IBPSA Project 1 – WP 3.2 Application

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Objective of WP 3.2

To demonstrate through application case studies the use of Modelica for building and district energy systems design and operation

What has been done so far?

A total of 7 free presentations were given in previous Expert Meetings regarding application case studies of Modelica

- Modeling and simulation of multi-energy-grid technology (Lucerne University)
- Living Roadmap Jülich (RWTH Aachen)
- Modeling of TERMONET (University of Southern Denmark)
- Input data uncertainty in district energy simulations (Leuven University)
- Bidirectional DHC systems (ETH Zürich / EMPA)
- Aggregating neighborhood space heating demand (Leuven University)
- Three case studies of district energy systems in Norway (SINTEF)

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Next steps

1) Develop a ***case study template*** document to facilitate a unified description of the application case studies

   - Short description of case study
   - Objective of simulation (system design, operation analysis, optimization, economic evaluation etc..)
   - Used Modelica libraries and simulation tools
   - Any missing model had/has to be developed? -> connection with WP1.1 and 1.2
   - Benefits and barriers of using Modelica for such case study

2) Circulate the template among TASK 3 participants and see how many case studies we can gather

3) If any other IBPSA Project 1 participant is working on Modelica-based application case studies is more than welcome to join and fill in the template!

I will send an email to the IBPSA Project 1 mailing list with more details