

Course syllabus

Energimarknader Energy Markets

MVKN36, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED M

Date of Decision: 2023-04-11

General Information

Main field: Technology.

Elective Compulsory for: I3

Elective for: E4-em, F4, M4-en, W4-es, W4-et

Language of instruction: The course will be given in Swedish

Aim

The study course is intended to give knowledge in the energy markets structure, regulations and functions for electricity, heating, gas and fuels, related to the development of energy demand.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to describe various aspects of energy markets' structure, regulations and functions
- be able to relate contemporary development of energy markets to the historic development of society
- be able to formulate a reasonably coherent personal description of important problems and concepts related to energy markets, for example the current high electricity prices
- be able to relate/compare the Nordic with the global energy market

Competences and skills

For a passing grade the student must

- be able to independently carry out a investment calculations and be able to defend chosen solutions
- be able to critically examine technoeconomic/academic reports on energy supply systems
- be able to explain the functioning of the energy markets

Judgement and approach

For a passing grade the student must

- be able to actively participate in discussions on technoeconomics, i.e., what investments are expected to be carried out
- be able to independently carry out analyses and arguments for relevant system solutions focusing on investments in new power production

Contents

- The structure, rules and function of the energy markets for electricity, heat and fuel. Analyses of financial and environmental aspects.
- Capacity adaptation and system security.
- Development in the electricity, district heating and natural gas markets.
- The Electricity Act and the Natural Gas Act.
- Regulation and supervision of natural monopolies for electricity and gas networks.
- Energy prices - tariffs, charges and taxes (Swedish and European perspective)
- The electricity markets' system services
- Market of district heating and cooling
- Markets for fuels.
- Future development conditions in energy markets.
- Differences between the Nordic and global energy markets
- EU Emissions Trading System (EU ETS)

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: The examination takes place both individually and based on group work. The course consists of the following compulsory elements: * 3 test (individual) * 4 seminars (preparation tasks and active participation in group discussions/presentations) * 2 exercises (oral presentation and written reports in group) Passed exercises give a grade of three. For higher grades, an individual written exam is required.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Assumed prior knowledge: Minimum 90 ects. Course in sustainable development, for example MVKF01 Energy and the Environment in Sustainable Development or equivalent.

The number of participants is limited to: No

The course overlaps following course/s: MVKN35

Reading list

- The study course literature is continuously updated and is normally without charge accessible for the students from the Internet or the homepage (Canvas) of the course.

Contact and other information

Course coordinator: Martin Andersson, martin.andersson@energy.lth.se

Examinator: Martin Andersson, martin.andersson@energy.lth.se

Course coordinator: Thommie Nilsson, thommie.nilsson@energy.lth.se

Course homepage: <https://www.energy.lth.se/english/education/>

Further information: The course is based on lectures, seminars, studies, reports and analysis as group exercises, and tests on compulsory readings with subsequent review and correction. Participation at the course introduction is mandatory, to ensure that all students are included in the construction of mandatory student groups.