



**Using residential buildings to  
manage flexibility in the district  
heating network: perspectives and  
future visions from sector  
professionals**

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# Funding and Co-authors

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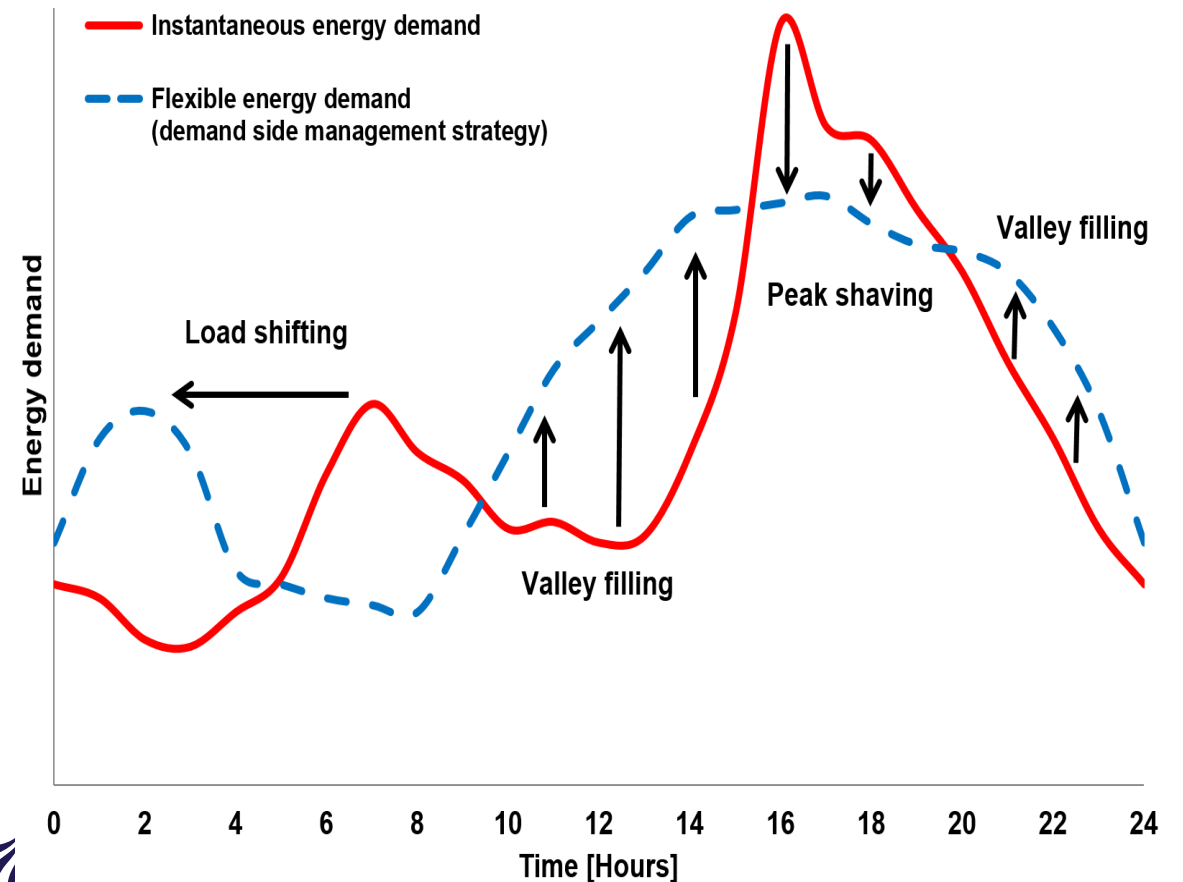
Strategic interdisciplinary research project  
at Aalborg University

- ▶ Three different faculties
- ▶ Four different institutes
- ▶ Spanning between civil engineering,  
humanities and social science



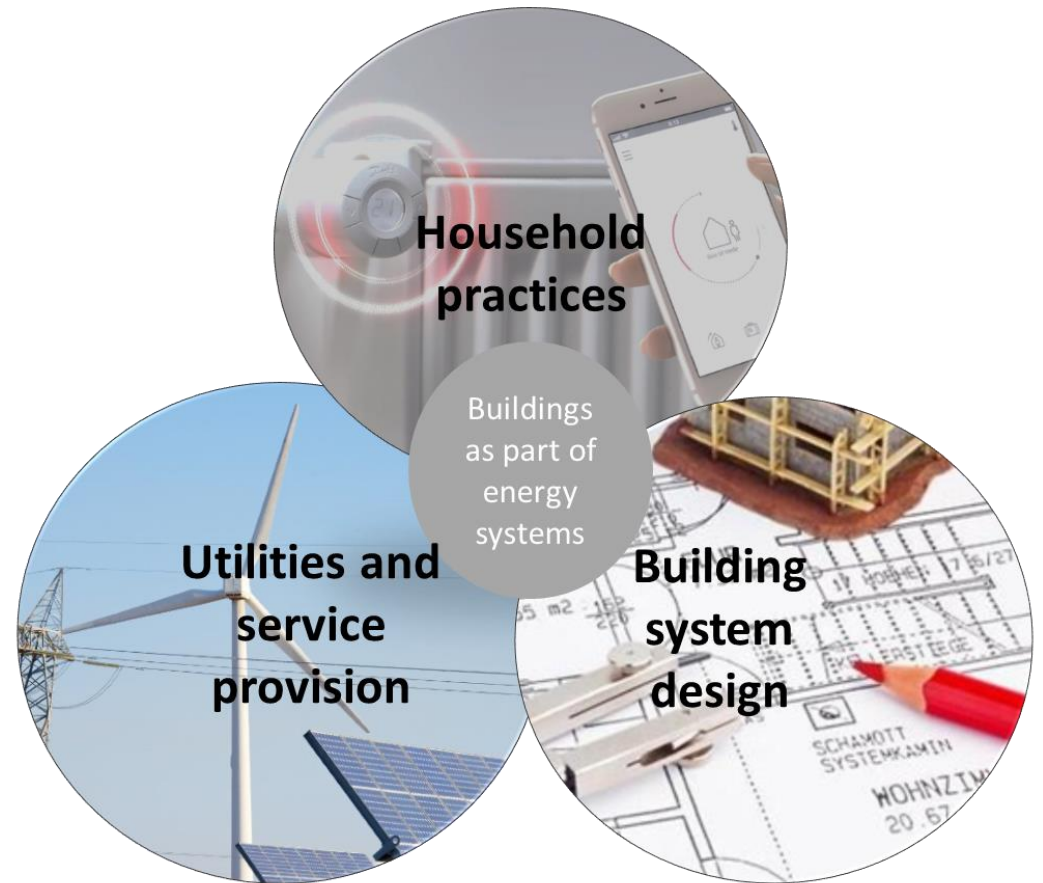
# Flexibility in demand?

- ▶ 100 % renewable and electricity integrated district heating – flexible demand is needed
- ▶ By preheating buildings they can provide some hours of energy storage
- ▶ An interdisciplinary approach is needed



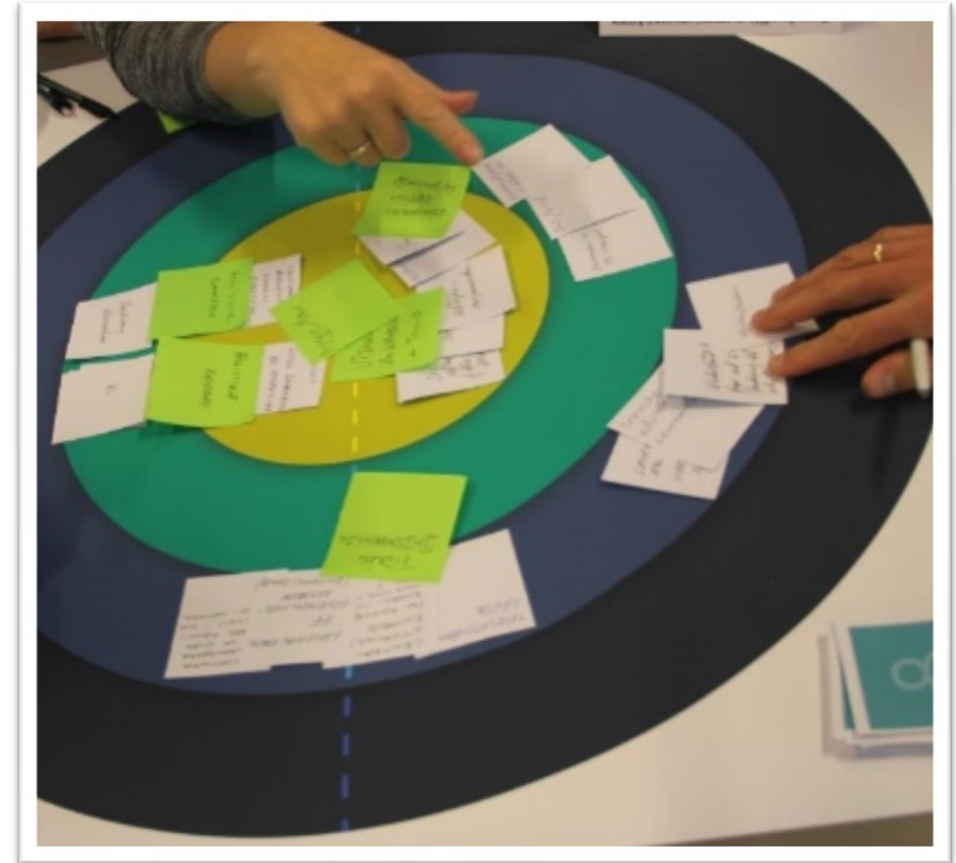
# InterHUB: Integrating households, Utilities and Buildings

- ▶ An interdisciplinary project
- ▶ Using buildings as flexibility generators in district heating
- ▶ Developing and testing future workshops (FW) as a method for interdisciplinary cooperation
- ▶ What do the sector say about buildings and flexibility in district heating?



# The future workshops – FW

- ▶ Three workshops: Aalborg, Copenhagen and Sønderborg with 36 participants divided into 7 groups
- ▶ Participants: municipalities, utilities, housing associations, private companies, and technology developers.
- ▶ Content: Three phases:
  - ▶ I) Identification and prioritization of main actors and infrastructures
  - ▶ II) Visions for solving the challenges;
  - ▶ III) Critical discussions of the feasibility of visions.
- ▶ The FWs were carried out with the help of game boards

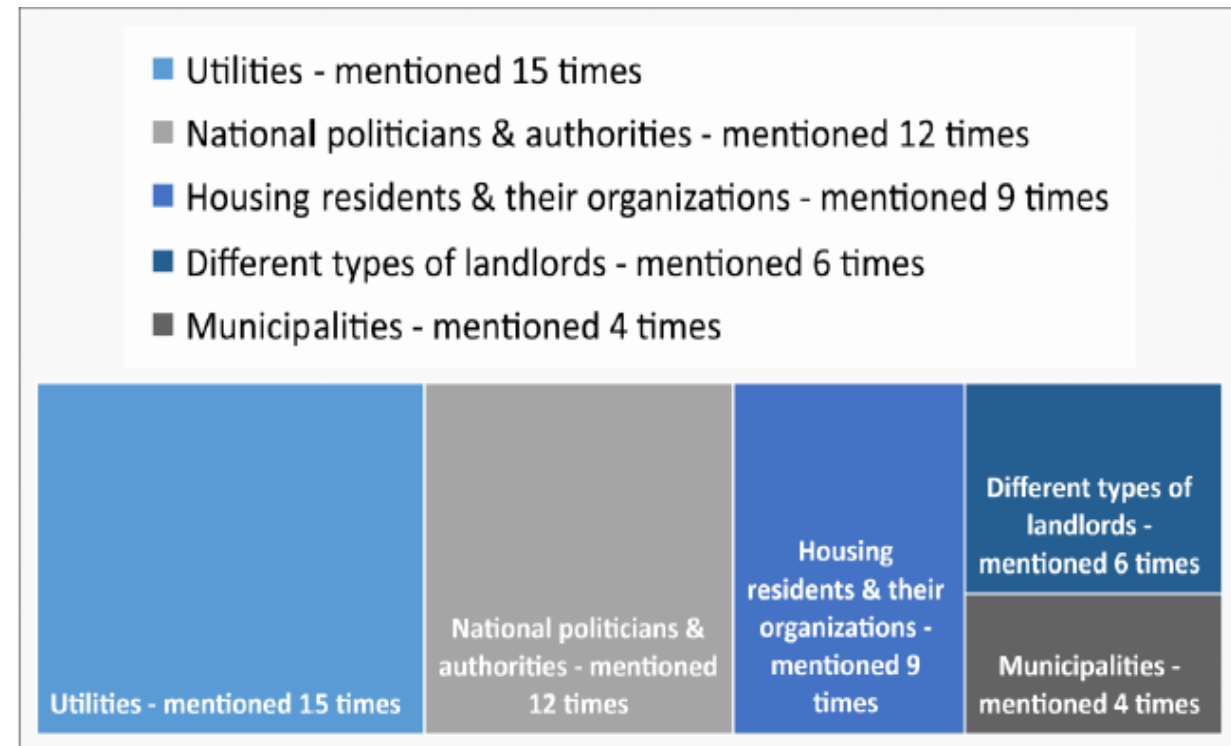


# Important actors according to FW participants

Amount of times key actors were mentioned when FW participants answered the question:

- What are/should be the most important actors for the integration of households in the future flexible DH systems?

The size of the boxes represent the relative amount of times the actors were mentioned.



# Key future challenges as anticipated by FW participants

- ▶ A) The current political/governance framework
- ▶ B) Systems flexibility, *defining* the different types of flexibility
- ▶ C) Identifying viable businesses cases and business models
- ▶ D) Documentation of the potentials for flexibility in the DH system
- ▶ E) Facilitation of the DH transition process
- ▶ F) Pricing structures as motivation



# FW as a method for interdisciplinarity and futures in the making

- ▶ Inter-professional sharing – and visioning futures
- ▶ Same or different backgrounds for participants?
- ▶ Differences in local context
- ▶ Analyzing the material in the interdisciplinary research group?





**Thank you for your attention**

**<https://www.interhub.aau.dk/>**

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