



Institut de Recerca en Energia de Catalunya
Catalonia Institute for Energy Research



Experimental facilities for assessing energy flexibility in buildings

Public seminar Annex 67 - Energy Flexible Buildings Annex 67
4th April 2019, Aalborg University
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Motivation

- Development of Energy Flexibility strategies (usually developed by simulation) need to be validated under dynamic working conditions
- Laboratories for Energy Flexibility offers to researchers and industry the possibility to test the performance of proposed systems in controlled environments prior to their implementation in real buildings and/or field tests.



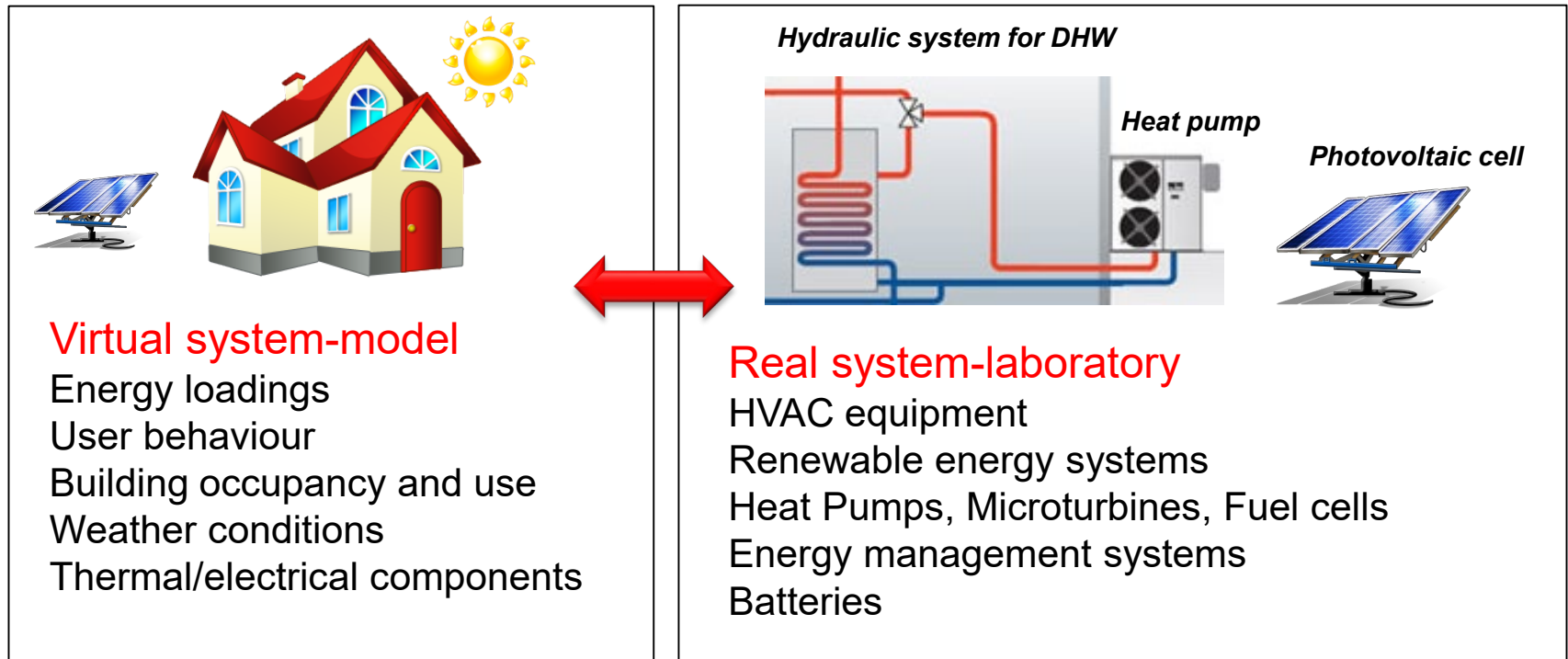
Laboratory facilities used to test energy flexibility in buildings



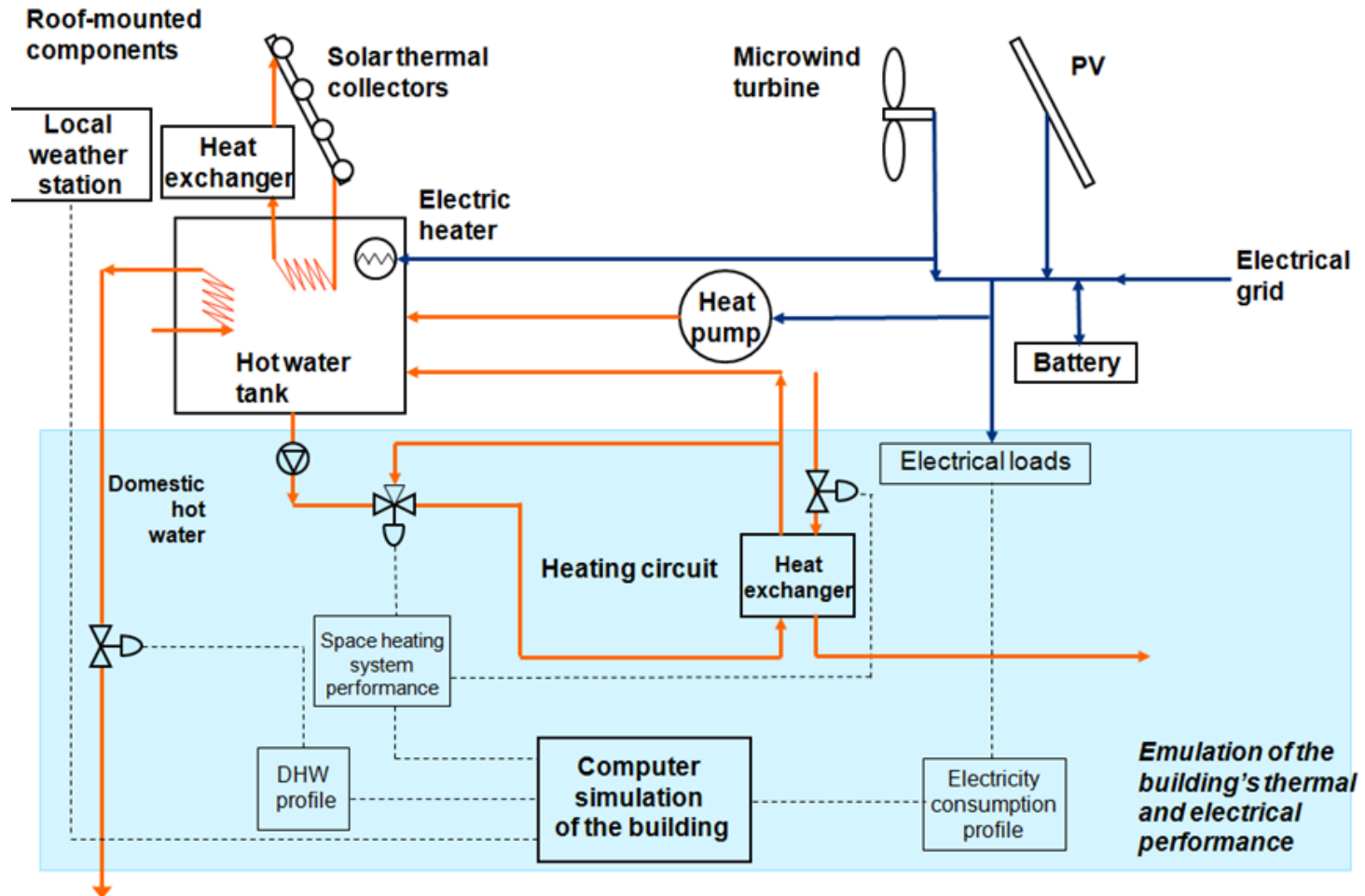
A technical report from IEA EBC Annex 67 Energy Flexible Buildings

Test facilities concept

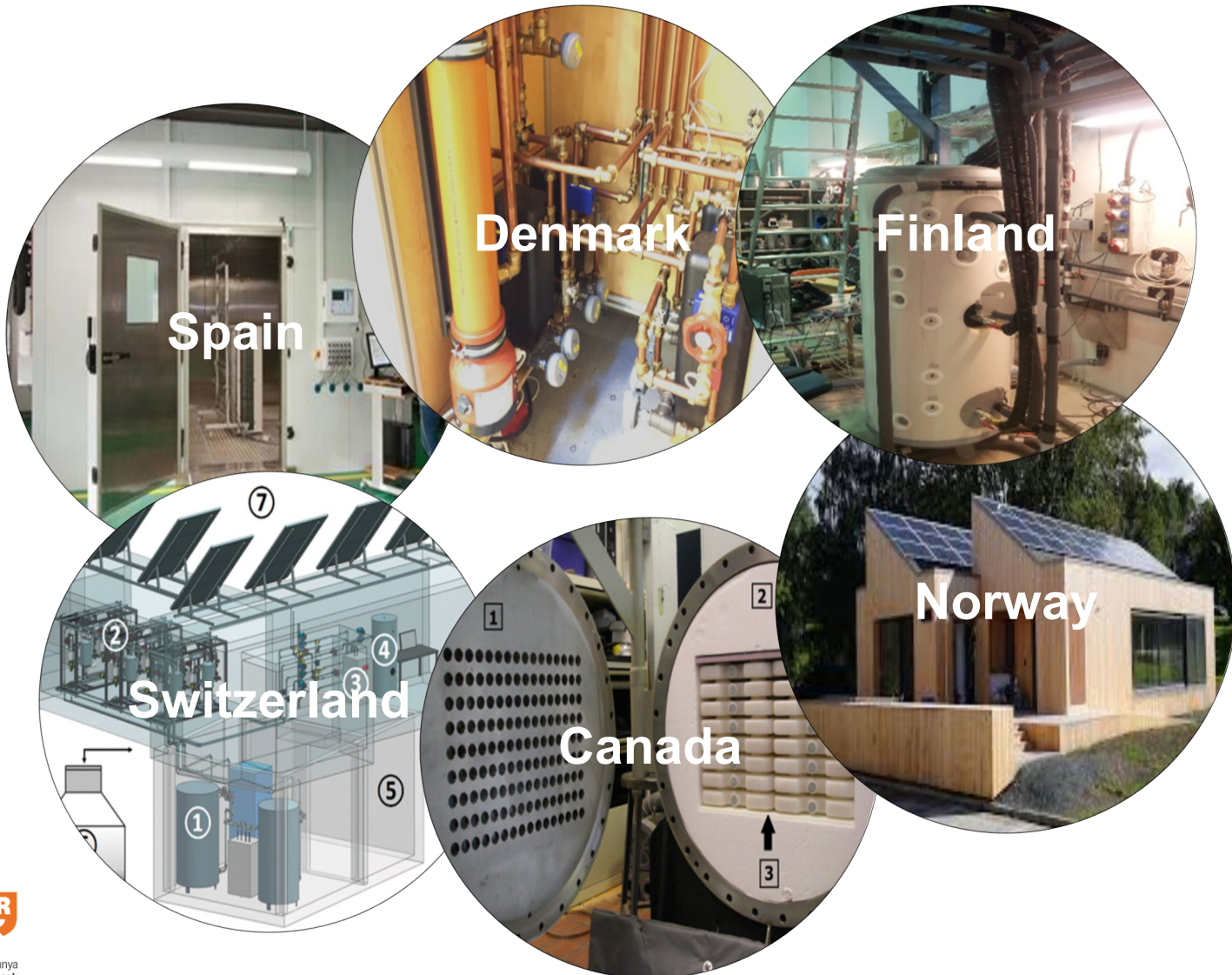
Semi-virtual method: Operation of real equipment according to the behaviour of a building/system computer model to emulate dynamic working conditions in Hardware-in-the-loop



Test facilities concept (2)



Overview of test facilities



Experiment at FHNW. The Energy Research lab

- Objective

To test the ability of an energy management system (EMS) to maximize self-consumption by aligning DHW generation with surplus PV generation.

