

**Jobbnoze ID:** 228509  
**Deadline:** 8/28/2022  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Permanent

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

## PhD position for research in transformative knowledge to accelerate change for biodiversity

### 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 42,000 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

For a position as a PhD Candidate, the goal is a completed doctoral education up to an obtained doctoral degree.

We have a vacancy for a PhD candidate in the [Industrial Ecology Programme \(IndEcol\)](#) at the Department of Energy and Process Engineering. The appointment has a duration of three years with an anticipated start date in January 2023. The appointment is financed through the Horizon Europe project "Coproduced transformative knowledge to accelerate change for biodiversity" (RAINFOREST).

RAINFOREST is a project with partners in the Netherlands, Austria, Switzerland, Germany, Peru, and Brazil. The project aims to contribute to halting and reversing biodiversity loss caused by our global food and biomass production systems. This requires upscaling and accelerating transformative change of these systems, including addressing the nexus of agricultural production, processing and transport, retailing, consumer preferences and diets, as well as investment, climate action and ecosystem conservation and restoration. RAINFOREST will use a novel combination of integrated assessment modeling, input-output modeling and life cycle assessment, based on case studies in various stages of the nexus, at different spatial scales and organizational levels. The aim is to also elucidate leverage points, impacts, and obstacles for transformative change and provide concrete and actionable recommendations for transformative change for consumers, producers, investors, and policymakers.

The focus of this PhD is the development of a model toolbox for quantifying biodiversity impacts, using both life cycle assessment (e.g. [LC-IMPACT](#)) and input-output models ([EXIOBASE](#)). The project includes collaboration with the Radboud University in the Netherlands, IIASA in Austria, and the Pontificia Universidad Catolica del Peru, among others.

IndEcol is a pioneer in the development and application of industrial ecology methods, as well as the use of large data sets and scientific computing in industrial ecology. We focus on understanding resource use and environmental pollution associated with human activities, assessing the environmental aspects of different technologies and modeling society's use of materials. IndEcol combines world-class competence in Life Cycle Assessment (LCA), Input-Output analysis (I/O), and Material Flow Analysis (MFA) with scientists' contribution to IPCC assessment reports, the International Resource Panel, active participation to the UNEP/SETAC Life-Cycle Initiative, and numerous publications featured in high-ranked journals. IndEcol hosts its own International MSc program and contributes to NTNU's engineering education- The [research team](#) consisting of eight faculty members, the [Industrial Ecology Digital Laboratory](#), and about 70 researchers, post.docs and PhDs.

The Head of Department is Professor Terese Løvås. The position's supervisor is Professor Francesca Veronesi, the co-supervisor is Professor Edgar Hertwich.

### Duties of the position

- Co-design and develop a model toolbox for quantifying biodiversity impacts from food and biomass systems
- Deriving spatially differentiated characterization factors
- Contribute to generating and analyzing quantitative projections of the just and viable pathways for biodiversity
- Develop an online calculator for showcasing the biodiversity footprint of kitchen recipes

- Dissemination of results in scholarly journals, at international conferences and for the general public
- Contributing to the RAINFOREST deliverables

## Required selection criteria

- You must have a professionally relevant background in industrial ecology, environmental science/engineering, agronomy, mathematics, or similar. Bachelor's and master's degrees in other disciplines will be considered on a case-by-case basis. In particular we are also open for applicants with a social or natural science master's with strong computational or statistical competence.
- Your education must correspond to a five-year Norwegian degree program, where 120 credits are obtained at master's level.
- You must have a strong academic background from your previous studies and an average grade from the master's degree program, or equivalent education, which is equal to B or better compared with NTNU's grading scale. If you do not have letter grades from previous studies, you must have an equally good academic basis. If you have a weaker grade background, you may be assessed 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 program.
- You must describe your motivation and qualification for the research in your cover letter.
- Interest in sustainability science and strong incentive to learn Industrial Ecology methods like LCA and input-output analysis.
- Proven analytical and computational capabilities, in courses and or/thesis deliverables.
- Proven written and oral English communication skills.

The appointment is to be made in accordance with [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

- Completed courses in life cycle assessments is an advantage
- Documented competence in using the Python scientific computing stack (Numpy, Pandas, Jupyter Notebooks) or of another programming language used for environmental data analysis is of advantage
- Experience with data visualization
- Excellent, proven skills in project management and/or communication and outreach

## Personal characteristics

- Self-motivated, enthusiastic, and dedicated
- Motivated to solve environmental problems and advance sustainability
- Ambitious and goal-oriented
- Team player
- Excellent communication skills

Emphasis will be placed on personal and interpersonal qualities.

## 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](#)

## Salary and conditions

As a PhD candidate (code 1017) you are normally paid from gross NOK 491 200 per annum before tax, depending on qualifications and seniority. 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 Ecology 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.

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:

- CV, certificates and diplomas.
- Transcripts and diplomas (original and English translations) for bachelor's and master's degrees. If you have not completed the master's degree, you must submit a confirmation that the master's thesis has been submitted.
- A copy of the master's thesis. If you recently have 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.
- In addition to the cover letter, a document outlining your motivation for the position and how you meet the required/preferred criteria for the position. We very much appreciate links to open-source repositories highlighting previous work.
- Name and contact information of three referees
- If you have publications or other relevant research work

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](#). 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](#).

## 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.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of resources to [promote equality](#).

**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.

If you have any questions about the position, please contact Professor Francesca Verones, e-mail: [francesca.verones@ntnu.no](mailto:francesca.verones@ntnu.no) og Professor Edgar Hertwich, e-mail: [edgar.hertwich@ntnu.no](mailto:edgar.hertwich@ntnu.no). If you have any questions about the recruitment process, please contact HR consultant, Renate Fjellheim, e-mail: [renate.fjellheim@ntnu.no](mailto:renate.fjellheim@ntnu.no).

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbnorge.no](http://jobbnorge.no) with your CV, diplomas and certificates attached. Applications submitted elsewhere will not be considered. Upon request, you must be able to obtain certified copies of your documentation.

**Application deadline: 28.08.2022**

## 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 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

### Place of service:

Gløshaugen 7034 Trondheim (Trondheim Municipality)