

The **Climate Finance and Policy Group (CFP)** within the **Department of Humanities, Social, and Political Sciences** of **ETH Zurich** offer a

# Master project: The impact of financial engineering on offshore wind economics

## Research field and tasks

Offshore wind is crucial for decarbonizing power systems, especially in Europe, where installed capacities are expected to increase from 27 GW in 2021<sup>1</sup> to 60 GW in 2030 and to 300 GW in 2050<sup>2</sup>. However, unlike onshore wind and solar PV projects, investments into single offshore wind farms are much larger<sup>3</sup>, requiring careful financial engineering to make the projects economically feasible.

The master thesis will investigate financial models to decrease financing costs for offshore wind farms. The thesis will aim to answer these questions:

- A) What are existing financial engineering models for offshore wind?
- B) How does the choice of financing model differ between investor types and project development stages?

To answer these questions, the student will analyse a transaction database (available to our group) containing data on financing models for offshore wind. In addition, we plan to conduct interviews with offshore financing experts to deepen the understanding of the topic.

## Requirements

We are looking for an excellent student interested in renewable energy financing, and in the role of public policies in accelerating capital investment for the energy transition. Relevant Master's program include business, industrial engineering, finance, public policy, energy science and technology, science and technology policy and others. We are generally open in terms of the students background.



Fig 1: Barrow Offshore wind turbines. Source: Wikipedia

Applications from non-ETH students are also welcome. Knowledge of Excel and/or Python and fluency in English are required.

## Conditions

The student will be jointly supervised by [Mak Đukan](#) and [Bjarne Steffen](#) from CFP and [Philipp Beiter](#) from Aquilo Energy. The duration of the thesis is 6 months and the starting date depends on mutual agreement with the student.

## Your application

Your application documents should include a short letter of motivation that includes a description of the relevant experience (max. one page), a CV, a transcript of records (with grades), and the contact information of 1-2 references. Please send your documents by e-mail to: Mak Đukan ([mak.dukan@gess.ethz.ch](mailto:mak.dukan@gess.ethz.ch)). The review of applications will start immediately and will continue until the position is filled.

1. Jansen, M. et al. Policy choices and outcomes for offshore wind auctions globally. *Energy Policy* 167, (2022).

2. European Commission. An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future. (2020).

3. Đukan, M., Gumber, A., Egli, F. & Steffen, B. The role of policies in reducing the cost of capital for offshore wind. *iScience* 106945 (2023) doi:10.1016/j.isci.2023.106945.