

## The Department of Industrial Economics and Technology Management has a vacancy for a PhD Candidate within Modeling in support of the low-carbon transition

### This is NTNU

At NTNU, creating knowledge for a better world is the vision that unites our 7 400 employees and 42 000 students.

We are looking for dedicated employees to join us.

Video: <https://www.youtube.com/watch?v=clgKd1SwGLI>

### About the position

There is a temporary position available at the Department of Industrial Economics and Technology Management as PhD Candidate in energy markets and systems modeling for a period of three years (plus potentially one year of duty work).

This is an educational position which will provide promising research recruits the opportunity for professional development through studies towards a PhD.

The position is connected to the PhD-program at the Faculty of Economics and Management and the faculty will be your employer.

[The department of Industrial Economics and Technology Management](#) is organized into six sections:

- Managerial Economics, Finance and Operations Research (BEDØK)
- Safety, Health and Environment (HMS)
- Operations Management (VIL)
- Strategy and Business Development (Stratfarr)
- Experts in Teamwork (Section for EiT)
- Economics and Management (located in Gjøvik)

The PhD Candidate will be part of the Section for Managerial Economics, Finance and Operations Research.

### Duties of the position

The Energy Research Group (in section BEDØK) is a diverse, internationally oriented group of Professors, Researchers and PhD Candidates who develop techno-economic decision support models for policy analysis and decision making in the energy system at large, often considering short-term and long-term uncertainty. The research is based on (stochastic) mathematical programming, equilibrium and simulation models, and statistical empirical analysis. We collaborate with many national and international research and industry partners in many research projects. As a PhD Candidate in our department you will be part of a diverse, inclusive and socially active research group.

Driven by curiosity and a desire to contribute to methodological advances, we develop and apply mathematical programming, simulation and econometric models, compile data sets and perform analyses with the aim to inform government and industry decision makers and to publish and make available our results in the open access domain.

The PhD Candidate will contribute to quantitative modeling and analysis in support of the transition to a sustainable, low-carbon energy system and society, taking into account the boundaries and interactions between energy and other actors and sectors. We wish to better address environmental and climate effects, aspects of market design, local and peer-to-peer markets, and to reflect behavior such as technology choice, and policy uptake, in technology-oriented economic models.

The PhD Candidate will research how investment and operations in different types of flexibility can contribute to managing an energy system with large shares of renewable energy supply. The PhD Candidate will have a co-supervisor from TU Berlin. This position will include a one-year research stay at TU Berlin, and should lead to a dual PhD degree. It is funded by NTNU strategic research area 'Energy', and connected to research projects such as EC Horizon 2020 project [OpenENTRANCE](#) and the NTNU Energy Transition Initiative ([NETI](#)).

### Required selection criteria

- A master's degree or second degree (equivalent to 120 ECTS) in operations research or another relevant field. Suitable candidates who will submit their master's thesis within two months of the application deadline are encouraged to apply.
- Applicants must have a weighted average grade for the last two years of their master's or second degree (equivalent to 120 ECTS credits) of B or higher in terms of NTNU's grading scale. Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be admitted only if they can document that they are particularly suitable candidates for education leading to a PhD degree.
- Working ability with computer programming languages.

- English proficiency, both oral and written.

#### **Factors that will contribute positively to the evaluation and that should be documented in the application:**

- A thesis or publications with relevance for the research area
- Knowledge and experience concerning (renewable) energy systems and markets, stochastic programming, policy analysis
- Experience with Python/Pyomo or similar programming languages

The appointment is to be made in accordance with the regulations in force concerning [State Employees and Civil Servants and national guidelines for appointment as PhD, post doctor and research assistant](#).

### **Personal characteristics**

Personal suitability for inclusion in the research team, with special emphasis on interpersonal and communication skills.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, as well as motivation, 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
- Attractive Norwegian social welfare scheme including family benefits, home loans, Insurance and pensions in the Norwegian Public Service Pension Fund

Information about Working and living in Norway can be found at the following link: <http://www.nyinorge.no/en/>

### **Salary and conditions**

PhD Candidates are remunerated in code 1017, remunerated at gross NOK 479 600 per annum before tax. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The position is connected to the PhD programme at the Faculty of Economics and Management and the faculty will be your employer. Appointment to a PhD position requires admission to the PhD programme in Faculty of Economics and Management, Department of Industrial Economics and Technology Management (<https://www.ntnu.no/iot>)

As a PhD Candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you are in fact qualified for admission to the PhD programme within three months.

Appointment takes place on the terms that apply to State employees at any time, and after the appointment you must assume that there may be changes in the area of work.

Primary residency in Trondheim is a prerequisite.

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.

### **About the application**

Applications should include:

- A cover letter (maximum 1 page) describing motivation and qualifications for the position as a PhD Candidate.
- A CV with information on education, research experience, and publications.
- Authorized documentation of certificates and study records.
- Publications and other relevant scientific work.
- A self-developed research proposal of two pages targeting on of the positions, including research questions, research methods and relevant literature references.

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 they contributed to the work.

Incomplete applications will not be considered.

An application including attachments should be sent electronically through: [www.jobbnorge.no](http://www.jobbnorge.no).

### **General information**

[Working at NTNU](#)

A good working environment is characterized by diversity. We encourage qualified candidates to apply regardless of gender, disability or cultural background.

Under the Freedom of Information Act (Offentleglova), information about the applicant may be made public even if the applicant has requested not to have their name entered on the list of applicants.

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

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.

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.

Further information about the position is available from Professor Ruud Egging-Bratseth, email [ruud.egging@ntnu.no](mailto:ruud.egging@ntnu.no).

Application Deadline: November 1st 2020.

## **NTNU - knowledge for a better world**

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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](#).

Jobbnorge ID: 194035, Deadline: 01.11.2020, Customer reference: 2020/31962