Karlsruher Institut für Technologie

Deutsch-Französisches Institut für Umweltforschung

Institut für Industriebetriebslehre und Industrielle Produktion
Lehrstuhl für Energiewirtschaft

Bachelor/Master Thesis

Social acceptance and willingness to pay for greenhouse gas removal technologies

Background

Despite ambitious goals of many countries to reach climate neutrality over the coming years and limit global warming to 1.5°C, mitigation of greenhouse gases remains slow. Current IPCC forecasts therefore assume that it is necessary to remove large amounts of carbon dioxide and store it permanently in addition to mitigation strategies. Negative emissions technologies allow such a removal with a variety of methods that range from natural approaches (e.g., afforestation) to technologically advances options (e.g., direct air capture). In order to utilize negative emissions technologies on a large scale in the future, it is necessary that the required technologies are accepted by the public. However, the scope of this social acceptance for different technologies as well as the ways in which the use of removal technologies can be communicated effectively is largely unclear.

Objectives of the thesis

The goal of this thesis is to empirically examine the social acceptance of negative emissions technologies. Specifically, by employing survey methodologies or online experiments, the thesis will examine which benefits and risks individuals perceive regarding different technology options and how these can be effectively communicated in order to strengthen public support. In the scientific literature, the communication of technologies from a particular perspective is referred to as framing and it is necessary to empirically test different frames regarding their effectiveness. The effectiveness of a particular frame can also vary across different groups of the population, for example depending on these groups' individual motivations and attitudes. In a first step, you will analyze the existing literature in order to identify potentially relevant motivations and technology frames. Next, you will develop an empirical study and collect data, which you will subsequently analyze through statistical modeling. Lastly, you will derive conclusions from these insights that can inform environmental policy making.

Requirements

- Interest in social science topics (especially technology acceptance and user behavior) and empirical research (e.g., surveys)
- Willingness to work independently
- Ideally existing skills in statistical data analysis (e.g., R, SPSS)

Start date/duration/language

Thesis can start immediately / 3-6 months / German or English

Contact person

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