

Jobbnorge ID: 289457
Deadline: 12/5/2025
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Temporary

The Department of Energy and Process Engineering has a vacancy for a

PhD Position - Climate Change Mitigation in the Maritime Sector

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>

About the position

The Industrial Ecology Program (IndEcol), Department of Energy and Process Engineering (EPT), at the Norwegian University of Science and Technology (NTNU) has an opening for a PhD position on Climate Change Mitigation in the Maritime Sector.

The position will be part of the broader work within the Norwegian R&D centre for Maritime Energy Transition (FME MarTrans) on climate change mitigation in the transport sector. The objective of the research is to identify mitigation strategies in the interface between the maritime and energy sectors. The work includes collaborative opportunities with the Energy, Climate, and Environment Program at the International Institute for Applied Systems Analysis (IIASA).

The research will build on the existing [MariTeam framework](#) and its integration with MESSAGEix to investigate mitigation options for the sector. Key tasks for the PhD position involve applications of the existing framework and advancement in the interface towards integrated assessment and energy system models for scenario analysis. The selected candidate will join a team of interdisciplinary researchers working on bridging engineering sciences with life cycle assessment and climate sciences. The duration of the position is 3 years.

Duties of the position

- Complete the doctoral education until obtaining a doctorate.
- Advance the MariTeam model and its interface with energy and integrated assessment models.
- Enhance the level of detail within the maritime fleet module, including operational and technology mitigation options, while maintaining consistency with MESSAGEix.
- Apply the MariTeam model for national, regional, or global climate change mitigation scenarios for the maritime sector, including both technological advancements as well as demand side measures.
- Explore transition pathways for the maritime sector improving the representation of the maritime sector within broader energy and climate frameworks.

Required selection criteria

- You must have a relevant Master's degree in Climate Sciences, Integrated Assessment Modelling, Industrial Ecology, Energy or Aerospace Engineering, Computer Science, Applied Physics, or equivalent. Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level. Master students can apply, but the master's degree must be obtained and documented before starting the position and no later than 31st of March 2026.
- You must have a strong academic background from your previous studies and have an average grade from your Master's degree study, or equivalent education, which is equal to B or better compared to [NTNU's grading scale](#). If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you have a weaker grade background, you may be considered if you can document that you are particularly suitable for a PhD education.
- You must meet the requirements for admission to the faculty's [Doctoral Programme](#).
- Good programming skills in one or several languages (e.g., Python, Julia, MATLAB, Fortran, C++).
- Competence in mathematical modeling and languages for simulation or optimization of climate, energy, or transport systems (e.g., Fortran, Python, GAMS, XPress, Matlab).
- Competence in data processing and parsing, as well as data management.
- Strong analytical skills and capabilities.

- Excellent written and oral English language skills.

Strong, well-matured, and well-articulated motivation for working on the topic is required. The candidates must, therefore, in their application, provide a 1-page letter where they describe i) their motivation for doing a PhD in this domain and ii) how they see their competence and capabilities as relevant for the position.

The candidates are expected to be familiar with key relevant publications from the supervisor. Also, the candidates selected for the interview will be asked to demonstrate a good ability to absorb and present material from the research frontier on the matters at hand, and to take part in a brief coding exercise.

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.

PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".

The appointment is to be made in accordance with [NTNUs guidelines for recruitment positions](#) and [Regulations for the degrees philosophiae doctor \(ph.d.\) and philosophiae doctor \(ph.d.\) in artistic development work at the Norwegian University of Science and Technology \(NTNU\)](#) for general criteria for the position.

Preferred selection criteria

- Competence in one or several of the following frameworks: Integrated Assessment Modeling, Climate or Earth System Modeling, Energy System Models, Life Cycle Assessment, or Dynamic Material Flow Models.
- Experience applying one or some of the above frameworks on subject matters relevant to the maritime sector.
- Knowledge of shipping and the maritime industry is an advantage.
- Experience with version control systems and software development platforms like GitHub and GitLab.
- Experience with High-Performance Computing services.
- Ability to work with large datasets.

Personal characteristics

- The successful candidate will work in a group with other professors and PhDs from different disciplines. The candidate is expected to embrace this setting and be a true team player.
- Self-driven with a strong ability to work independently when required.
- Motivated to work in a multi-disciplinary and multi-cultural team, with an interest in cross-disciplinary learning.
- The evaluation of candidates will place particular emphasis on personal and interpersonal qualities.

We offer

- An exciting job with an important [mission](#) in society
- Developing tasks in a strong and international professional environment
- Career guidance and [follow-up during the PhD period](#)
- Open and inclusive working environment with committed colleagues
- [Mentor programme](#) as a [new employee at NTNU](#)
- Favorable terms as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#).
- Free Norwegian language training at a basic level ([A2](#)).

As a PhD Candidate at NTNU, you will have access to [employee benefits](#).

Diversity

Diversity is a strength, and at NTNU we aim to be an employer that reflects the diversity in society and that makes use of the potential of the population's collective skills. Our vision is [Knowledge for a better world](#) and [our values are creative, critical, constructive and respectful](#). We believe that an organization that is equal, diverse and gender-balanced is essential for us to achieve our goals.

We strive to attract employees with different skills, life experiences and perspectives to contribute to even better problem solving of our societal mission in research and education.

If you think this position is relevant and interesting, we encourage you to apply, regardless of gender, functional ability and cultural background, or whether you have been out of work for a period of time.

At NTNU we want to increase the proportion of women in scientific positions. We have a number of [measures](#) to promote equality. The Department of Energy and Process Engineering (EPT) has established [EPT Women in Science](#). The group is focused on supporting female Research Assistants, PhD Candidates, Postdoctoral Fellows and permanent academic employees within the Department. This support aims to help develop the academic careers of female employees, and is also made visible to our student body, to encourage them to consider an academic path. As part of the EPT Women in Science initiative, we offer a mentoring support, and we continue to build on our international network, inviting prominent female academics within and beyond the field of Engineering to speak at our events.

Salary and conditions

In the position of PhD Candidate, code 1017, your gross salary will normally be NOK 550 800,- per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The employment period is 3 years.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the [PhD programme in engineering](#) within three months of your employment contract start date, and that you participate in an organized doctoral programme through out the period of employment.

The position is conditional on external funding.

As an employee at NTNU, it is important that you keep yourself up to date with academic and organizational changes and adapt to them.

For the necessary professional and social interaction, it is a prerequisite that you are physically present and available to the institution on a daily basis.

The appointment is carried out in accordance with the principles of the [State Employees Act](#), and [Export control](#) (legislation that regulates the export of knowledge, technology and services). Candidates who, after assessment of the application and attachments, are considered to be in conflict with the criteria in the latter act, will not be able to be employed.

About the application

The attachments (including a description of your scientific work) must accompany the application as these documents form the basis of the application assessment. The documents must be in English.

Please note: the application will only be assessed on the basis of the information we have received by the application deadline. Therefore, make sure that your application clearly shows how your skills and experience meet the criteria described above. The application and all attachments must be sent electronically via [Jobbnorge.no](#). If you are invited to an interview, you must bring certified copies of certificates and diplomas upon request.

The application must include:

- Transcripts and diplomas for Bachelor's and Master's degrees
- CV
- Copy of Master's thesis. If you have recently submitted your Master's thesis, you can attach a draft of the thesis. Documentation of a completed Master's degree must be presented before taking up the position.
- Project outline containing proposals for an overall description of research questions, theoretical perspectives, methodological design for the project and progress plan (maximum 1500 words/4 pages)
- Short letter of motivation (400 words/1 page)
- Possibly publications etc. other relevant research work
- Possibly certificates
- Names and contact information of three relevant referees
- 1 page of motivation for the position including the relevance of your academic background.
- If you have publications or other relevant research work
- An example of code you have developed (in Python, Matlab, C++, Fortran etc.)

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. If your institution uses "diploma supplement" (normal for most European institutions), you must attach this. A description of the documentation required can also be found [here](#). If you already have a statement from [Norwegian Directorate for Higher Education and Skills \(HK-dir.\)](#), please attach this as well.

Joint work will be considered. If it is difficult to identify your contribution to joint work, you must attach a brief description of your participation.

NTNU recognizes a wide range of academic contributions and has committed itself to [The San Francisco Declaration on Research Assessment](#) and [CoARA](#) (responsible assessment of research and recognition of a greater breadth of academic contributions in accordance with NTNU's social mission).

General information

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you wish to be exempt 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 exemption is not granted.

If you think this position looks interesting and in line with your qualifications, you are welcome to apply.

If you have any questions about the position, please contact Professor Anders Hammer Strømman, email anders.hammer.stromman@ntnu.no.

If you have any questions about the recruitment process, please contact HR Consultant Martha Aftret Karlsvik, e-mail: martha.a.karlsvik@ntnu.no.

Application deadline: 05.12.2025

For practical information about [working at NTNU](#), please visit [this webpage](#).

[The city of Trondheim](#) is a modern European city with a rich cultural scene. [Trondheim is the tech 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.

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 Energy and Process Engineering

We conduct research and teaching covering the entire energy chain, from resources to the end-user. We look at how energy is produced and used by humans and machines in a sustainable way with regard to health, climate change and the resource base. [The Department of Energy and Process Engineering](#) is one of eight departments in the [Faculty of Engineering](#).

Additional information

Contact person:

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Place of service:

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