

Energy Market Design

Prof. Dr. Oliver Ruhnau
University of Cologne
oliver.ruhnau@uni-koeln.de

Course overview

Energy market design aims at achieving environmental, economic, and security-of-supply goals. The course will start with a short overview of how future energy systems that fulfill these objectives may look like. On this basis, we will discuss market mechanisms and policy interventions that may help such a system materialize. Put differently, after briefly discussing the destination, this course focuses on organizing the travel.

This course addresses several topics which are currently discussed in academia and practice. After an introduction to future energy systems, we focus on the following topics, following a recent [discussion document](#) by the German government:

- 1) Investment frameworks for renewable energy sources
- 2) Investment frameworks for controllable capacities
- 3) Locational signals
- 4) Leveraging demand-side flexibility potentials

For each topic, this course combines input from the lecturer and PhD researchers with student group presentations and in-class discussions. The focus will be on the most recent research publications related to each topic. In the end, each student should submit a research proposal. Each student group is required to provide feedback on one other group's presentation and each student is required to provide feedback on one other student's report. As such, this course is as much about interesting content as it is about learning how to do research and provide constructive feedback. In the best case, research proposals may be further developed and used for a master thesis.

A more detailed overview of topics and readings is provided below.

Course organization

Class hours & venues

- Thursdays, 09:00 – 12:00 (see schedule for the irregular dates)
- 827 Seminarraum (KFR1), Alte Wagenfabrik, Vogelsanger Str. 321a

Office hours are offered on request.

Please **register for this course** via KLIPS (1st and 2nd registration period).

Prior knowledge from the course “Energy Markets and Regulation” or another course from the specialization “Energy and Climate Change” is recommended but not required.

It is recommended to take this course **when you start thinking about your master thesis.**

This course features a **combined examination:**

- Group work (2–3 students per group)
 - o Presentation as a group, followed by a discussion (20% of points)
 - o Feedback on another group’s presentation (10% of points)
- Individual work
 - o Draft research proposal (50% of points)
 - o Feedback on another participant’s proposal (10% of points)
 - o Final research proposal (10% of points)

The group presentation should be 20–30 minutes long (10 minutes per student), followed by 20–30 minutes for feedback and discussion. The presentations will be integrated in the sessions 4 to 7 (see dates below).

The research proposal should be about 1,500 words long, and the written feedback on another’s proposal should include about 300 words. Students are expected to revise their proposals based on feedback from each other and from the lecturer.

Further information and course material will be distributed via the **ILIAS platform.**

For **questions**, please do not hesitate to reach out to:

- Content: Maximilian Walde (walde_maximilian@wiso.uni-koeln.de)
- Administration: Monika Räthe (monika.raethe@uni-koeln.de)

Course schedule

The following schedule is tentative. Potential changes would be communicated via ILIAS.

Date	Type	Event
10 Apr 25	Session 1	Introduction & current energy market trends
24 Apr 25	Session 2	Topic session
By 1 May 25, 23:59	Deadline	Register for examination
08 May 25	Session 3	Skill session & topic allocation
By 15 May 25, 23:59	Deadline	Withdraw from examination
05 Jun 25	Session 4	Student presentations 1
12 Jun 25	Session 5	Student presentations 2
26 Jun 25	Session 6	Student presentations 3
03 Jul 25	Session 7	Student presentations 4 & Wrap-Up
10 Jul 25	Buffer	
By 24 Jul 25, 23:59	Deadline	Draft proposal submission
By 07 Aug 25, 23:59	Deadline	Feedback submission
By 21 Aug 25, 23:59	Deadline	Final proposal submission