AARHUS
UNIVERSITY
DEPARTMENT OF ENGINEERING

FLEXIBLE BUILDINGS PROJECT AT AARHUS UNIVERSITY

STEFFEN PETERSEN
ASSOCIATE PROFESSOR

STP@ENG.AU.DK

VVP4SGR - Grundfos Dormatory Lab
ForskEl (2013-2016) Michael Dahl Knudsen

Weather forecast

Virtual building model

Energy price

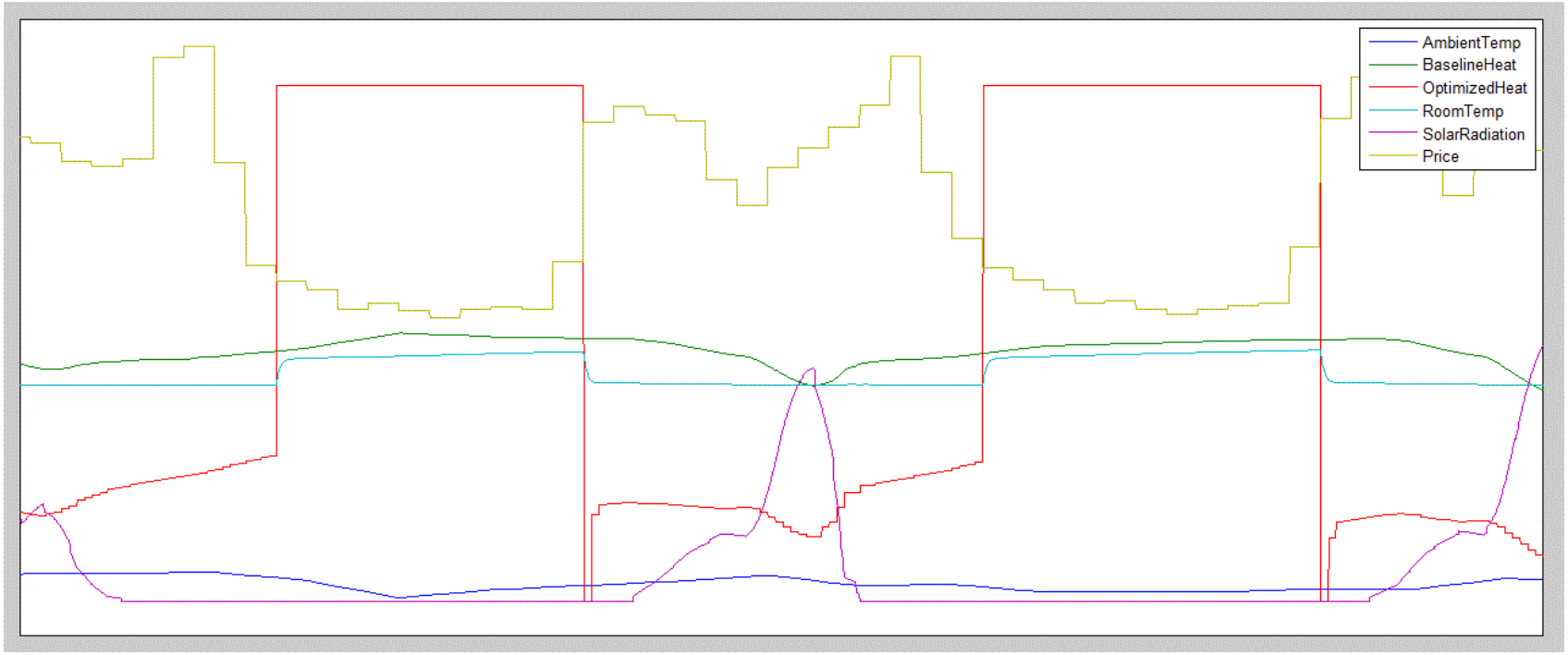
Control strategy

- Heating
- Ventilation
- Solar shading

Actual data

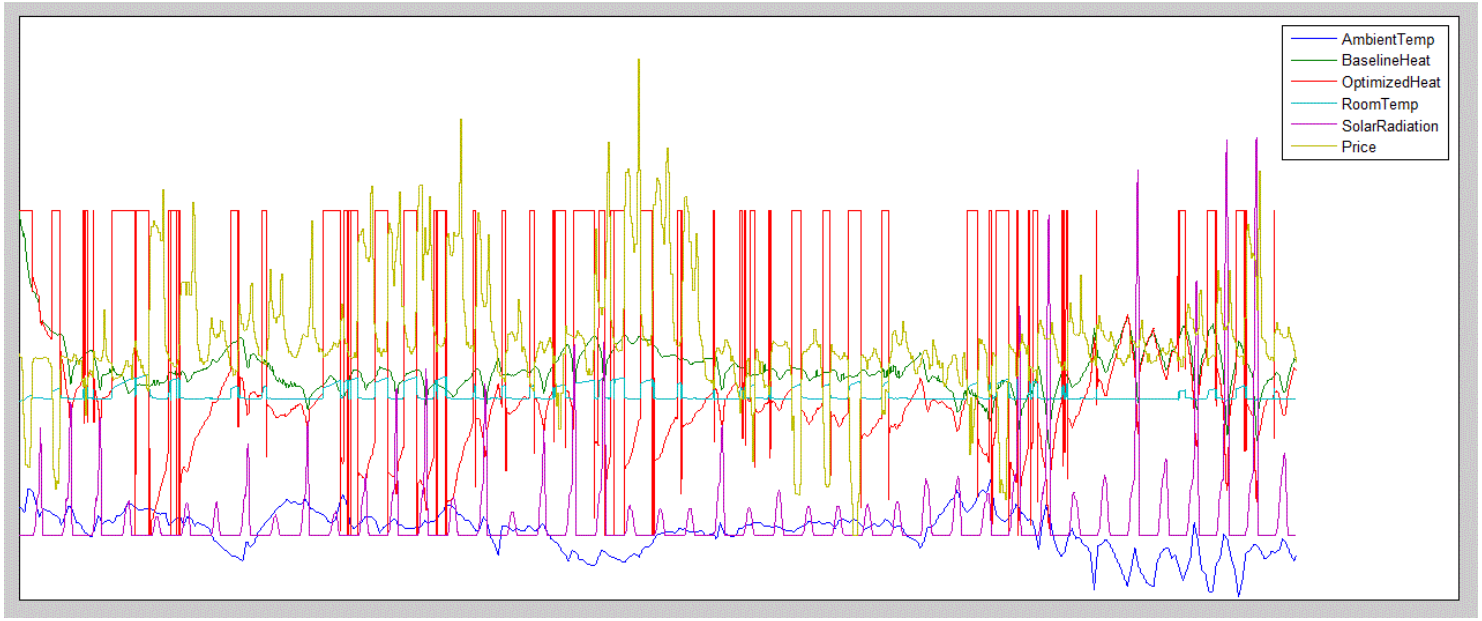
- Room temperature
- Air quality (CO_2)
- Relative humidity
- Heat, electricity and water use

THE MECHANISM



› **Smart building operation**
› **NO MORE NIGHT SETBACK – NIGHT BOOST!**

THE POTENTIAL



- **Smart building operation**
- **Difference in energy use: +5%**
- **Difference in energy bill: -5%**

The READY project

Resource Efficient cities implementing ADvanced smart citY solutions

- 23 partners in four countries including municipalities, universities, energy sector and industries. Budget of 33.5 mio €.

Objectives

- Demonstration of a balanced and holistic approach towards energy-retrofitting in housing areas of Växjö (approx. 48,401m^2) and Aarhus (55,492 m^2).
- Development and demonstration of smart solutions for low-temperature district heating, local storage, new components and management ICT systems.
- Development and demonstration of flexible combined grid balancing/electricity storage solutions for buildings and energy systems.
- Development of smart solutions for kitchens to optimize use of electricity, water and minimize waste from kitchens.
- Solutions for water efficiency and waste water energy recovery.

READY.DK

ForskEL (2015-2018) Theis Pedersen

- Very experimental – **multi-family houses** buildings from the READY project as case.
- Smart grid potential before and after refurbishment.
- Help identify the balance in investments in energy savings and smart energy supply.

READY (BONUS)

READY (2014-2019) Rasmus Elbæk

- Very experimental – **single-family houses** buildings from the READY project as case.
- Smart grid potential before and after refurbishment.
- Help identify the balance in investments in energy savings and smart energy supply.

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THANK YOU

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