

# Symposium Energy Meets Economy: Dynamics and Statistics of Future Energy Systems (SYEE)

jointly organized by  
the Physics of Socio-economic Systems Division (SOE),  
the Dynamics and Statistical Physics Division (DY), and  
the Working Group "Young DPG" (AGjDPG)

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Current and future changes to our energy system (the Energiewende) imply hard conceptual questions about generation of energy, its fair and economic distribution - and not last our everyday behavior. For instance, the ongoing transition of power grids from containing essentially few large power plants to grids with smaller, more decentralized and less reliable sources based on renewable energy yield a trade-off between economic efficiency, grid stability and risk to failures. In addition, short and longer term trading of energy on both supply and demand sides further increase the complexity of the resulting dynamical system comprised of the energy grid and accompanying economic rules and total energy usage is globally limited. This symposium provides a perspective of different aspects of a modern energy system as a whole, on the physical and technical sides, but also on its economy and our behavior. Suggestions for solutions for coping with fluctuation and decentralization, control, and risk are complemented with a discussion on fields where physics and quantitative mechanistic insights may contribute to shape the future of our energy system.

## Overview of Invited Talks and Sessions

(Lecture room: HSZ 02)

### Invited Talks

SYEE 1.1	Wed	15:00–15:30	HSZ 02	<b>Smart Grids - From incentives to coupled markets</b> — ●RUDOLF SOL-LACHER
SYEE 1.2	Wed	15:30–16:00	HSZ 02	<b>Energy and the economy</b> — ●REINER KÜMMEL
SYEE 1.3	Wed	16:00–16:30	HSZ 02	<b>Planetary constraints to energy supply and the economy</b> — ●OLIVER RICHTERS
SYEE 1.4	Wed	16:45–17:15	HSZ 02	<b>Identifying critical infrastructures in complex supply networks</b> — ●DIRK WITTHAUT
SYEE 1.5	Wed	17:15–17:45	HSZ 02	<b>Short time fluctuations of renewable energies</b> — ●JOACHIM PEINKE, M. REZA RAHIMI TABAR, PATRICK MILAN, MATTHIAS WÄCHTER

### Sessions

SYEE 1.1–1.5	Wed	15:00–17:45	HSZ 02	<b>Symposium Energy Meets Economy: Dynamics and Statistics of Future Energy Systems</b>
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