

Venue: Brussels

Date: 18.05.2017

Focus Group: Capacity expansion in high RES worlds

Introduction:

The development of low-cost variable renewable energy (solar and wind) generates new challenges for power system modelling. A cost-efficient integration of high RES shares requires a diversified portfolio of flexibility assets (demand response, storage, and flexible generation) along with adequate transmission network reinforcements.

Hence, capacity expansion requires to jointly model investment costs and variability of RES generation at different time scales (daily, weekly, yearly), which significantly increase the size of the optimization problems.

Objective of the focus group:

- To exchange about new modelling stakes for capacity expansion with high RES shares

Key questions for discussion:

- What level of details is required to model RES generation variability?
- How to optimize flexibility portfolios?
- How to handle large-size system with reasonable computation time?

Schedule:

Input speeches

- Long-term modelling and tools to expand variable renewable power in emerging economies. Laura Gutierrez (IRENA)
- Flexibility in long term energy system models – do we understand the impact of assumptions in a high RES and high resolution model environment? Frank Meinke-Hubeny (Vito)
- Optimizing flexibility portfolio in high RES worlds. Christopher Andrey (Artelys)
- Balancing Complexity with Uncertainty in Long Term Energy System Models-Are we making our models better or just getting the wrong answer quicker? Fiac Gaffney (UCC)

Discussion about key questions

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