WORKSHOP: AGGREGATION METHODS FOR RENEWABLE INFEED PROFILES IN ENERGY SYSTEM MODELS

April 3rd 2020 starting at 09:00 am

What to expect

The development of a sustainable energy system requires a consistent evaluation of technology options in a system context. Optimizing energy system models play an important role in this process. However, to achieve manageable computation times, an integral optimization will require limited spatial and temporal disaggregation. On the other hand, appropriate representation of the infeed characteristics of renewable energy sources as well as of the usage of transmission lines and conventional generators require a sufficiently high disaggregation. The workshop seizes the occasion to discuss latest developments and ongoing research related to aggregation in the field of energy system and electricity market analysis.
We therefore invite all interested researchers, practitioners and students to join our event.

The workshop will be held as online web conference. Please contact WeatherAggReOpt@wiwinf.uni-due.de for further questions.

Hosts of the workshop:
Prof Christoph Weber, House of Energy Markets and Finance, University Duisburg-Essen
Dr. Christoph Kost, Fraunhofer Institute for Solar Energy Systems ISE
Arne Pöstges, House of Energy Markets and Finance, University Duisburg-Essen
Sven Längle, Fraunhofer Institute for Solar Energy Systems ISE

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	WELCOME
09:00	Prof Christoph Weber, HEMF, Essen
	WeatherAggReOpt
09:00	**Project overview** Prof Christoph Weber, HEMF, Essen, Germany
09:15	**Identifying key elements for adequate simplifications of investment choices – The case of wind energy expansion** Mr. Arne Pöstges, HEMF, Essen, Germany
09:45	**Impact of Spatial Aggregation on Energy System Optimization** Mr. Sven Längle, Fraunhofer ISE, Freiburg, Germany
10:15	**Stochastic renewable infeed, temporal aggregation and investment choices** Prof Christoph Weber, HEMF, Essen, Germany
10:45	Coffee Break
	TEMPORAL AGGREGATION
11:00	**Temporal reduction of input time series for energy system models using clustering algorithms** Ms. Berit Czock, EWI, Cologne, Germany
11:30	**Machine Learning and Temporal Aggregation for Robust Energy System Optimizations** Mr. Maximilian Hoffmann, Institute of Energy and Climate Research, Jülich, Germany
12:00	**Utilization of non-equidistant timesteps as reduction technique in electricity market models – an error analysis** Mr. Georgios Savvidis, IER, Stuttgart, Germany
12:30	Lunch break
	RENEWABLE DISAGGREGATION AND COMPUTATIONAL EFFICIENCY
13:30	**Methods to reduce computation times of linear optimising Energy system models** Mr. Kai von Krbek, DLR, Stuttgart
14:00	**Simulating renewable production in Brazil with reanalysis data** Mr. Alessandro Soares, PSR, Rio de Janeiro, RJ - Brasil
14:30	Coffee break
	IMPACT ANALYSIS FOR AGGREGATION APPROACHES
14:45	**Impact analysis for various levels of detail in a dispatch model** Mr. Richard Schmitz, Fraunhofer IEE, Kassel, Germany
15:15	**The strong effect of resource granularity and network bottlenecks on highly renewable electricity system models** Martha Frysztackitba, KIT, Karlsruhe
15:45	**CLOSING REMARKS / END**

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