pre353 - Photovoltaics: Economics, Policy and Environment

Module label: Photovoltaics: Economics, Policy and Environment
Module code: pre353
Credit points: 5.0 KP
Workload: 150 h

Used in course of study:
- Master's Programme European Master in Renewable Energy (EUREC) > Mastermodule

Contact person:

Skills to be acquired in this module:
- Critically analyse the international policies relating to photovoltaics and other energy technologies focusing on the strategic, environmental and economic implications of these policies
- Perform an economic and/or environmental analysis of a photovoltaic system.

Module contents:
1. Economic Analysis
- Economic theory - net present value, effect of interest rates, definition of capital and recurrent costs
- Production economics - definition of production costs, economies of scale, projected manufacturing costs
- Subsidies and tariff issues - effect of electricity supply costs on system viability
- Financing mechanisms - review of international financing mechanisms for purchase and operation of systems
2. Policy Issues
- Market development and projections
- Review and appraisal of government policies and market development schemes
- Security of supply
- Climate change issues
- Energy for development - role of photovoltaics
3. Environmental Impact Assessment
- Process definition for module production
- Hazard assessment
- EC environmental directives
- Embodied energy calculations
- Energy payback times and ratios
- Calculation of associated CO2 and other emissions

Reader's advisory:
- Journal of "Progress in Photovoltaics"
- Proceedings of European Photovoltaic Solar Energy Conferences
- Proceedings of IEEE Photovoltaic Specialist Conferences
- IEEEXplore database
- Environmental data sources
- Government literature (including European Commission and international) on renewable energy promotion
- IEA Photovoltaic Power Systems Programme reports

Links:
- Language of instruction: English
- Duration (semesters): 1 Semester
- Module frequency: jährlich
- Module capacity: unlimited
- Modullevel: MM (Mastermodul)
- Modulart: Pflicht
- Lern-/Lehrform / Type of program: Lectures, seminars

Examination:
- Final exam of module: At the end of the semester
- Type of examination: Written report (essay, approximately 3,000 words) and Presentation (10 minutes)

Course type: Seminar

SWS
- Frequency: 0 h
- Workload attendance: 0 h