



**University of Cologne**

**Department of Economics – Chair in Economics and Energy Economics**

Dr. Lukas Schmidt

Seminar in Energy, Resource and Environmental Economics

Winter Term 2021/22

## **Assessing the Design of Climate Policies**

Europe strives to become climate-neutral by 2050; Germany wants to achieve this goal already five years earlier. For reaching climate-neutrality, a fundamental transformation of energy supply and use is necessary. Allocating the necessary investments efficiently represents a major coordination task. A sound regulatory framework is essential for a successful transition to a sustainable energy supply.

Beyond the energy market design itself, policymakers implement regulations to reach climate targets. Important policies comprise subsidies for renewable energies, phasing out coal power plants as well as pricing emissions either via carbon taxes or emissions trading schemes (ETS).

Current topics in the design of climate policies include but are not limited to:

- Fit-for-55/European Green Deal:  
Just recently, the European Commission (EC) proposed a package of measures that is aimed at a 55% emissions reduction by 2030 compared to the 1990 level. Among other issues (see below), the proposed policies include a tightening of the existing EU ETS and the implementation of a new carbon certificate system for the transport and buildings sectors.
- Carbon leakage and Countermeasures  
ProThe implementation of climate policies imposes direct or indirect costs on carbon intensive businesses. Since these are free to choose their production location, they might decide to relocate to a state with none or less restrictive climate policies. This phenomenon is called *carbon leakage* since emissions in the regulated economic zone decrease but only because they are emitted somewhere else. One proposed counter measure which the EC also considers in the *Fit-for-55* proposal is a *carbon border adjustment mechanism* (CBAM) which imposes tariffs on imported goods and rebates on exports according to their carbon intensity.
- International climate cooperation (Climate Clubs, reciprocal CO<sub>2</sub>-prices):  
If an individual agent takes climate action, they bear the full costs but the global community benefits which incentivizes free riding. Hence, cooperation between stakeholders is needed to reach the socially optimal state. William Nordhaus (Laureate of the Nobel Prize in Economics

2018) proposed so called “climate clubs” that sanction non-participation to reach climate reduction targets on the global scale.

- Allocation of/compensation for the costs of climate policy:

Carbon pricing eventually involves higher prices for emissions intensive goods and services, which burdens consumers. It is highly relevant how costs for carbon are levied and how the return is spent. In this context, schemes were proposed to allocate fiscal revenues from emissions trading/carbon taxes back to households.

In this seminar, students will review the current state of literature on assessing the design of climate policies. Beyond reviewing the design framework qualitatively, a focus of the course is set on quantitative evaluation. While existing regulations can be assessed with econometric analyses, theoretical additions or changes in regulations requires models of the considered system. To this end, economists mostly use general or partial equilibrium models, which rely on different methodological approaches (e.g., simulation or optimization).

### Schedule

12.10.2021 09:00-11:00	Introductory meeting - organizational Issues - seminar introduction and overview of topic
19.10.2021 09:00-11:00	Guest Lecture: Christian Ahtelik, Guidehouse
26.10.2021 09:00-11:00	Focus on Methodologies to evaluate the regulatory framework. This session will contain the following aspects: - Methodological approaches to evaluate the regulatory framework of climate policy - Selection of methods
09.11.2021 09:00-11:00	Presentation and writing skills seminar
Group meetings (with mentors) Main idea and goal, structuring of presentation etc.	
12.11.2021	<b>DEADLINE to register or withdraw from the examination via KLIPS</b>
13.12.2021	<b>DEADLINE: Submission of presentation slides</b>
14.12.2021 09:00-12:00	Group Presentations Group A, Group B and Group C <b>Mandatory</b>
15.12.2021 09:00-12:00	Group Presentations Group D, Group E and Group F <b>Mandatory</b>
20.03.2022	<b>DEADLINE Submission of Final Seminar Paper</b> <b>Mandatory</b>

### Application

A maximum number of applicants of 30 can be admitted to the course, priority will be given to students of the WiSo Faculty. Please register on KLIPS for the seminar during the first registration period. IMES Students please register for the course by sending an email to [tom.brinker@ewi.uni-koeln.de](mailto:tom.brinker@ewi.uni-koeln.de).

After you receive a seat in the seminar, please make sure to register for the examination on KLIPS as well (use the Lehrveranstaltungsprüfung “Seminar in Energy, Resources and Environmental Economics”). Only those, who have a seat in the seminar can register for the examination! Thus, **if you decide to not take the seminar, please make sure to deregister from the course** so your peers are able to enroll for the remaining spots before the exam registration phase ends. IMES students can register

for examination by sending an email to Ms. Soberon and include Mr. Brinker in cc. (**Deadline for examination registration: 12.11.2021**)

Once you have registered for the examination, the registration is binding and **students who do not give a presentation or do not hand in a seminar paper in time will receive a failing grade**. Thus, please make sure that you can attend the mandatory sessions (14.12 & 15.12) before registering for the course.

### **Examination**

The final grade consists of an oral and a written examination. To pass the examination students are required to participate in both parts of the examination (Parts A and B).

**Examination part A (50%):** presentation of overall topic at seminar meeting (8-10 minutes per student – individual grade)

**Examination part B (50%):** individual seminar paper on a specific research topic (max. 5.000 words)

#### Examination part A (November – December):

The aim of the oral part of the examination is to provide and receive a general overview of the different facets within climate policy. Therefore, students will be allocated to general topics within the scope of the seminar and distributed to groups consisting of 4-5 students. (The topic and group allocation are at the sole discretion of the Chair in Energy Economics.) In December, the topic must be presented to the other peers and discussed with industry experts. Each presentation should provide a general overview of the topic, analyze the current state of literature (introduce relevant literature and the methodology used in those sources) point out interesting research questions and critically discuss how the topic might evolve in the future. Students need to structure their topic, distribute the individual parts of their group presentation among themselves and deliver coherent and consistent presentation slides. In case of questions, mentors will be able to assist the group. Each student is required to present 8-10 minutes. Grading will be done based on individual performance.

#### Examination part B (January – March):

The aim of the written part of the examination is for students to become an expert in one specific topic within climate policy. The individual seminar topics will be distributed after the group presentations in January. (The topic allocation is at the sole discretion of the Chair in Energy Economics.) The seminar topic allocated to a student will be from another area than the presentation topic of the respective student, allowing students to work on two different aspects within climate policy. The written paper should be around 5.000 words (+-10%). Students need to narrow down the scope of their paper by choosing a research question, provide an overview of the literature, pick a methodology and critically analyze their research question in depth. Each student will have a mentor in case any questions arise when composing the seminar paper.

### **General Requirements**

The seminar is designed for students to prepare for a Master thesis in energy economics. The seminar participants are expected to gain in-depth insights into their topic independently. Thus, **we expect students to already have a solid foundation in energy economics** (i.e., have taken other courses in the energy specialization) before taking the seminar.

While the seminar topics will be distributed by the chair, students are expected to determine the focus of their presentations and seminar paper themselves. The emphasis within the own topic as well as the draft structure of the paper shall be discussed with the mentor at an early stage. Furthermore,

students should deal critically with the contributions of other participants. Active participation in the seminar discussion is expected. **Attendance during all presentation days is therefore required.**

We provide a guideline for the preparation of seminar papers. This includes all design requirements.

### **Further Information**

<b>Allocated Modules</b>	<ul style="list-style-type: none"><li>▪ Specialization in Energy Economics – Seminar in Energy, Resource and Environmental Economics</li><li>▪ Remaining seats can be allocated to students in the IMES program.</li></ul>
<b>Credits</b>	6
<b>Language</b>	English
<b>Examiner</b>	Dr. Lukas Schmidt, <a href="mailto:lukas.schmidt@ewi.uni-koeln.de">lukas.schmidt@ewi.uni-koeln.de</a>
<b>Cooperation Partners</b>	Christian Ahtelik, Guidehouse
<b>Organization</b>	Tom Brinker, <a href="mailto:tom.brinker@ewi.uni-koeln.de">tom.brinker@ewi.uni-koeln.de</a>