Institute of Electricity Economics and Energy Innovation

TU Graz

Bachelor‘s Thesis

Renewable hydrogen policies?!

Implications for expansion planning of power and hydrogen infrastructure

Image: Rafael Classen on pexels.com

Motivation

Renewable hydrogen has the potential to play an important role in achieving climate neutrality. To this end, the European Union recently presented a policy framework to specify when hydrogen qualifies as renewable. The goal of this bachelor’s thesis is to analyze the impact of such policies on expansion planning of power and hydrogen infrastructure.

This includes:

- Understanding the European legal framework for renewable hydrogen.
- Finding and analysing model formulations for renewable hydrogen in the scientific literature.
- Coding and analysis of different formulations for renewable hydrogen in the LEGO model.

RESEARCH QUESTIONS

- How are hydrogen policy constraints modeled in the existing literature?
- What is the impact of different hydrogen policy constraints on expansion planning decisions?

SCOPE & METHODS

- Literature review on existing methods/models
- Modelling in GAMS
- Analysis of the results
- Illustration of the results

ORGANIZATION

- Start: August 2023
- Support from the motivated team at the IEE
- Close cooperation with supervisor
- Modern offices available at the institute
- Work at the institute & home-office (partially)
- English

Contact

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