

DISTRIBUTED CHP PLANTS OPTIMIZED ACROSS MORE ELECTRICITY MARKETS

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Plan for PhD research

- Getting current papers published.
- Work with a help tool for the EnergyPLAN energy systems model.
 - The goal of the help tool is to provide factors for estimating the electricity system balancing needs of a given energy system in EnergyPLAN. (very early work)
 - It is expected that the work will also result in a paper.
- Make the PhD dissertation.
- The PhD is expected to end the 1st of August 2015.



Results or potential results

- Two journal papers currently in review process:
 - “Future power market and sustainable energy solutions – The treatment of uncertainties in the daily operation of combined heat and power plants”, submitted to *Applied Energy*.
 - “Small-scale combined heat and power as a balancing reserve for wind – The case of participation in the German secondary control reserve”, submitted to *International Journal of Sustainable Energy Planning and Management*.



Collaboration with partners in 4DH

- Ongoing collaboration with EMD International A/S.
- 6 weeks stay at Ringkøbing-Skjern Municipality in September to October 2014.
 - Provided suggestions and knowledge to their work on a new energy strategy.
 - Involved with providing ideas and suggestions for local district heating plants for improvements with focus on electric heat pumps.
- Possible collaboration with Søren Djørup, AAU.



Idea for an abstract for the conference in 2015

- Paper based on work with EnergyPLAN help tool.
- Alternatively (if time permits): Capacity markets/payments with Søren Djørup, AAU.

