



# AK2207 Energy Systems in Society 7.5 credits

## Energisystem i samhället

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for AK2207 valid from Autumn 2019

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Built Environment

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

After the course the student will be able to:

- give an account of how energy systems in Sweden and in the world have developed until today, with focus on actors, institutions and politics.
- define, explain and use the theoretical concepts presented in the course, e.g. socio-technical system, innovation system and more.
- formulate a social scientific research question within the field of energy, conduct an investigation, search materials in library databases and write an essay where research question and investigation relate to each other in a fruitful way.
- provide constructive feedback on other's texts.

## Course contents

A starting point for this course is the notion that energy systems in society can only be understood if they are regarded as socio-technical systems which, in addition to the technical components also comprise organizations that build, run and maintain them, and institutional framework consisting of formal and informal regulations for what different actors are allowed to do. These regulations in turn affect ownership structures and organizational forms.

The socio-technical shaping of energy systems differs significantly between different countries. In the U.S. for example, energy systems have often been controlled by private companies, whereas municipal and state-owned companies played a prominent role in many European countries. It also differs between different energy systems within a country, and also changes over time. In many countries a so-called deregulation of important energy systems has taken place during the last two decades.

The aim of this course is to teach students how to analyze energy systems as being socio-technical systems, how they have been established, developed and changed in the past and how they may change in the future. The Swedish innovation system within the energy field will be analyzed in particular, and the political and institutional conditions which have created this. Also the co-operation between energy systems, when it comes to competition as well as collaboration, will be analyzed.

Today several energy systems have a trans-national character, and a major emphasis will be placed on the interweaving and coordination taking place across national borders. Moreover geopolitical consequences of transnational energy systems will be studied, e.g. the conflicts regarding Europe's gas supplies and its dependence on Russian (former Soviet) gas supplies.

An additional aim is to analyze energy system at a local level, not the least how energy usage, especially in households, has changed over time.

## Disposition

The course consists of lectures and seminars. It also includes text reflections and an essay.

## Specific prerequisites

Prerequisites: MJ1145 Energisystem

## Course literature

Anges vid kursstarten

## Examination

- INL1 - Assignment, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Assignment, 3.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Essay (INL1) and Exam (TEN1)

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.