

HITEC Theme/Methods Day

Title: Modeling of Energy Storage Applications
Date: June 12, 2014
Time: 9:30 – 17:00 hrs
afterwards *get together* with snacks and drinks
Location: E.ON Energy Research Center, RWTH Aachen University
Mathieustraße 10, 52074 Aachen

The energy transformation towards decarbonization and the phase out of nuclear power implies the heavily increase use of renewable energy sources. With few exceptions these are characterized by high volatility and non-controllability, jeopardizing security of supply by stretching demand and supply imbalances. Apart from grid expansion and demand side management, centralized and decentralized energy storage options are paramount for the future development of the energy system. The energy storage options have different potentials and technical characteristics with respect to the ramp up times, capacity and lifetime and different economic merits due to differences in investment costs, operation and maintenance costs, and the ability to serve the needs of the various energy markets.

You will learn about:

Alternative modeling approaches for energy storage technologies and their role in the energy transformation towards an increased use (volatile) renewable energy sources. These approaches address uncertainty in the decision process by means of stochastic optimization and risk-adjusted discounting.

Contents:

- the relevance of energy storage in the energy transformation towards sustainability
- alternative modeling approaches for investment and operation in energy storage and portfolios
- the role of uncertainty, discounting and long-term time horizons
- from net present value to real option modeling

Who should attend:

HITEC Ph.D.-fellows;
Postgraduate-, Ph.D.- and postdoctoral fellows from the fields of energy and climate research

HITEC Days

HITEC Days are an inherent part of the graduate school Helmholtz Interdisciplinary Doctoral Training in Energy and Climate Research (HITEC). They devote a whole day to a method or a scientific topic with lectures and discussions. The methodological days serve to encourage scientific interdisciplinarity and will enable the PhD students to extend their range of methods with respect to their own scientific work. HITEC Days always end with a 'Get together', some snacks and drinks. HITEC Days are open for HITEC Ph.D. students and other interested young scientists.