

## UiO:Energy Call for summer research projects 2021

**Student research project title:** “Analysis of the CCUS technology providers and their move to new user sectors in Norway”

### **Project description:**

Due to growing recognition of the urgency of climate change mitigation and the need for rapid and deep decarbonization, Carbon Capture, Utilisation and Storage (CCUS) technology has received increasing attention in recent years. CCUS is considered a crucial option for ‘difficult to decarbonize’ sectors as steel, cement and industry where direct renewable electrification is not an option. Furthermore, CCUS is central for achieving the negative emissions that most climate mitigation scenarios include.

We are a group of researchers at TIK interested in understanding how the recent changes to CCUS have influenced innovation in the technology as well as what the main drivers and barriers are currently. We are looking for a student to help us research CCUS developments in Norway. CCUS-related solutions of Norwegian technology companies (for example [bio-CCS](#)) can potentially be applied to many user sectors as a way to contribute to their decarbonization. However, we do not have currently a full understanding of how such technology companies work towards decarbonization goals across sectors and how this affects the technological solutions they develop and sell and in turn contributes to the decarbonization. The student will work on a research project aimed at analysing the population of such CCUS technology providers and their attempts to apply the technologies to new user sectors. The student will have the opportunity to engage in cutting edge research at the intersection of sustainability transitions and industry dynamics. Finally, the student project will be integrated in the ongoing research conducted at the TIK, NTRANS and INTRANSIT centres and the student will work closely with researchers. In this sense, the student will gain hands-on experience of how research of ongoing processes related to sustainability issues is conducted.

### **Available projects: 1**

#### **Outline of student project work:**

We are looking for someone who will analyse the population of technology providers related to CCUS and their activities in new user sectors over time (approximately 2005-2020). The student will work towards identifying who the CCUS technology providers are in Norway, what they do (what solutions they sell and to whom), what kind of innovation activities they engage in, and whom they collaborate with. We envisioned two specific deliverables for the student project.

#### *Expected deliverable 1: Database of CCUS technology suppliers*

A database with technology providers, their activities, innovation projects, collaborations and potential entry-exit to the different new user sectors such as cement, waste-to-energy, hydrogen, steel, e-fuels etc. based on several data sources. Examples of data sources can be: public databases on firms such as proff.no and Brønnøysundregistrene; analysis of cluster organisation members, public R&D project databases, online conferences (Zero, Hydrogenforum etc.), media analysis.

*Expected deliverable 2: survey of CCUS technology suppliers*

Building on the first deliverable, a phone survey of technology providers to understand their profile, their activities related to CCUS and their rationales, expectations and their view on main drivers and barriers including possible tasks for policy. The survey will be designed together with the researchers.

**Preferred project period:**

Spring semester 2021; e.g. April-June.

**Supervision:**

Allan Dahl Andersen (assist. prof. at TIK, NTRANS and INTRANSIT centres) and Jakoba Sraml Gonzalez (postdoc, TIK, NTRANS and INTRANSIT centres) will supervise the student. In practice, the student will work in a team and closely with the supervisors to design the research project in detail (the steps of reaching the expected deliverables) and during the research project. The student will be given access/insight into the existing data to support the process.

**Preferred background of students:**

We are looking for a student that has some understanding of innovation studies and theory, sustainability issues, and preferably has a social science background. In terms of methods, skills in document analysis, media analysis and survey / interviews are meriting. This will be a good opportunity to understand how empirical work for research projects is done and potentially to form a basis for their master theses. Good knowledge of Norwegian is important.