

Modultitel: Economics of Technological Diffusion

Kurzbezeichnung: ETD

Inhalt:

For various reasons (such as emerging new technologies, problems related to resource supply and use, changes in consumer needs and habits, climate change, etc.) it is apparent that we are in a time when significant technical change will happen. Thus, the challenges faced by engineers, economists, and natural scientists involved in business management, plant operation or administration will rise to understand, adequately describe and - subject to certain assumptions regarding the framework conditions - to accurately predict the diffusion dynamics and market potentials of new technologies and products. To this end, a significant basic knowledge in the fields of technology assessment, market analysis, cost reduction potentials, and the theories of innovation diffusion is needed.

In the underlying course (comprising lecture and exercise unit) a basic knowledge in economic theory and methods related to the study of the diffusion of new technologies will be acquired and applied to innovative energy technologies. In this way the student receives a useful overview on the subject, which in many occupational areas (e.g., product development, market analysis, marketing, technology assessment, and policy-making) is of increasing relevance in everyday business.

Lernziele:

- To understand why diffusion may take a long time and often exhibits an S-shaped diffusion curve;
- To know what is meant by the term “diffusion of (technological) innovation” and to understand the difference between the terms “adoption” and “diffusion”;
- To be able to understand diffusion research and phenomena from different perspectives;
- To learn about economic modeling of technological adoption and diffusion processes;
- To understand how competing technologies influence each other’s diffusion processes;
- To better understand energy/climate policy-making based on considerations of optimal speed of technological diffusion;
- To learn about empirical research topics and approaches (through selected literature).

Voraussetzungen: Basic knowledge in Microeconomics

Unterrichtssprache: English

Benotung: Successful written exam (60 min.)