



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Proposal for a Semester Thesis

“Mapping change in the power sector”

The power sector is undergoing dramatic changes worldwide. Liberalization, nuclear phase-out and policy support schemes for renewable energies and distributed generation are just some of the trends that affect utilities. Electricity wholesale prices are at a historical low and typical daily price curves do not follow traditional patterns anymore. Moreover, prices are less predictable and heavily influenced by the feed-in of electricity from renewable energy sources. These developments lead to drastic changes in the business activities of utilities. While being heavily invested in power generation from fossil fuels in the past, utilities diversify their activities in renewables, e-mobility infrastructure or storage over time in order to remain competitive.

To master the energy transition, it is important for utilities to understand the patterns and the drivers of the ongoing transition in order to align them with their current strategy. Therefore, the Group for Sustainability and Technology (SusTec) offers a Semester thesis that aims to map the development of business activities of the 30 biggest utilities worldwide over the past 15 years.

The thesis will be built on an available dataset of these business activities and comprises the following tasks (preliminary):

- Exploring the existing data, aggregating and complementing it (if necessary)
- Illustrating the data in a comprehensive and easily understandable way
- Analyzing the patterns and drivers for the changes in business activities over time by utility or by country
- Discussing the implications of the analysis for utilities in the power sector.

The Group for Sustainability and Technology (SusTec, www.sustec.ethz.ch) has undertaken various studies on developments in the power sector that address decision-makers in policy and the industry. This thesis presents an opportunity to help shape the strategies of managers in a field of large societal importance and provides the basis for an academic publication.

We are looking for an excellent student who is highly motivated and is able to work independently. Strong communication and project management skills are essential. A background in management, engineering, economics, energy science, or innovation studies is advisable. Experience in the power industry is an additional asset. The student will be an integral part of the research team and will be supervised by one PhD student and a post-doctoral researcher. The intended starting date for the thesis is March 2017 (negotiable). A workspace will be provided.

Are you interested? Please send your CV, a short letter of motivation (max. one page) and transcripts of records (with grades) to Fanny Frei (fannyfrei@ethz.ch). Applications from non-ETH students are welcome. The approximate duration of the thesis will be one semester. We look forward to receiving your application!

Zurich, February 2017