NTNU

Kunnskap for en bedre verden

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

PhD Candidate within the project Planning Clean Energy Exports

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=cIgKd1SwGLI

About the position

There is a temporary PhD position for 3 years available at the Department of Industrial Economics and Technology Management - Section Managerial Economics, Finance and Operation Research.

The position is resident at NTNUs 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.

This PhD is part of the Clean Export project with partners; NTNU, SINTEF Energi, Agder Energi, Air Liquid, Equinor, Gassco, Total E&P Norge.

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)

About the position

Significant reductions in the cost of solar and wind energy have led policy makers and researchers to suggest a zero emission power system in order to achieve the goals of the Paris Agreement. A viable, clean electricity grid in all seasons and over long periods requires substantial sources of flexibility in the energy mix such as hydropower and natural gas with carbon capture and storage (CCS). Greening the power generation sector alone is not enough to reach the Paris climate targets. CO2 savings will also need to be made in the industry, transport (long distance, aviation, shipping), and building (e.g. residential heating) sectors. This is particularly important for Norway where emission reductions will have to be made in these sectors to achieve its climate target as 98% of the electricity production comes from renewable sources - primarily hydropower. Specifically, one of the technologies pointed out as being important to reduce CO2 emissions from these sectors is hydrogen.

Norway's economy has to a large extent been boosted by the export of oil and gas, contributing by around 450 Billion NOK in 2017. The market trends towards low-emission energy carriers offer challenges and opportunities to Norway’s prospects as an energy exporting country.

Norwegian natural gas can be converted to clean hydrogen with the help of CCS for export and potentially triggering the development of a domestic hydrogen market.

The project will develop stochastic optimization models to represent an energy system with multiple energy carriers (e.g. heat and electricity) and technologies. The model will have a detailed representation of clean energy exports for Norway coupled with a European energy system model. The analysis will focus on analysing long-term strategies for Norway to adapt to EU decarbonization pathways. The design, development and ideas of the model to analyse clean exports for Norway will be at the centre of the project.

You will report to your supervisor.

Required selection criteria

- The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is that you have completed a master’s degree or second degree (equivalent to 120 credits) with a strong academic background in operations research and optimization or equivalent education with a grade of B or better in terms of NTNU’s grading scale. If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you are unable to meet these criteria you may be considered

only if you can document that you are particularly suitable for education leading to a PhD degree.

- The position requires excellent English oral and writing skills. Some Scandinavian language skills would be preferable.

In addition, the following qualifications will contribute positively to the evaluation of the applicant:

- Background and/or experience relevant to the project topic (see the project topic)
- Documented experience with stochastic optimization
- Documented experience with energy systems and markets
- Good knowledge of digital tools like Matlab, Python, etc.
- Industrial experience

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
- Attractive Norwegian social welfare scheme including family 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/.

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.

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 period of employment is 3 years without required teaching duties. The position is connected to the PhD program 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 Economics and Management, programme option Industrial Economics and Technology Management, and your work place will be at the Department of Industrial Economics and Technology Management (https://www.ntnu.no/iot).

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

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, as well as 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.

Incomplete applications will not be considered.

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.

About the application

The application must include:

1) Application letter concerning your motivation for completing a PhD
2) A CV with information on education, previous research experience, together with authorized documentation of certificates and study records.
3) 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.

Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application.

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates.

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).

General information

Working at NTNU

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity 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.

Questions about the position can be directed to Professor Asgeir Tomasgard email Asgeir.tomasgard@ntnu.no or phone +47 930 58 771 or Researcher Pedro Crespo del Granado email pedro.crespodelgranado@ntnu.no or phone +47 7355 8976.

Application deadline: 24.05.2020

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: 187054, Deadline: 24.05.2020, Customer reference: 2020/12371