**pre315 - Energy Systems & Society**

<table>
<thead>
<tr>
<th>Module label</th>
<th>Energy Systems &amp; Society</th>
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<tbody>
<tr>
<td>Module code</td>
<td>pre315</td>
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<tr>
<td>Credit points</td>
<td>4.0 KP</td>
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<tr>
<td>Workload</td>
<td>120 h</td>
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<tr>
<td>Used in course of study</td>
<td>Master’s Programme European Master in Renewable Energy (EUREC) &gt; Mastermodule</td>
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<td>Contact person</td>
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**Module responsibility**
- Carsten Agert
- Detlev Heinemann

**Module counseling**
- Michael Gelba
- Simone Malz

**Entry requirements**
- After the completion of this module the students will
  - have a critical understanding of political decision making processes, lobby groups and administrative hurdles in realisation of energy policy
  - have a good understanding of factors other than technical influencing future energy scenarios depending on regional and national conditions
  - have a good understanding of the structure of the global energy system
  - be able to critically interpret energy statistics and to identify different stages of energy conversion
  - be familiar with all available energy resources and their future role in the global energy system
  - be familiar with the instrument of energy scenarios and able to interpret their results
  - be able to critically follow scientific discussions in the physical background and impacts of global climate change
  - understand basic economic concepts
  - understand the organization of a market economy
  - know the relevance of competition and monopoly
  - understand the role of regulation for energy markets
  - be able to undertake a desk-top research on a complex topic
  - be able to give a presentation on an individual country (or region), focusing on renewable energy
  - know about several other countries’ and regions’ situation
  - to perform team research
  - be able to present in front of an audience and to moderate a discussion

**Skills to be acquired in this module**
- basic terminology on energy units
- definition and discussion of various forms of energy
- overview of energy resources and reserves
- the global energy situation (energy consumption, energy balances, noncommercial uses of energy)
- energy scenarios (methodologies, main results for possible energy futures)
- techno-economic methods and aspects of energy use (energy and exergy analyses, life cycle analysis, external costs, etc.
- human-made greenhouse effect

**Module contents**
- Energy Systems
  - basic terminology on energy units
  - definition and discussion of various forms of energy
  - overview of energy resources and reserves
  - the global energy situation (energy consumption, energy balances, noncommercial uses of energy)
  - energy scenarios (methodologies, main results for possible energy futures)
  - techno-economic methods and aspects of energy use (energy and exergy analyses, life cycle analysis, external costs, etc.
- Energy Economics
  - the ten principles of economics
  - the role of costs for decision making
  - markets, competition, monopoly
  - regulation and environmental policy
  - investment decision, finance and risk management

**Country Report**
- analysis and presentation of an individual country or region
- geographic, climatic, historic, economic and political situation
- focus on (renewable) energy matters
- team research and presentation, followed by a discussion (moderated by team)

**Reader’s advisory**
- Blok, Kornelis, 2007: Introduction to Energy Analysis, Techne Press, Amsterdam
World Energy Assessment Overview: 2004 Update: Energy and the Challenge of Sustainability; 
UNDP (Ed.); 

Country Reports from previous years

Links
Language of instruction
Duration (semesters)
Module frequency
Module capacity
Module level
Modulart
Lern-/Lehrform / Type of program
Vorkenntnisse / Previous knowledge
Examination
Time of examination
Type of examination
Final exam of module
Energy Systems: At the end of lecture period (end of January)
Energy Economics: After end of lectures (mid-December)
Country report: During Semester
Energy Systems (40%): Written exam (1.5 hours)
Energy Economics (25%): Written exam (0.5 hours)
Country report (35%): Written report 15 – 20 pages & Presentation (20 min plus 10 min discussion)

Course type
Seminar
SWS
0 h
Frequency
Workload attendance