



Universität zu Köln

University of Cologne

Department of Economics – Chair in Economics, Energy and Sustainability

AM Projektkurs Volkswirtschaftslehre

Summer Term 2023

Project: Energy Transition

The energy sector is undergoing a significant transformation from a fossil fuel-based system to one seeing increased penetration of "renewable" energy sources. The energy transition is being driven by the global climate challenge as well as energy economic challenges.

From an energy economic perspective, a transition is necessary to address the increasing volatility of energy prices as well as the progressing depletion of fossil fuel reserves. Renewable resources such as wind and solar energy are deemed to be increasingly competitive and more sustainable in comparison to fossil fuels. In addition, advances in the development of energy storage solutions and expansions in the grid infrastructure can provide energy for regions that are considered energy poor.

From an environmental and ecological perspective, a transition to renewable energy sources is necessary to reduce greenhouse gas emissions, which have a negative impact on the environment and cause global warming. Renewable energy sources emit fewer greenhouse gas emissions compared to fossil fuels during electricity generation. In addition, renewable energy sources are less often associated with waste products, e.g., nuclear waste.

As necessary as the energy transition might be, there are caveats to the process and an array of issues that have to be addressed. Renewable energy sources are largely weather-dependent. To date, peak demand on days with little sunshine and little wind cannot be covered by renewable energy sources alone. Additionally, renewable energy sources are concentrated in certain regions. It remains to be seen if renewable energy sources can be effectively and/or efficiently distributed. This hinges not only on public acceptance but also on the question of where resources can be deployed most efficiently. Providing energy to regions with low renewable energy potential will be difficult.

This course aims to address these issues both from an energy and ecological economics perspective. For that, the theoretical groundwork will be laid in the first part of the course. In the latter part of the course, students will be assigned topics to apply the previously acquired knowledge.

Schedule

13.04.2023 10:00-13:30	118 - Reserve 3.03	Introductory meeting Organizational Issues & Topic Introduction
26.04.2023 10:00-13:30	118 - S268	Lecture
27.04.2023 10:00-13:30	118 - Reserve 3.03	Lecture
03.05.2023 10:00-13:30	118 - S268	Lecture
04.05.2023 10:00-13:30	118 - Reserve 3.03	Lecture
tba	<i>Klips</i>	Deadline to Register for the Examination via KLIPS
07.06.2023 10:00-13:30	118 - S268	tba
tba	tba	Written Exam Exam Part A..... Mandatory
13.06.2023 10:00	<i>ILIAS</i>	Deadline for Presentation Slide Upload to ILIAS Exam Part B..... Mandatory
14.06.2023 10:00-13:30	118 - S268	Project Presentations..... Mandatory
15.06.2023 10:00-13:30	118 - Reserve 3.03	Project Presentations..... Mandatory
16.07.2023 23:59	<i>ILIAS</i>	Deadline Submission of Final Seminar Paper to ILIAS Exam Part C..... Mandatory

Examination

The final grade consists of three written examination parts. The final grade for this course will be a weighted average of (the quality of):

- A) written exam (35% - 60 min)
- B) presentation slides (30% - max 8 slides per student; 10 min presentation time per student)
- C) seminar paper (35% - 1500 words +-10%)

The course can be passed without passing each part of the examination individually. In order to pass the course, 50% of the total possible score has to be reached.

Examination part A: written exam:

The lecture covers the basic methods and concepts of ecological and energy economics. The written exam is the first part of the examination. Students will take part in a 60 minute written exam. It is designed to evaluate the students' internalization of the lecture content.

Examination part B: presentation slides:

During the semester students are asked to work in groups on projects. Assigning groups and topics to students is solely up to the chair. Students will give group presentations on the project results. Each group member has to take an equal part (10 min) of the presentation and has to prepare an individual slide deck (max 8 slides) for the presentation part of the student. Students are expected to distribute presentations parts independently. The second examination part is the slide deck. Students will receive individual grades. A discussion will follow the group presentation. Fruitful participation in presentation and discussion can have a positive influence on the project grade.

Examination part C: project paper:

The written paper should be 1500 words (+-10%). Students hand in individual papers. The content is supposed to critically reflect the content of the course. Students should conclude on the project and outline possible fields for further research.

Further Information

Allocated Module	Bachelor of Science Volkswirtschaftslehre: Basis- und Aufbaubereich Volkswirtschaftslehre - AM Projektkurs Volkswirtschaftslehre
Credits	6
Language	English
Examiner	Cordelia Frings (cordelia.frings@uni-koeln.de)
Organisation	Frederike Fitza (frederike.fitza@uni-koeln.de)