UNIVERSITÄT LEIPZIG

Faculty of Economics and Management Science
Institute for Infrastructure and Resource Management
Chair for Energy Management & Sustainability
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Call for master's thesis

Demand response potential of electricity intensive industries

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We offer the following topic in the field of energy economics and the energy transition as a master thesis. Besides academic skills, the thesis prepares well for a job in the energy field, especially in the area of flexibility options and industrial demand response. If this sounds interesting to you, please don't hesitate to contact us.

Thesis type:	Master's thesis
Language:	English
Start date:	Anytime
Working title:	Demand response potential of electricity intensive industries
Background:	Traditionally, balancing electricity supply and demand was largely done through management of supply side flexibilities. With a growing share of variable renewable electricity generation, it can be beneficial to use more flexibility options on the demand side. Especially electricity intensive industries look promising through lower costs per unit of shifted load and through a higher automation grade. For improved regulatory and business decisions in that field, an up to date analysis of the current and future demand response potential of electricity intensive industries would be helpful.

Frame:

Spatial scope:	Germany (detailed), main import/export trading partners (simplified)
Temporal scope:	2020, 2030, 2040, 2050
Industries:	Chemicals, steel, aluminum, cement, glass, paper, ...
Indicators:	Power, duration, availability, ramp up/down, costs (ICT, organisation, wear), ...

Research objectives:

1. Identify relevant industries for large scale demand response including basic specifications (capacity, utilization, locations).
2. Derive flexibility rates of existing studies and calculate the aggregated flexibility potential over the industries based on defined indicators.
3. Compare the results of 2. with a mini meta-analysis of existing studies and with other flexibility options like new electricity consumers or options on the supply side.
4. Reflect implications on "technology"-distribution (e.g., on distribution grid capacity).

Your profile:

Studies:	Economics, business, engineering, natural sciences
Skills:	Some knowledge in the field of energy economics or energy engineering, passionate about the energy transition, good MS-Office skills and B2 English language skills or higher.

Our profile:

We, the chair for energy management and engineering, are an inter-disciplinary team of energy and sustainability enthusiasts with a focus in techno-economic analysis, often supported by computer models. Most thesis topics are embedded in cutting-edge research projects. The thesis supervision is relaxed, modern and flexible.

Energiemanagement und Nachhaltigkeit

We are looking forward to your questions or direct application including your CV and complete transcript of records send to lerch@wifa.uni-leipzig.de