

Digitalisation on  
demand side ...



Digital  
demand



It's all about  
lowering  
temperatures

An EU FP7 project between  
Viborg School Heating,  
Viborg Energy Association,  
Grundfos, Brunata and the  
Danish Technical University

Carsten Rungboingta

Head of Energy

Energy

Energy

Energy



Originally a family-owned Danish company

More than 100 years in business with heatcost allocation

Since 2018 a part of the Brunata/Minol/Zenner Group





Market share in DK  
around 40%

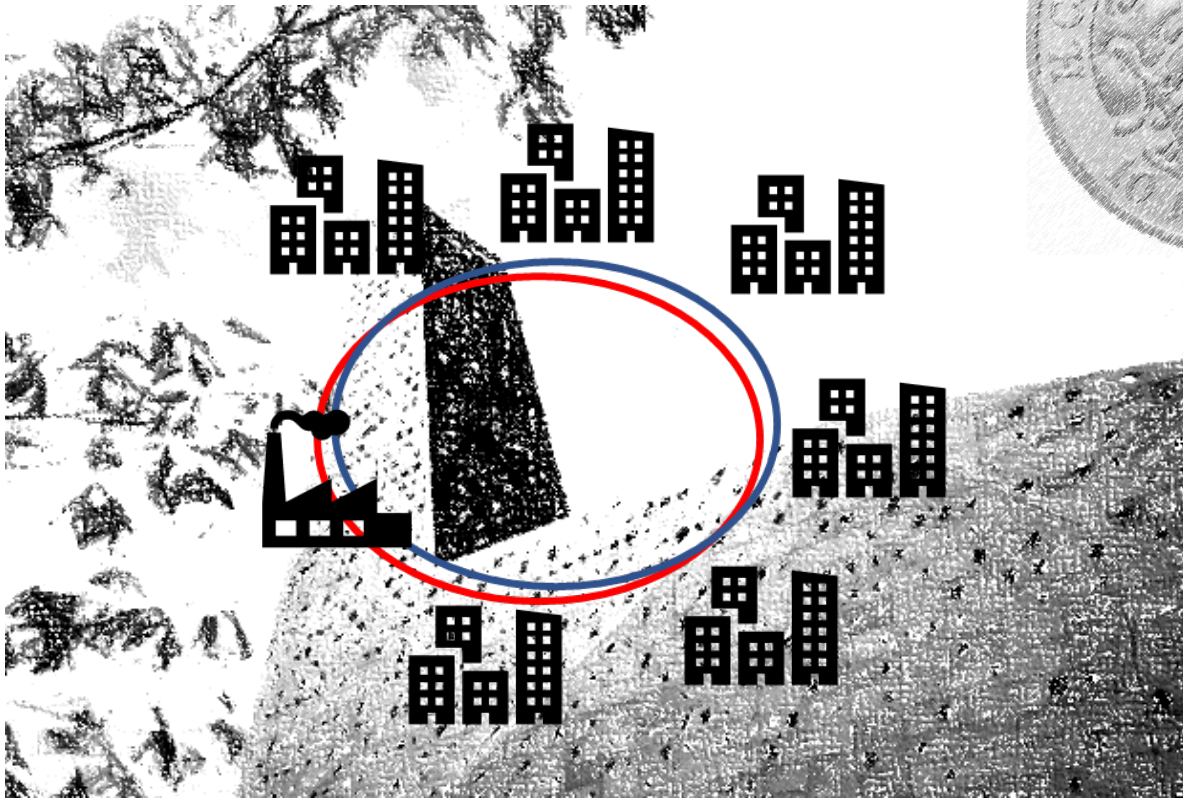
More than 2 million  
heatcost meters in  
business

... of this 70%  
continuously remotely  
read ... increasing



Nothing gets stronger  
than the weakest link  
in the chain...

... this applies to the district heating supply



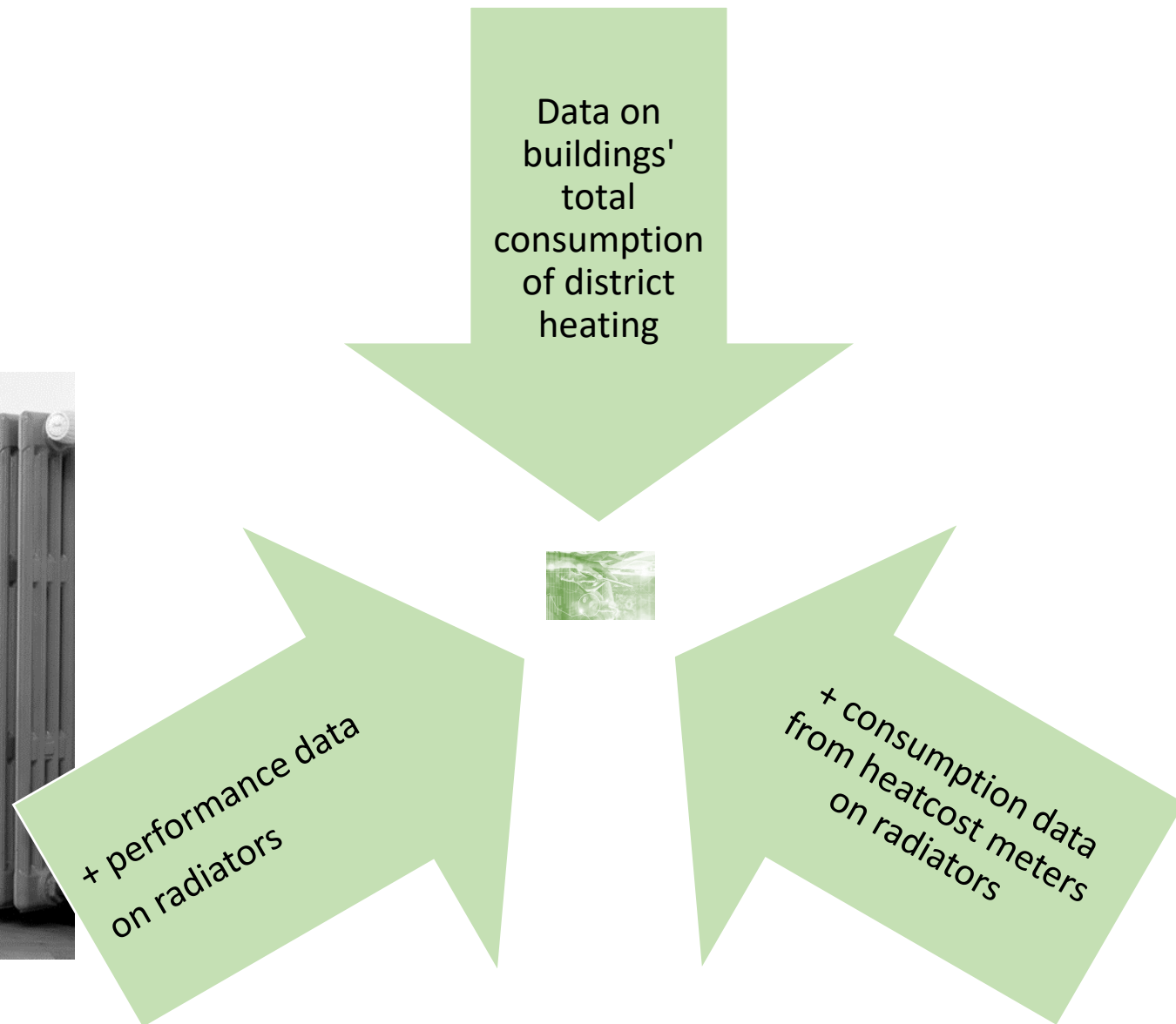
... and inside the buildings' heating systems







... but there is already  
an available solution ...

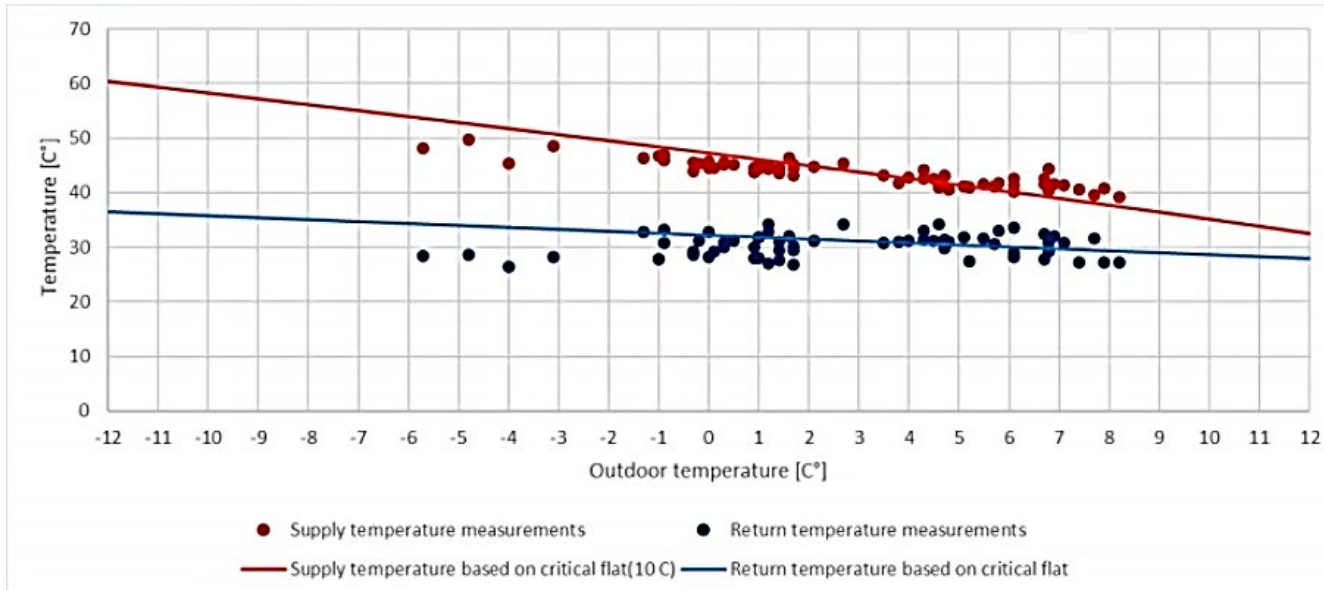






Creates a screening tool for the potential for lowering the supply temperature in buildings' space heating systems

Let's see how it works ...



Minimum supply temperature based on the critical flat compared to the daily average measured supply temperature for January 2022 and February 2022

Nice correlation between calculated and measured temperatures

... theory and practice are united



## What was done:

- Test case of 6 properties built in 1943-1996
- 1-wire and 2-wire heating systems
- None properties were comprehensively renovated for energy
- Only changes made to the heating curve of the heating control
- In a few cases a minor upward adjustment of pressure and flow too





## Pains and gains:

- Needed information for tenants to use all radiators to achieve comfort
- Only a few resident complaints afterwards
- Lower energy consumption due to lower pipe losses in internal heat distribution
- Significantly lowered return temperature from the properties



# DIGITALIZATION OF THE DEMAND-SIDE:

The enabler for low-temperature operations in existing buildings connected to district heating networks



By Michele Tunzi, Technical University of Denmark, DTU Construct, Department of Civil and Mechanical Engineering, and Svend Svendsen, Professor at Technical University of Denmark

## Abstract

The digitalization of the demand side increased significantly in the last few years. This was mainly due to the impulse of the European Energy Efficiency Directive (EED 2012/2018), binding member states to have all energy meters remotely readable by January 2027. In collaboration with the Danish industrial partners and the local district heating (DH) operator in Viborg, the innovative use and integration of data from heat cost allocators, DH energy meters, and temperature sensors helped secure low-temperature operations in existing buildings. It was documented that existing the local DH network can be comfortable and return temperature of 55/30 °C temperature without any deep energy saving or investments, yet secure correct the heating systems.

## Introduction

The new Green Deal set the new strategy for the transition towards a sustainable European energy system. The ambitious goals aim to achieve a carbon-free society by 2050 by integrat-



An EUDP project between Viborg District Heating, Viborg Housing Association, Grundfos, Brunata and the Danish Technical University has uncovered the possibility of low-temperature district heating in older buildings at the same time as a huge savings potential

- Only using data from existing main meters and secondary meters.

Read the full article ...

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