials Verification \(CHSI\)](#). If you already have a statement from NOKUT, please attach this as well.

We will take joint work into account. If it is difficult to identify your efforts in the joint work, you must enclose a short description of your participation.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

Please submit your application electronically via [jobbnorge.no](#) with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered.

## General information

### [Working at NTNU](#)

NTNU believes that inclusion and diversity is our strength. We want to recruit people with different competencies, educational backgrounds, life experiences and perspectives to contribute to solving our social responsibilities within education and research. We will facilitate for our employees' needs.

**The city of Trondheim** is a modern European city with a rich cultural scene. Trondheim is the innovation capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the reservation is not accepted.

Questions about the position can be directed to Professor Asgeir Tomasgard email [Asgeir.tomasgard@ntnu.no](mailto:Asgeir.tomasgard@ntnu.no) or phone + 47 930 58 771. If you have any questions about the recruitment process, please contact HR Advisor Hilde Sellie Egelie, e-mail: [hilde.s.egelian@ntnu.no](mailto:hilde.s.egelian@ntnu.no).

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbnorge.no](#) with your CV, diplomas and certificates attached.

**Application deadline: 06.10.2024**

## NTNU - knowledge for a better world

### NTNU - knowledge for a better world

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

### Department of Industrial Economics and Technology Management

We conduct research and teaching at an international level in the interface between technology/natural sciences and economics, management, and HSE (health, safety and the environment). Our goal is sustainable creation of value within technology-based areas in industry, business and the public sector in Norway. We have academic groups in Trondheim and Gjøvik. The [Department of Industrial Economics and Technology Management](#) is one of four departments in the [Faculty of Economics and Management](#).

## Additional information

### Place of service:

